

SECTION **LAN**
LAN SYSTEM

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PRECAUTIONS

PF0:00001

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

AKS00BQM

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

AKS003TZ

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

AKS003M4

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.

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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-5, "CAN Communication Unit"](#) .

Precautions For Trouble Diagnosis CAN SYSTEM

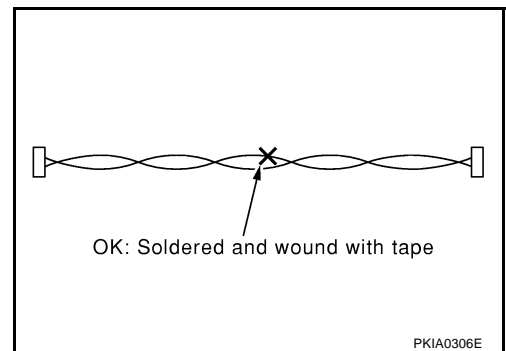
AKS000ZD

- 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.

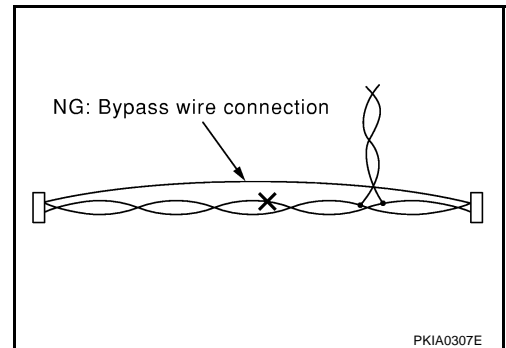
Precautions For Harness Repair CAN SYSTEM

AKS000ZE

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



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



CAN COMMUNICATION

PFP:23710

System Description

AKS000ZF

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

AKS00AVB

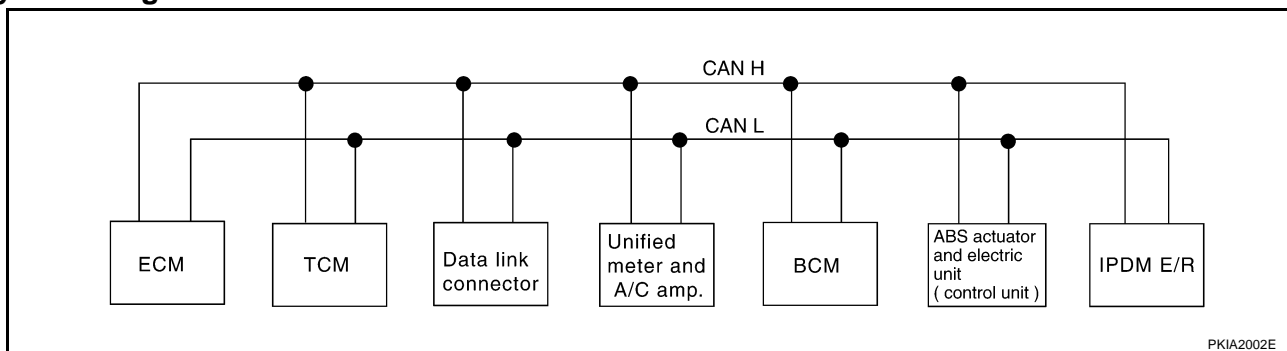
Go to CAN system, when selecting your CAN system type from the following table.

| | | | | | | |
|----------------------------------|----------|--------|--------|--------|--------|--------|
| Body type | Roadster | | Coupe | | | |
| Axle | 2WD | | | | | |
| Engine | VQ35DE | | | | | |
| Transmission | A/T | M/T | A/T | M/T | | |
| Brake control | TCS | TCS | TCS | ABS | TCS | VDC |
| Low tire pressure warning system | | | | | | × |
| CAN system type | 1 | 2 | 1 | 3 | 2 | 4 |
| CAN system trouble diagnosis | LAN-11 | LAN-38 | LAN-11 | LAN-62 | LAN-38 | LAN-86 |

×: Applicable

TYPE 1

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

| Signals | ECM | TCM | Unified meter and A/C amp. | BCM | ABS actuator and electric unit (control unit) | IPDM E/R |
|------------------------------------|-----|-----|----------------------------|-----|---|----------|
| Engine speed signal | T | R | R | | R | |
| Engine coolant temperature signal | T | | 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 | |

CAN COMMUNICATION

[CAN]

| Signals | ECM | TCM | Unified meter and A/C amp. | BCM | ABS actuator and electric unit (control unit) | IPDM E/R |
|---|-----|-----|----------------------------|-----|---|----------|
| Manual mode gear position signal | | T | 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 speed request signal | T | | | | | R |
| Position lights request signal | | | R | T | | R |
| Low beam request signal | | | | T | | R |
| Low beam status signal | R | | | | | T |
| High beam request signal | | | R | T | | R |
| High beam status signal | R | | | | | T |
| Day time running light request signal | | | | T | | R |
| Vehicle speed signal | | | R | | T | |
| | R | R | T | R | | |
| Sleep request 1 signal | | | R | T | | |
| Sleep request 2 signal | | | | T | | R |
| Wake up request 1 signal | | | R | T | | |
| Door switch signal | | | R | T | | R |
| Turn indicator signal | | | R | T | | |
| Seat belt buckle switch signal | | | T | R | | |
| Buzzer output signal | | | R | T | | |
| Fuel level sensor signal | R | | T | | | |
| Malfunction indicator lamp signal | T | | R | | | |
| ASCD SET lamp signal | T | | R | | | |
| ASCD operation signal | T | R | | | | |
| ASCD CRUISE lamp signal | T | | R | | | |
| ASCD OD cancel request signal | T | R | | | | |
| Output shaft revolution signal | R | T | | | | |
| Turbine revolution signal | R | T | | | | |
| 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 |
| Manual mode signal | | R | T | | | |
| Not manual mode signal | | R | T | | | |
| Manual mode shift up signal | | R | T | | | |
| Manual mode shift down signal | | R | T | | | |
| Manual mode indicator signal | | T | R | | | |
| Theft warning horn request signal | | | | T | | R |
| Horn chirp signal | | | | T | | R |

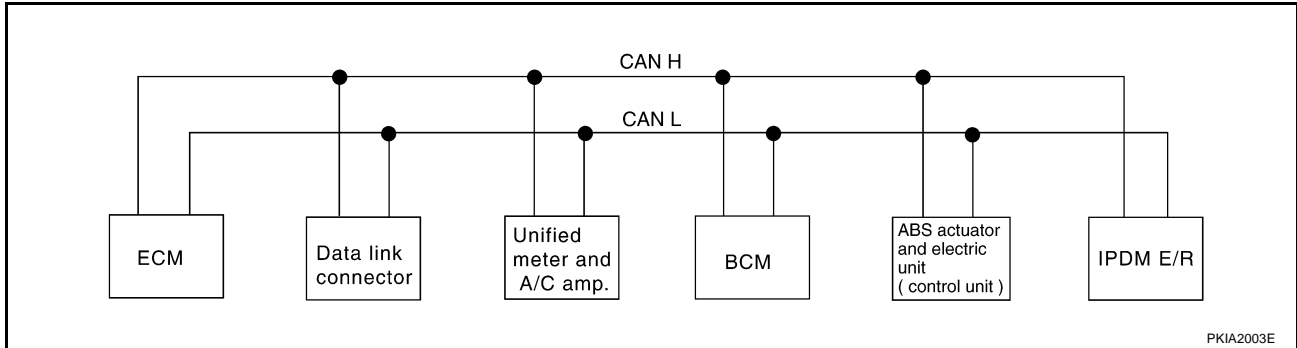
CAN COMMUNICATION

[CAN]

| Signals | ECM | TCM | Unified meter and A/C amp. | BCM | ABS actuator and electric unit (control unit) | IPDM E/R |
|-------------------------------|-----|-----|----------------------------|-----|---|----------|
| Ignition switch signal | | | | T | | R |
| ABS warning lamp signal | | | R | | T | |
| TCS OFF indicator lamp signal | | | R | | T | |
| SLIP indicator lamp signal | | | R | | T | |
| Brake warning lamp signal | | | R | | T | |

TYPE 2

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

| Signals | ECM | Unified meter and A/C amp. | BCM | ABS actuator and electric unit (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 | | | |
| Blower fan motor switch signal | R | | T | | |
| Cooling fan speed request signal | T | | | | R |
| Position lights request signal | | R | T | | R |
| Low beam request signal | | | T | | R |
| Low beam status signal | R | | | | T |
| High beam request signal | | R | T | | R |
| High beam status signal | R | | | | T |
| Day time running light request signal | | | T | | R |
| Vehicle speed signal | | R | | T | |
| | R | T | R | | |
| Sleep request 1 signal | | R | T | | |
| Sleep request 2 signal | | | T | | R |
| Wake up request 1 signal | | R | T | | |
| Door switch signal | | R | T | | R |
| Turn indicator signal | | R | T | | |
| Seat belt buckle switch signal | | T | R | | |

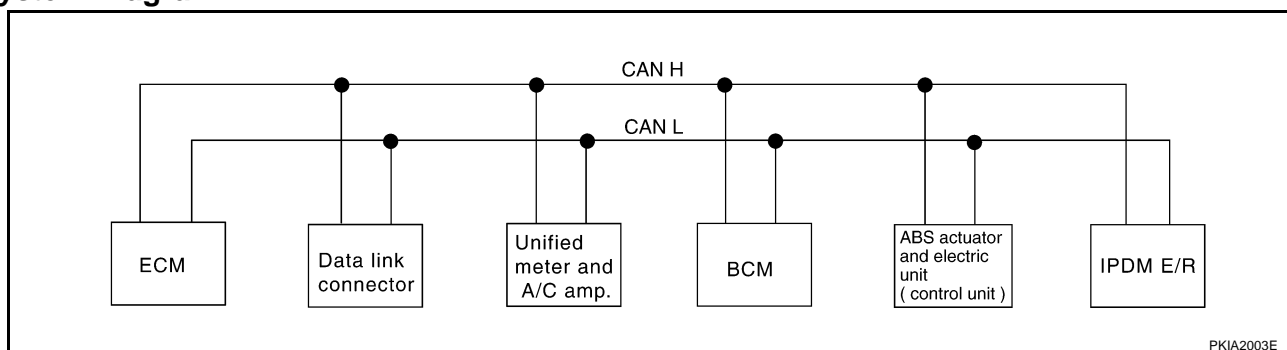
CAN COMMUNICATION

[CAN]

| Signals | ECM | Unified meter and A/C amp. | BCM | ABS actuator and electric unit (control unit) | IPDM E/R |
|-------------------------------------|-----|----------------------------|-----|---|----------|
| Buzzer output signal | | R | T | | |
| Fuel level sensor signal | R | T | | | |
| Malfunction indicator lamp signal | T | R | | | |
| ASCD SET lamp signal | T | R | | | |
| ASCD CRUISE lamp signal | T | R | | | |
| Front wiper request signal | | | T | | R |
| Front wiper stop position signal | | | R | | T |
| Rear window defogger switch signal | | | T | | R |
| Rear window defogger control signal | R | | | | T |
| Theft warning horn request signal | | | T | | R |
| Horn chirp signal | | | T | | R |
| Ignition switch signal | | | T | | R |
| ABS warning lamp signal | | R | | T | |
| TCS OFF indicator lamp signal | | R | | T | |
| SLIP indicator lamp signal | | R | | T | |
| Brake warning lamp signal | | R | | T | |

TYPE 3

System Diagram



Input/output Signal Chart

T: Transmit R: Receive

| Signals | ECM | Unified meter and A/C amp. | BCM | ABS actuator and electric unit (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 | | | |
| Blower fan motor switch signal | R | | T | | |
| Cooling fan speed request signal | T | | | | R |
| Position lights request signal | | R | T | | R |
| Low beam request signal | | | T | | R |
| Low beam status signal | R | | | | T |

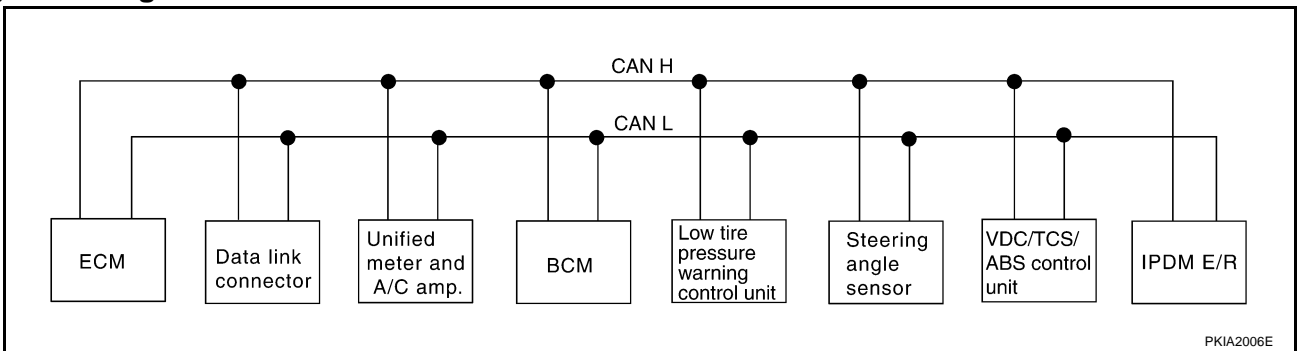
CAN COMMUNICATION

[CAN]

| Signals | ECM | Unified meter and A/C amp. | BCM | ABS actuator and electric unit (control unit) | IPDM E/R |
|---------------------------------------|-----|----------------------------|-----|---|----------|
| High beam request signal | | R | T | | R |
| High beam status signal | R | | | | T |
| Day time running light request signal | | | T | | R |
| Vehicle speed signal | | R | | T | |
| | R | T | R | | |
| Sleep request 1 signal | | R | T | | |
| Sleep request 2 signal | | | T | | R |
| Wake up request 1 signal | | R | T | | |
| Door switch signal | | R | T | | R |
| Turn indicator signal | | R | T | | |
| Seat belt buckle switch signal | | T | R | | |
| Buzzer output signal | | R | T | | |
| Fuel level sensor signal | R | T | | | |
| Malfunction indicator lamp signal | T | R | | | |
| ASCD SET lamp signal | T | R | | | |
| ASCD CRUISE lamp signal | T | R | | | |
| Front wiper request signal | | | T | | R |
| Front wiper stop position signal | | | R | | T |
| Rear window defogger switch signal | | | T | | R |
| Rear window defogger control signal | R | | | | T |
| Theft warning horn request signal | | | T | | R |
| Horn chirp signal | | | T | | R |
| Ignition switch signal | | | T | | R |
| Tire pressure signal | | R | | | |
| ABS warning lamp signal | | R | | T | |
| Brake warning lamp signal | | R | | T | |

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TYPE 4 System Diagram



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Input/output Signal Chart

T: Transmit R: Receive

| Signals | ECM | Unified meter and A/C amp. | BCM | Low tire pressure warning control unit | Steering angle sensor | VDC/TCS/ABS control unit | IPDM E/R |
|-----------------------------------|-----|----------------------------|-----|--|-----------------------|--------------------------|----------|
| Engine speed signal | T | R | | | | R | |
| Engine coolant temperature signal | T | R | | | | | |

CAN COMMUNICATION

[CAN]

| Signals | ECM | Unified meter and A/C amp. | BCM | Low tire pressure warning control unit | Steering angle sensor | VDC/TCS/ABS control unit | IPDM E/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 | | | | | |
| Blower fan motor switch signal | R | | T | | | | |
| Cooling fan speed request signal | T | | | | | | R |
| Position lights request signal | | R | T | | | | R |
| Low beam request signal | | | T | | | | R |
| Low beam status signal | R | | | | | | T |
| High beam request signal | | R | T | | | | R |
| High beam status signal | R | | | | | | T |
| Day time running light request signal | | | T | | | | R |
| Vehicle speed signal | | R | | | | T | |
| | R | T | R | R | | | |
| Sleep request 1 signal | | R | T | | | | |
| Sleep request 2 signal | | | T | | | | R |
| Wake up request 1 signal | | R | T | | | | |
| Door switch signal | | R | T | | | | R |
| Turn indicator signal | | R | T | | | | |
| Seat belt buckle switch signal | | T | R | | | | |
| Buzzer output signal | | R | T | | | | |
| Fuel level sensor signal | R | T | | | | | |
| Malfunction indicator signal | T | R | | | | | |
| ASCD SET lamp signal | T | R | | | | | |
| ASCD CRUISE lamp signal | T | R | | | | | |
| Front wiper request signal | | | T | | | | R |
| Front wiper stop position signal | | | R | | | | T |
| Rear window defogger switch signal | | | T | | | | R |
| Rear window defogger control signal | R | | | | | | 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 | | | |
| ABS warning lamp signal | | R | | | | T | |
| VDC OFF indicator lamp signal | | R | | | | T | |
| SLIP indicator lamp signal | | R | | | | T | |
| Brake warning lamp signal | | R | | | | T | |

CAN SYSTEM (TYPE 1)

PFP:23710

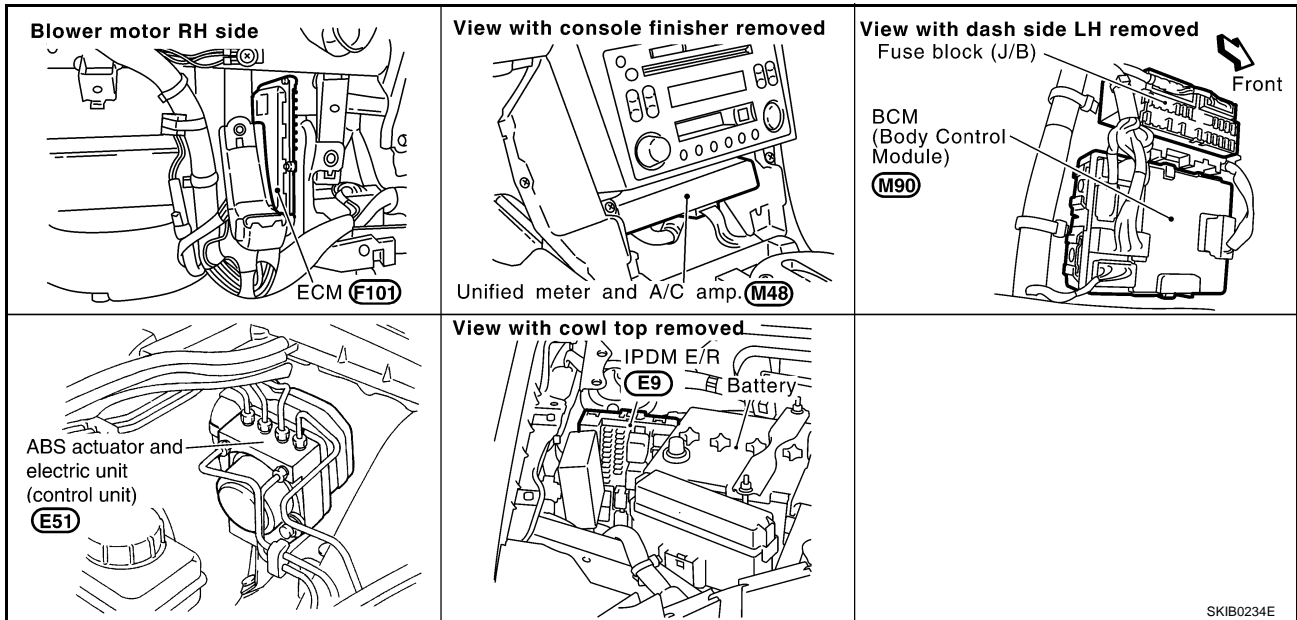
System Description

AKS00ABP

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

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CAN SYSTEM (TYPE 1)

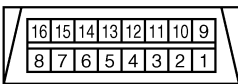
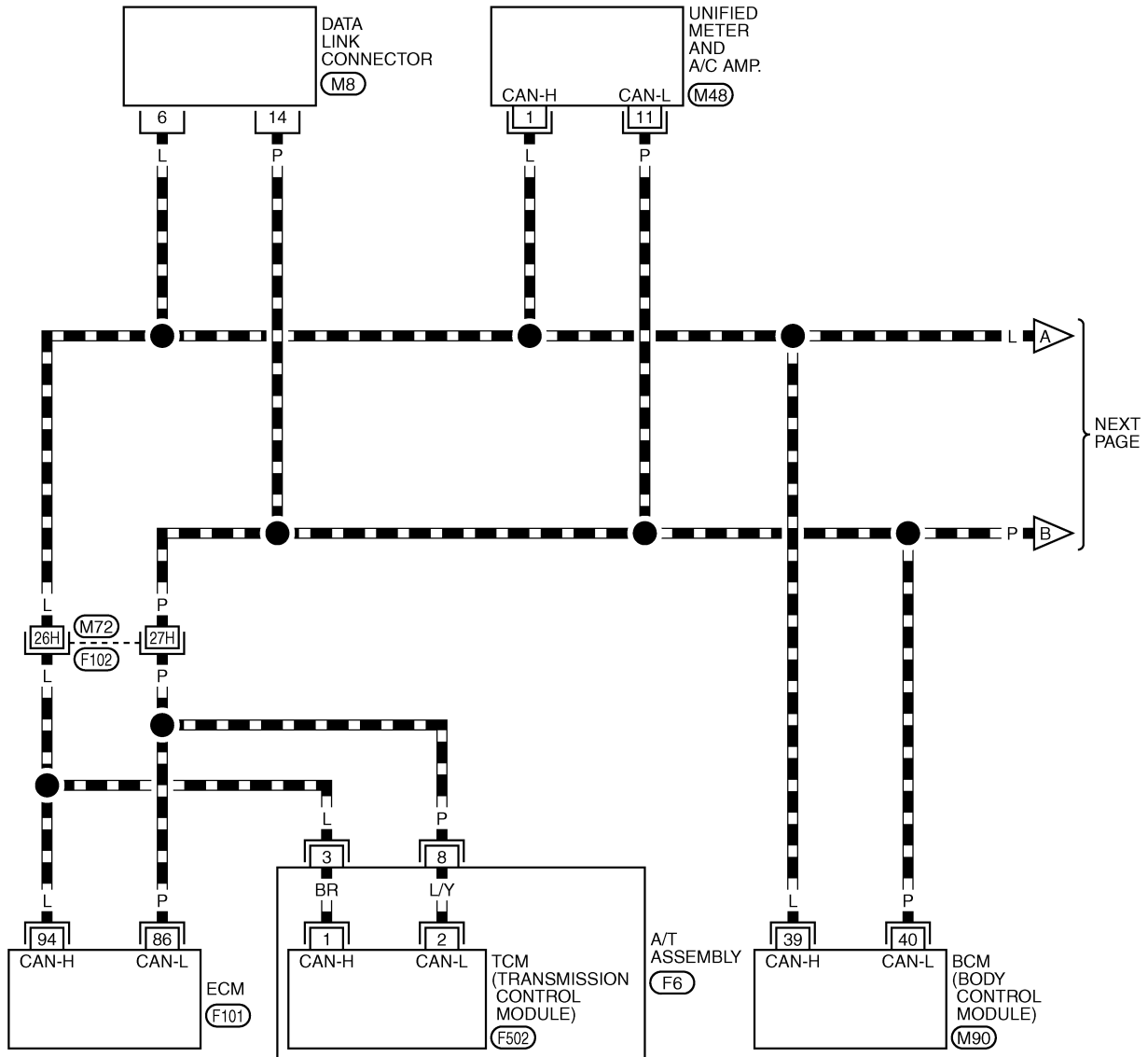
[CAN]

AKS00ABR

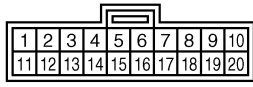
Wiring Diagram — CAN —

LAN-CAN-01

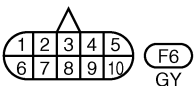
▬ : DATA LINE



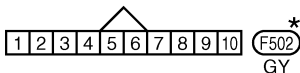
(M8)
W



(M48)
GY



(F6)
GY



(F502)
GY

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

REFER TO THE FOLLOWING.

(F102) -SUPER MULTIPLE JUNCTION (SMJ)

(M90), (F101) -ELECTRICAL UNITS

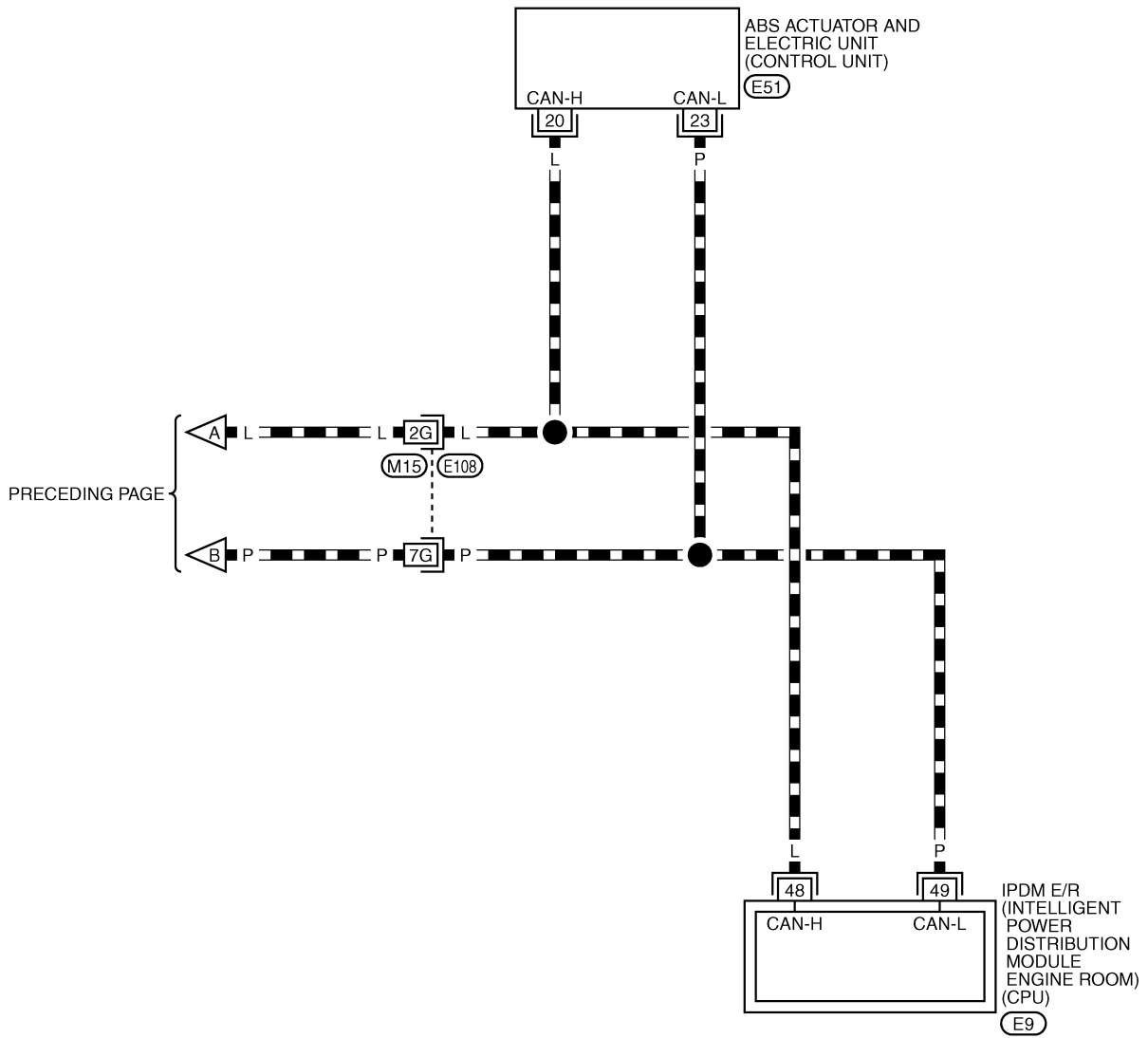
TKWM1380E

CAN SYSTEM (TYPE 1)

[CAN]

LAN-CAN-02

▬ : DATA LINE



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

E9
W



REFER TO THE FOLLOWING.

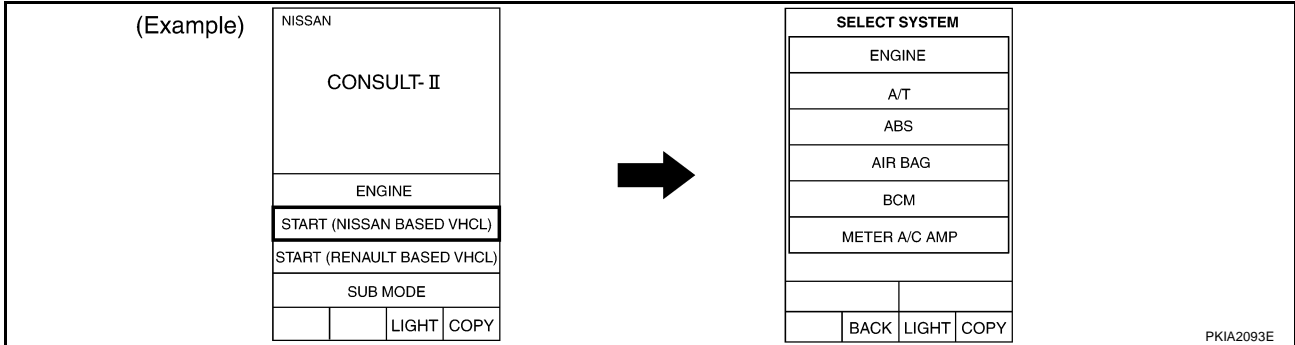
E108 -SUPER MULTIPLE JUNCTION (SMJ)

E51 -ELECTRICAL UNITS

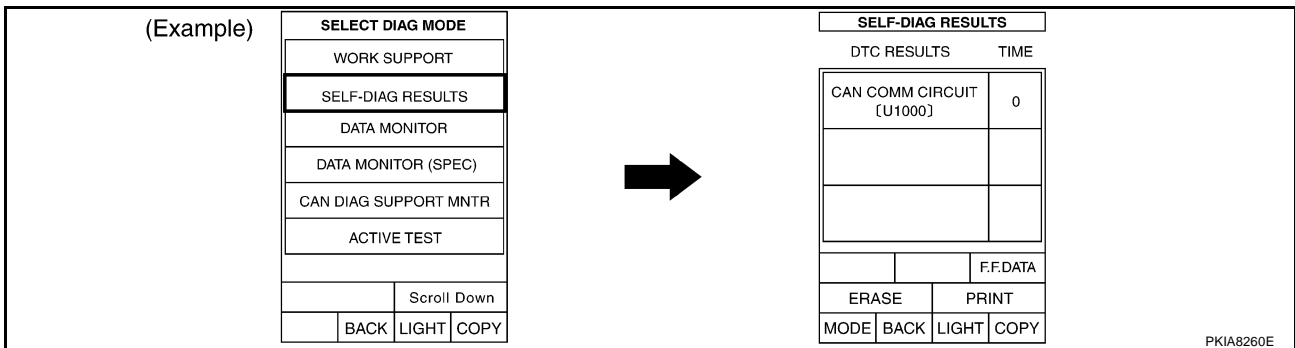
TKWT1554E

Work Flow

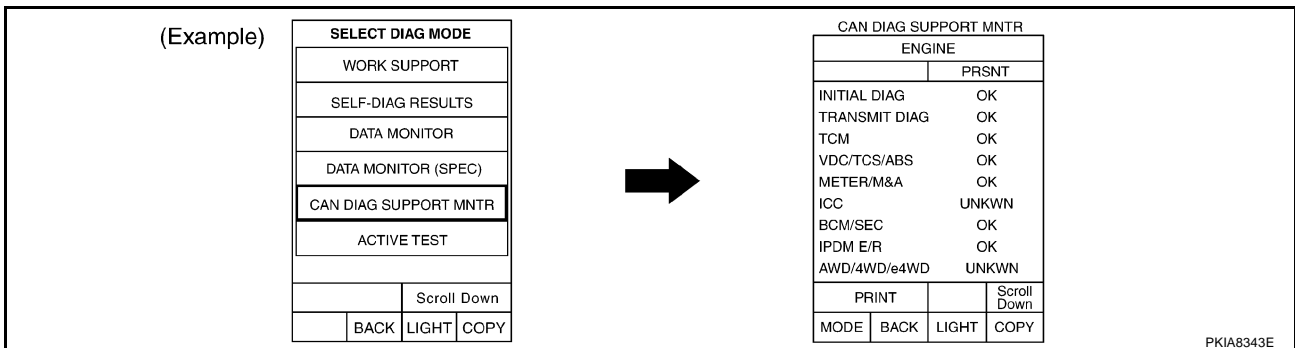
- When there are no indications of "METER A/C AMP", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



- Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "A/T", "METER A/C AMP", "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-15, "CHECK SHEET"](#) .

- Based on the indications of "SELECT SYSTEM" and the results of "CAN DIAG SUPPORT MNTR", put marks "v" onto the items with "No indication", "NG", or "UNKWKN" in the check sheet table. Refer to [LAN-15, "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-17, "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 | TCM | METER /M&A | BCM/SEC | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | UNKWN | UNKWN | UNKWN |
| A/T | — | NG | UNKWN | UNKWN | — | UNKWN | — | UNKWN | — |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | UNKWN | — | UNKWN | UNKWN | — |
| BCM | No indication | NG | UNKWN | UNKWN | — | UNKWN | — | — | UNKWN |
| ABS | — | NG | UNKWN | UNKWN | UNKWN | — | — | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | — | UNKWN | — | — |

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

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LAN

CAN SYSTEM (TYPE 1)

[CAN]

Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
A/T
SELF-DIAG RESULTS

Attach copy of
METER A/C AMP
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

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CAN DIAG SUPPORT
MNTR

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CAN DIAG SUPPORT
MNTR

Attach copy of
METER A/C AMP
CAN DIAG SUPPORT
MNTR

Attach copy of
BCM
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MNTR

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ABS
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IPDM E/R
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MNTR

PKIA8199E

CAN SYSTEM (TYPE 1)

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

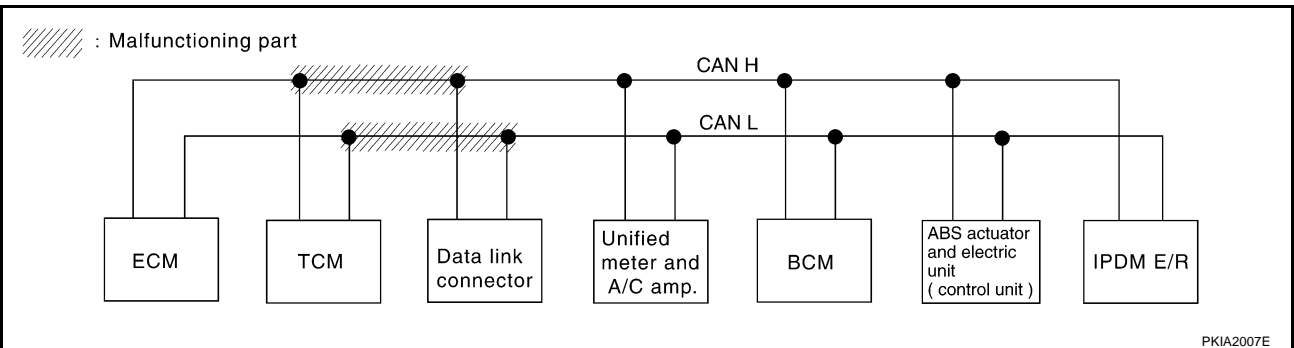
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between TCM and data link connector. Refer to [LAN-29, "Circuit Check Between TCM and Data Link Connector"](#)

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

PKIA8200E



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CAN SYSTEM (TYPE 1)

[CAN]

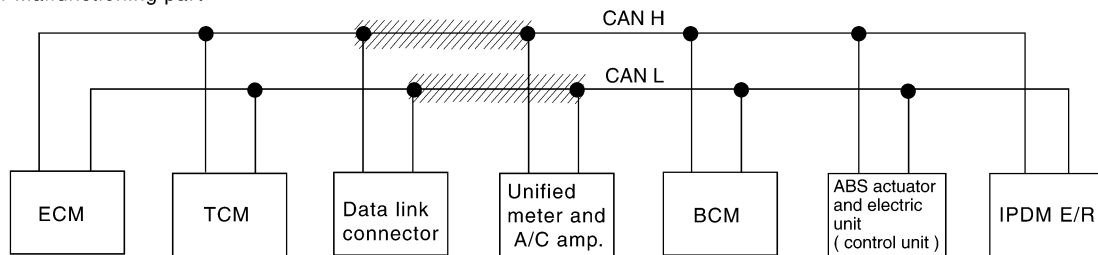
Case 2

Check harness between data link connector and unified meter and A/C amp. Refer to [LAN-30, "Circuit Check Between Data Link Connector and Unified Meter and A/C Amp."](#)

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

PKIA8201E

/// : Malfunctioning part



PKIA2008E

CAN SYSTEM (TYPE 1)

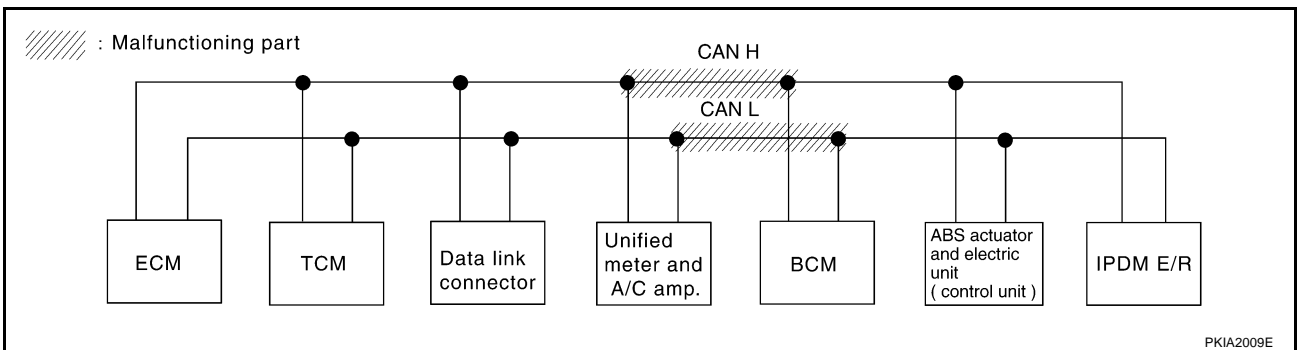
[CAN]

Case 3

Check harness between unified meter and A/C amp. and BCM. Refer to [LAN-30, "Circuit Check Between Unified Meter and A/C Amp. and BCM"](#) .

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

PKIA8202E



PKIA2009E

LAN

CAN SYSTEM (TYPE 1)

[CAN]

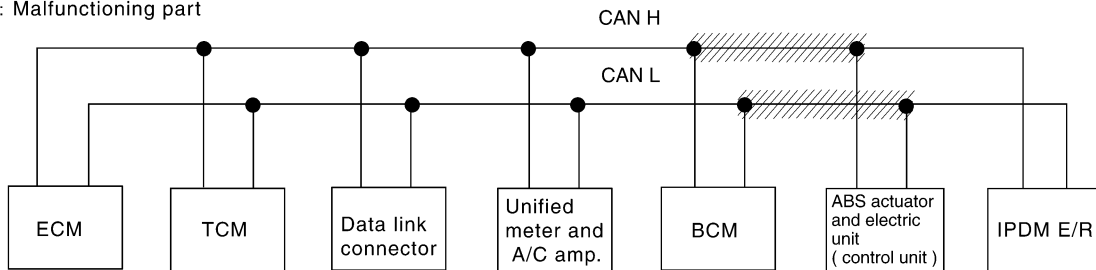
Case 4

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-30, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#) .

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

PKIA8203E

//// : Malfunctioning part



PKIA2010E

CAN SYSTEM (TYPE 1)

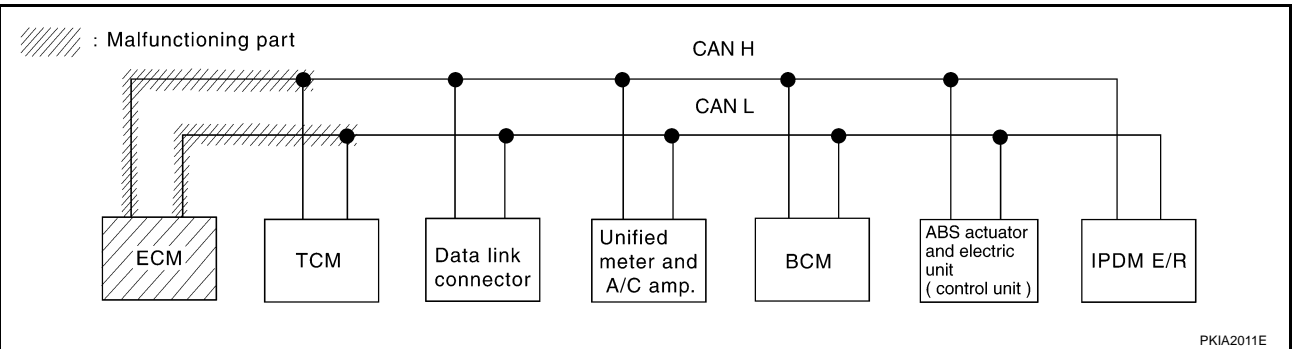
[CAN]

Case 5

Check ECM circuit. Refer to [LAN-31, "ECM Circuit Check"](#) .

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

PKIA8204E



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CAN SYSTEM (TYPE 1)

[CAN]

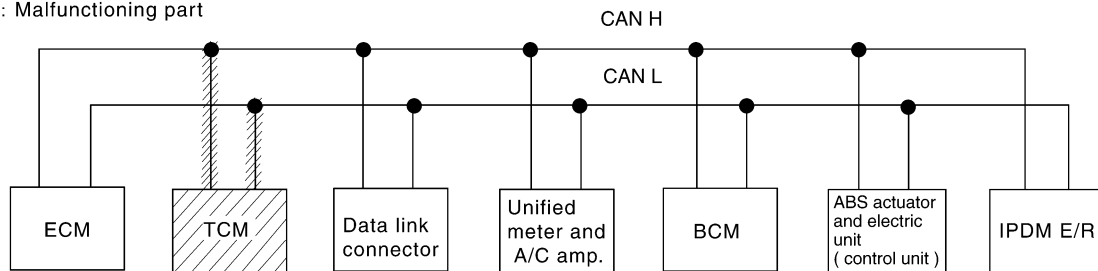
Case 6

Check TCM circuit. Refer to [LAN-32, "TCM Circuit Check"](#) .

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

PKIA8205E

▨ : Malfunctioning part



PKIA2012E

CAN SYSTEM (TYPE 1)

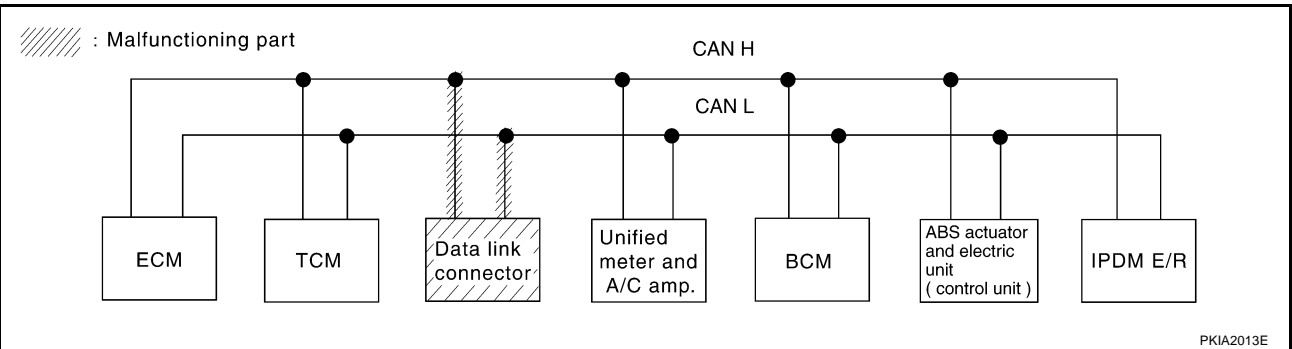
[CAN]

Case 7

Check data link connector circuit. Refer to [LAN-32, "Data Link Connector Circuit Check"](#) .

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

PKIA8206E



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CAN SYSTEM (TYPE 1)

[CAN]

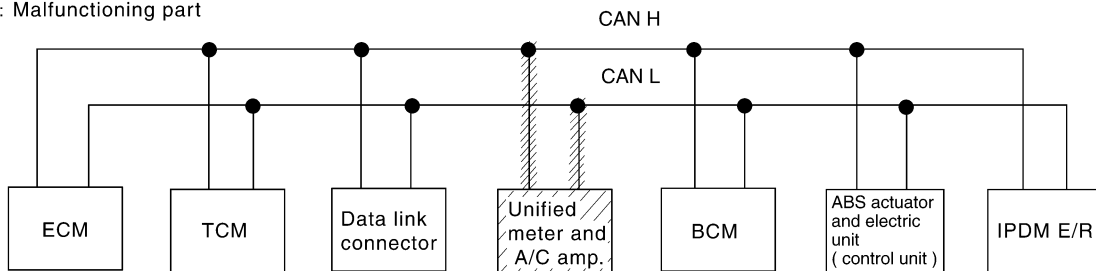
Case 8

Check unified meter and A/C amp. circuit. Refer to [LAN-33, "Unified Meter and A/C Amp. Circuit Check"](#) .

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

PKIA8207E

//// : Malfunctioning part



PKIA2014E

CAN SYSTEM (TYPE 1)

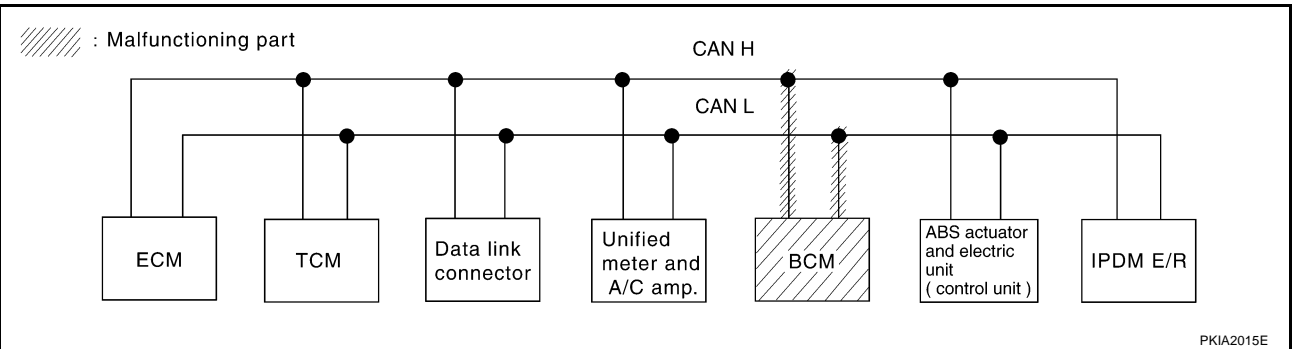
[CAN]

Case 9

Check BCM circuit. Refer to [LAN-33, "BCM Circuit Check"](#) .

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

PKIA8208E



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CAN SYSTEM (TYPE 1)

[CAN]

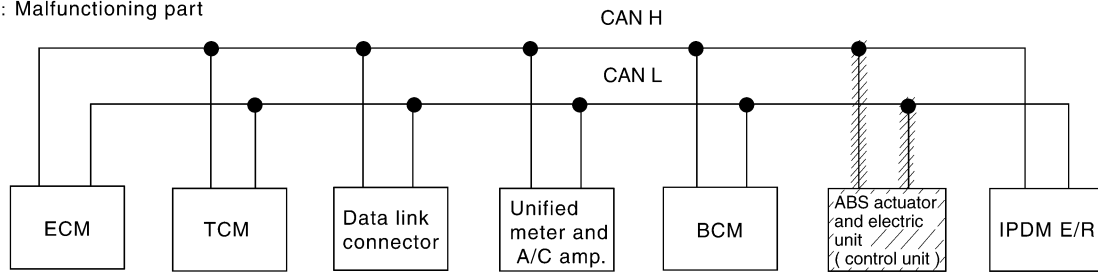
Case 10

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-34, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

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

PKIA8209E

//// : Malfunctioning part



PKIA2016E

CAN SYSTEM (TYPE 1)

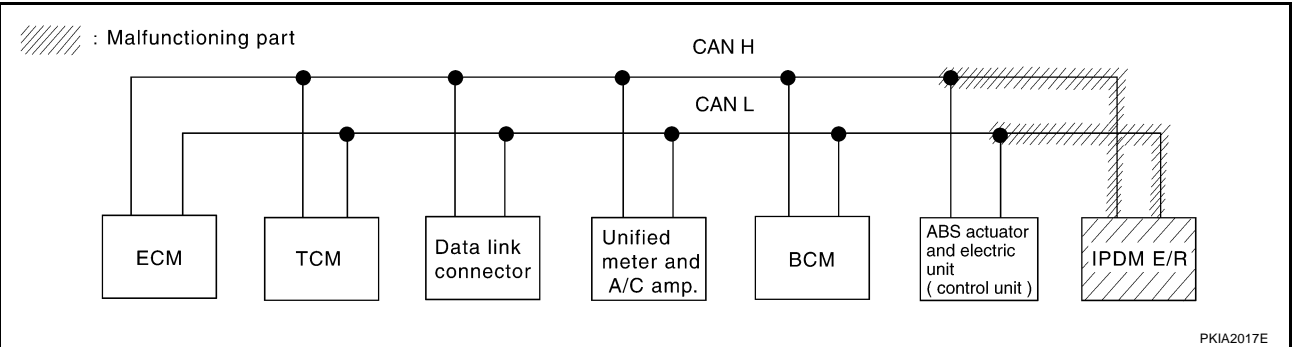
[CAN]

Case 11

Check IPDM E/R circuit. Refer to [LAN-34, "IPDM E/R Circuit Check"](#) .

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

PKIA8210E



Case 12

Check CAN communication circuit. Refer to [LAN-35, "CAN Communication Circuit Check"](#) .

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

PKIA8211E

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CAN SYSTEM (TYPE 1)

[CAN]

Case 13

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-37, "IPDM E/R Ignition Relay Circuit Check"](#) .

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

PKIA8212E

Case 14

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-37, "IPDM E/R Ignition Relay Circuit Check"](#) .

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

PKIA8213E

Circuit Check Between TCM and Data Link Connector

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 (connector side and harness side).
 - Harness connector F102
 - Harness connector M72

OK or NG

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

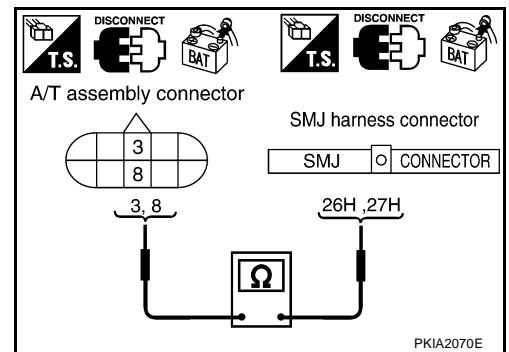
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector and harness connector F102.
2. Check continuity between A/T assembly harness connector F6 terminals 3 (L), 8 (P) and harness connector F102 terminals 26H (L), 27H (P).

3 (L) – 26H (L) : Continuity should exist.
8 (P) – 27H (P) : Continuity should exist.

OK or NG

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



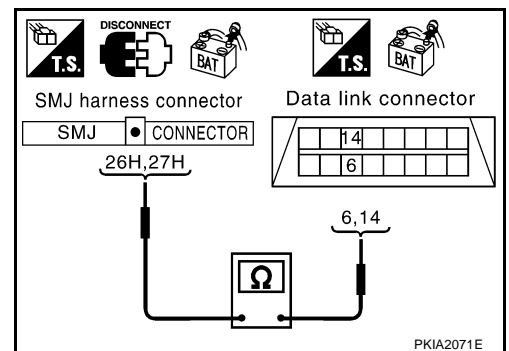
3. CHECK HARNESS FOR OPEN CIRCUIT

Check continuity between harness connector M72 terminals 26H (L), 27H (P) and data link connector M8 terminals 6 (L), 14 (P).

26H (L) – 6 (L) : Continuity should exist.
27H (P) – 14 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-14, "Work Flow"](#).
- NG >> Repair harness.



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Circuit Check Between Data Link Connector and Unified Meter and A/C Amp.

AKS00A8U

1. CHECK HARNESS FOR OPEN CIRCUIT

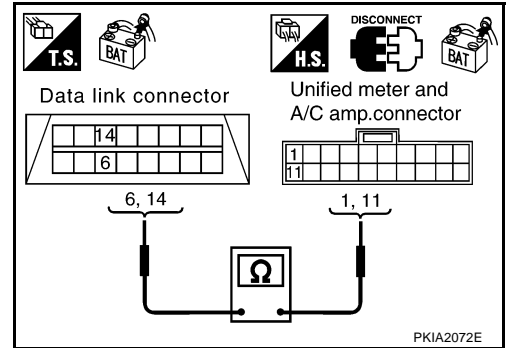
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector and unified meter and A/C amp. connector.
4. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and unified meter and A/C amp. harness connector M48 terminals 1 (L), 11 (P).

6 (L) – 1 (L) : Continuity should exist.

14 (P) – 11 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-14, "Work Flow"](#) .
- NG >> Repair harness.



Circuit Check Between Unified Meter and A/C Amp. and BCM

AKS00A8V

1. CHECK HARNESS FOR OPEN CIRCUIT

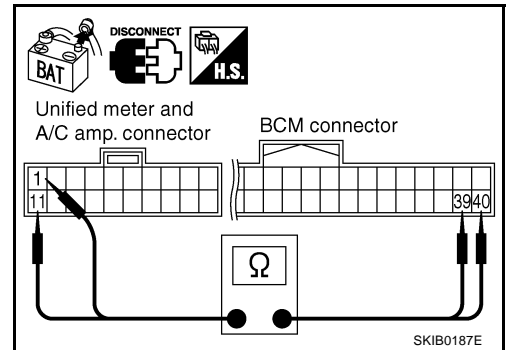
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following connectors.
 - ECM connector
 - Unified meter and A/C amp. connector
 - BCM connector
4. Check continuity between unified meter and A/C amp. harness connector M48 terminals 1 (L), 11 (P) and BCM harness connector M90 terminals 39 (L), 40 (P).

1 (L) – 39 (L) : Continuity should exist.

11 (P) – 40 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-14, "Work Flow"](#) .
- NG >> Repair harness.



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

AKS00A8W

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 (connector side and harness side).
 - Harness connector M15
 - Harness connector E108

OK or NG

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

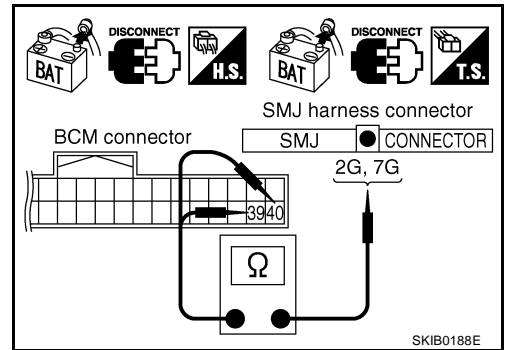
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector and harness connector M15.
2. Check continuity between BCM harness connector M90 terminals 39 (L), 40 (P) and harness connector M15 terminals 2G (L), 7G (P).

39 (L) – 2G (L) : Continuity should exist.
40 (P) – 7G (P) : Continuity should exist.

OK or NG

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



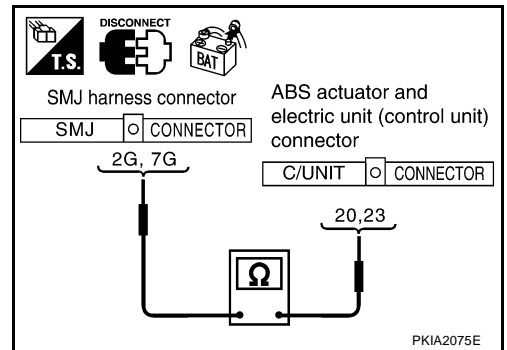
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L), 23 (P).

2G (L) – 20 (L) : Continuity should exist.
7G (P) – 23 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-14, "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 damage, bend and loose connection (control module side and harness side).

OK or NG

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

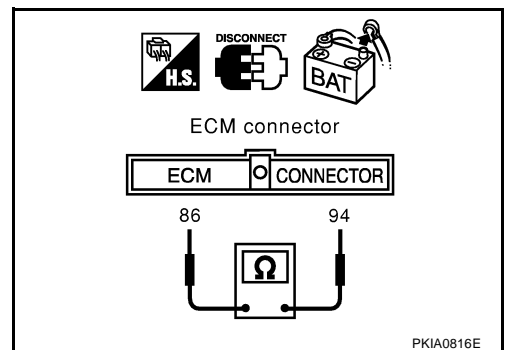
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132Ω

OK or NG

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



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.

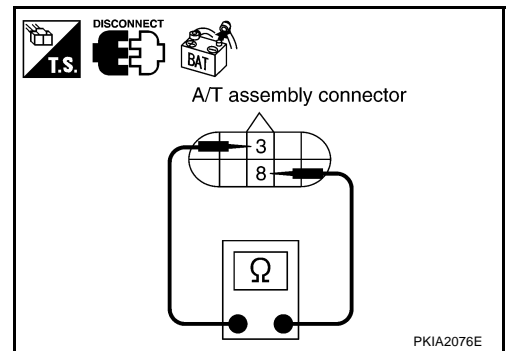
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect A/T assembly connector.
2. Check resistance between A/T assembly harness connector F6 terminals 3 (L) and 8 (P).

3 (L) – 8 (P) : Approx. 54 – 66Ω

OK or NG

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



AKS00A8Z

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.

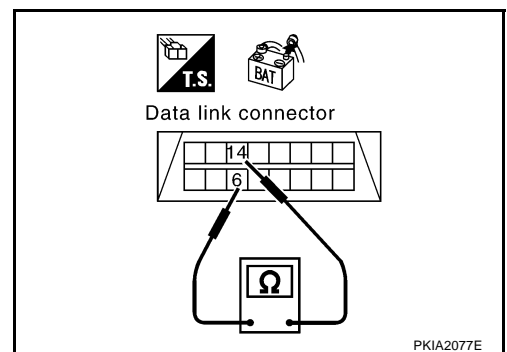
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Diagnose again. Refer to [LAN-14, "Work Flow"](#) .
 NG >> Repair harness between data link connector and unified meter and A/C amp.



Unified Meter and A/C Amp. Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

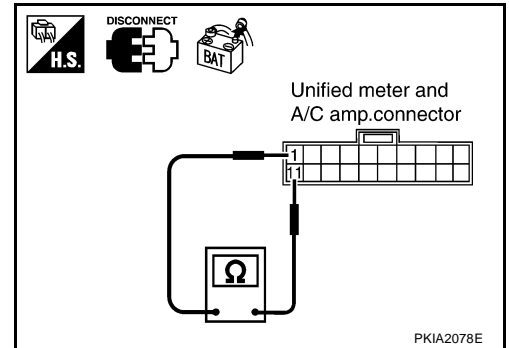
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace unified meter and A/C amp.
 NG >> Repair harness between unified meter and A/C amp. and BCM.



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.

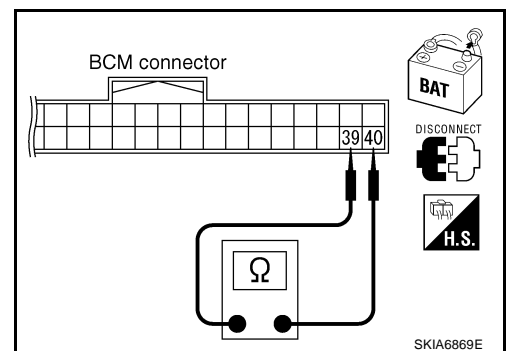
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM.
 NG >> Repair harness between BCM and harness connector M15.



ABS Actuator and Electric Unit (Control Unit) Circuit Check

AKS00A92

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.

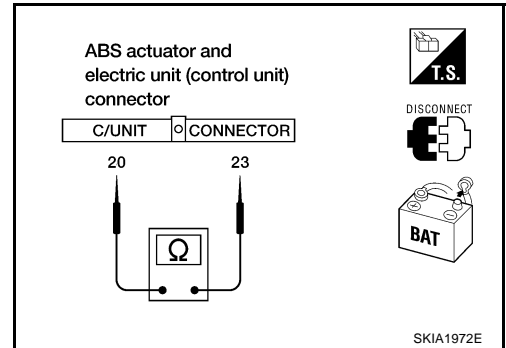
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L) and 23 (P).

20 (L) – 23 (P) : 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.



AKS00A93

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.

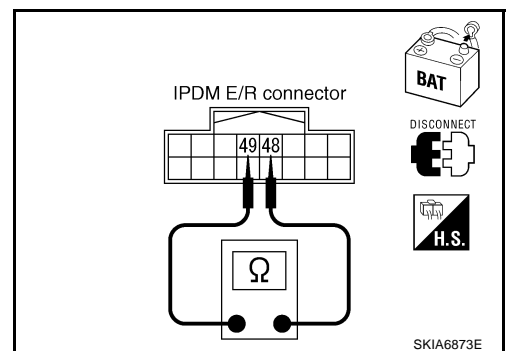
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) – 49 (P) : 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

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, meter side, control unit side and harness side).
 - ECM
 - A/T assembly
 - Unified meter and A/C amp.
 - 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.

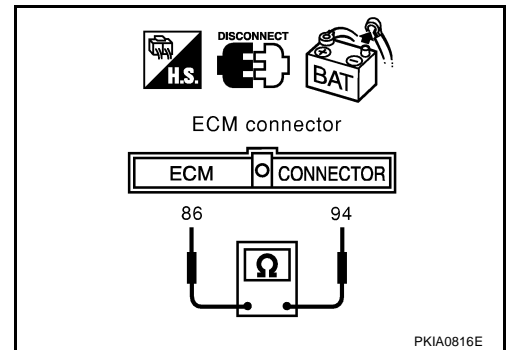
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - ECM connector
 - A/T assembly connector
 - Harness connector F102
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : 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 A/T assembly
 - Harness between ECM and harness connector F102



3. CHECK HARNESS FOR SHORT CIRCUIT

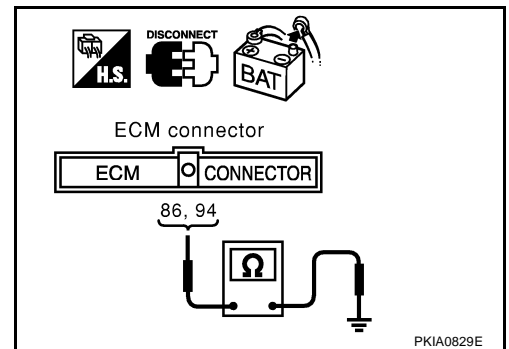
Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – ground : Continuity should not exist.

86 (P) – 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 A/T assembly
 - Harness between ECM and harness connector F102



4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Unified meter and A/C amp. connector
 - BCM connector
 - Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

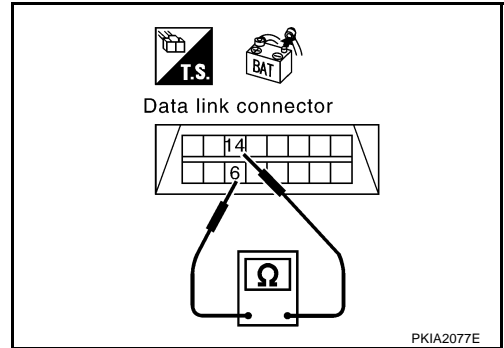
6 (L) – 14 (P) : Continuity should not exist.

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 M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15



5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

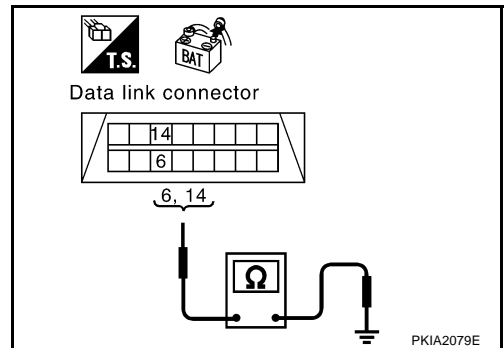
14 (P) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15



6. CHECK HARNESS FOR SHORT CIRCUIT

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

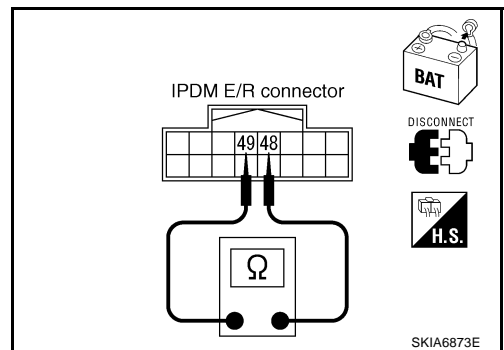
48 (L) – 49 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108



7. CHECK HARNESS FOR SHORT CIRCUIT

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

48 (L) – ground : Continuity should not exist.

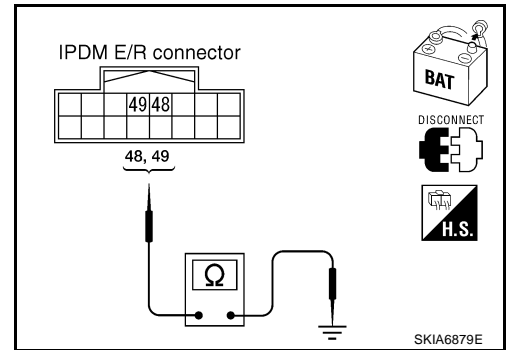
49 (P) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-37, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to [LAN-14, "Work Flow"](#).

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

IPDM E/R Ignition Relay Circuit Check

AKS00A95

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

- IPDM E/R power supply circuit. Refer to [PG-28, "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""](#).

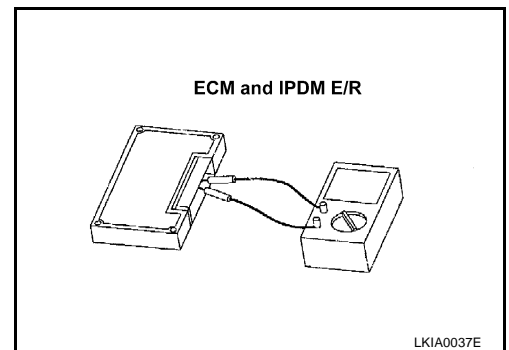
Component Inspection

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

AKS00A96

- 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 | |



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CAN SYSTEM (TYPE 2)

PFP:23710

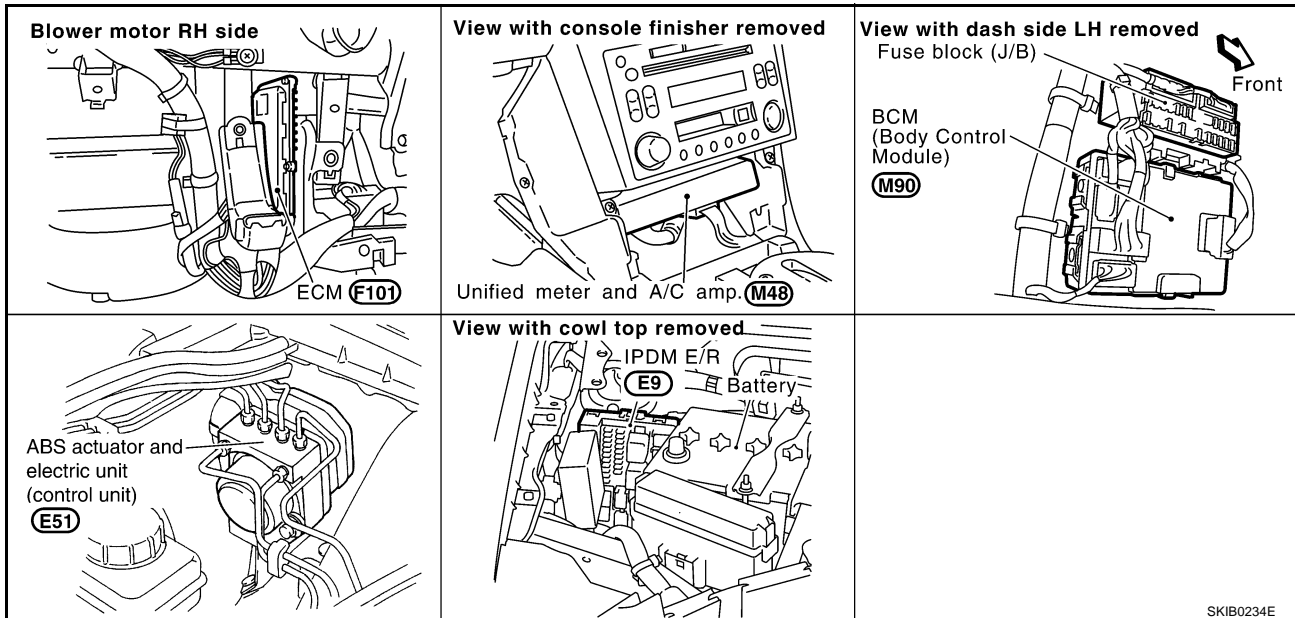
System Description

AKS00A97

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

AKS00A98



CAN SYSTEM (TYPE 2)

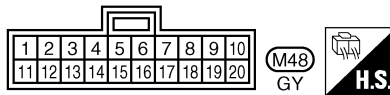
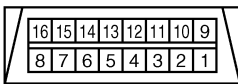
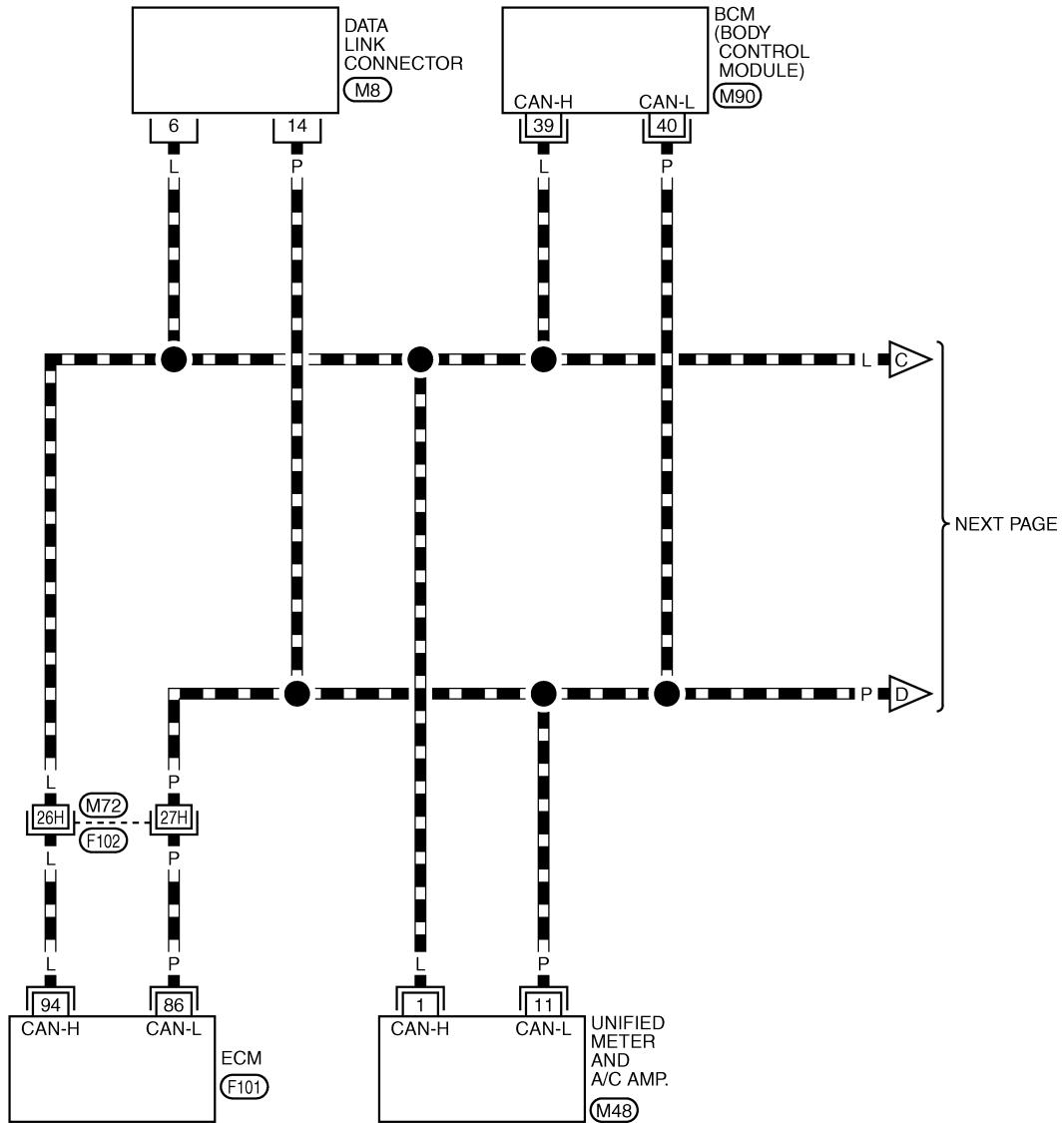
[CAN]

AKS00A99

Wiring Diagram — CAN —

LAN-CAN-03

▬ : DATA LINE



REFER TO THE FOLLOWING.

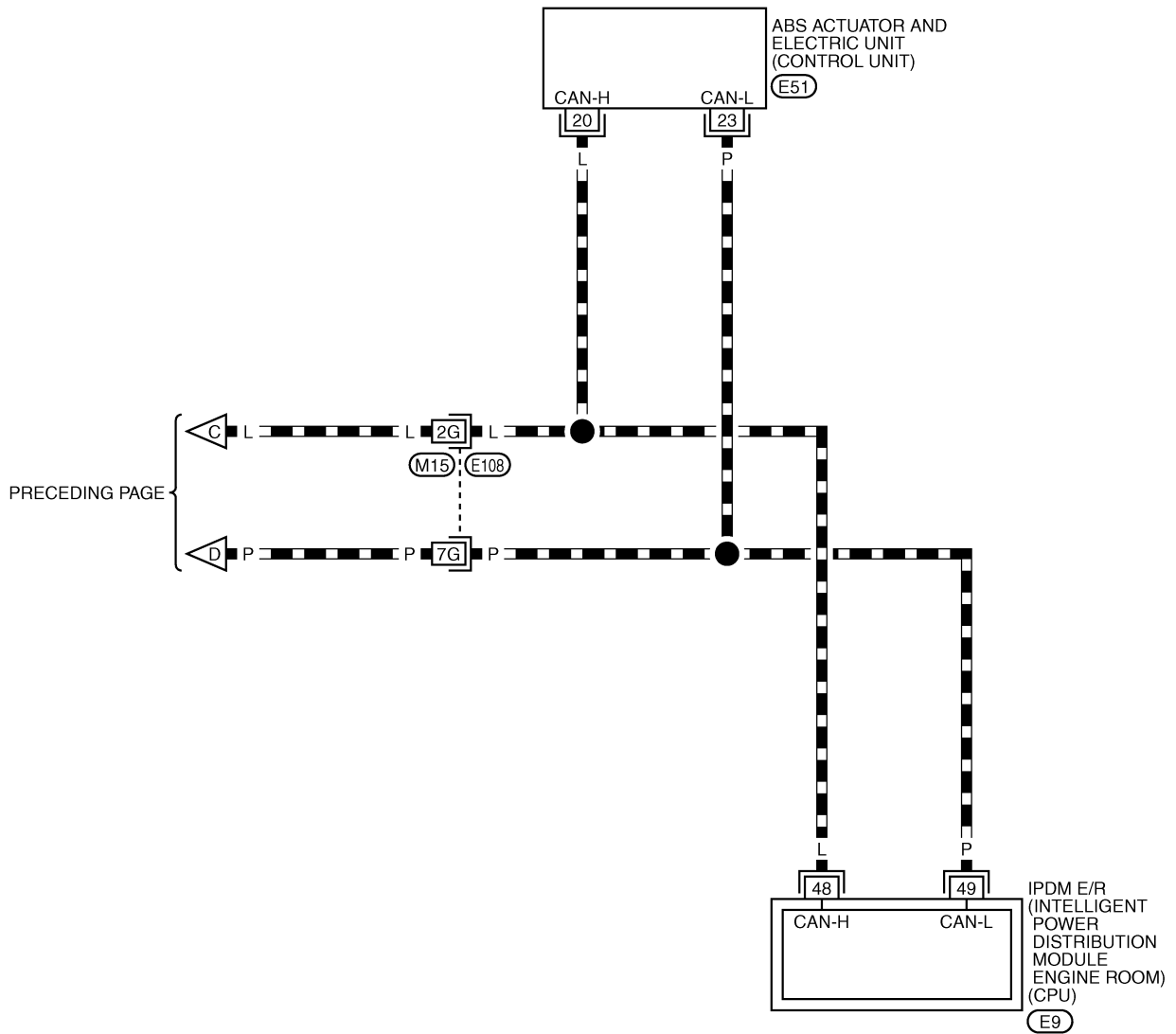
(F102) -SUPER MULTIPLE JUNCTION (SMJ)

(M90), (F101) -ELECTRICAL UNITS

TKWT1862E

LAN-CAN-04

▬ : DATA LINE



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

E9
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REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

E51 -ELECTRICAL UNITS

TKWT1555E

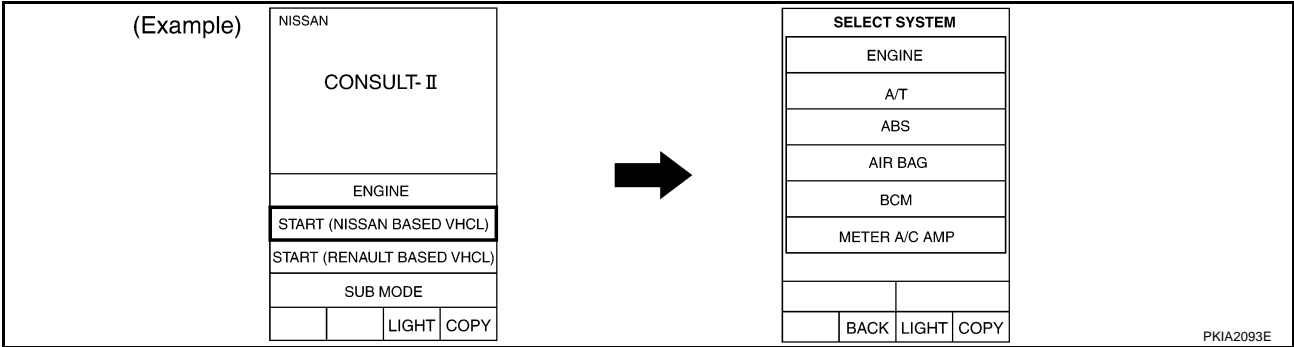
CAN SYSTEM (TYPE 2)

[CAN]

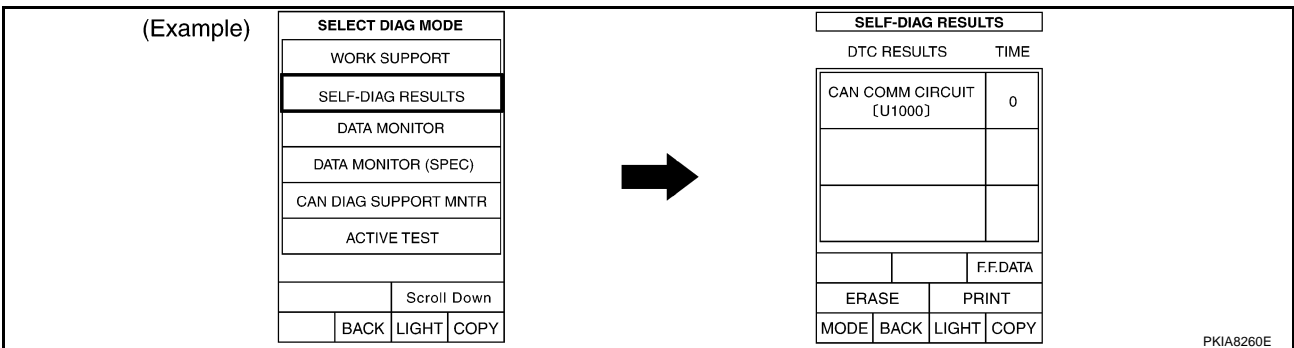
AKS00A9A

Work Flow

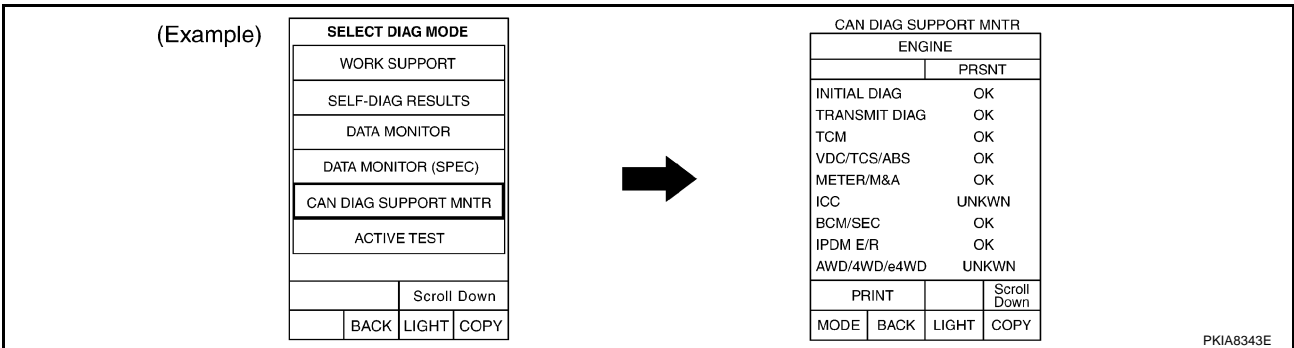
- When there are no indications of "METER A/C AMP", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



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



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-42, "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-42, "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-44, "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 | METER/M&A | BCM/SEC | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | UNKWN | UNKWN |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | UNKWN |
| ABS | — | NG | UNKWN | UNKWN | — | — | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | UNKWN | — | — |

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 2)

[CAN]

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Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
METER A/C AMP
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

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ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
ENGINE
CAN DIAG SUPPORT
MNTR

Attach copy of
METER A/C AMP
CAN DIAG SUPPORT
MNTR

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ABS
CAN DIAG SUPPORT
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IPDM E/R
CAN DIAG SUPPORT
MNTR

PKIA8215E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

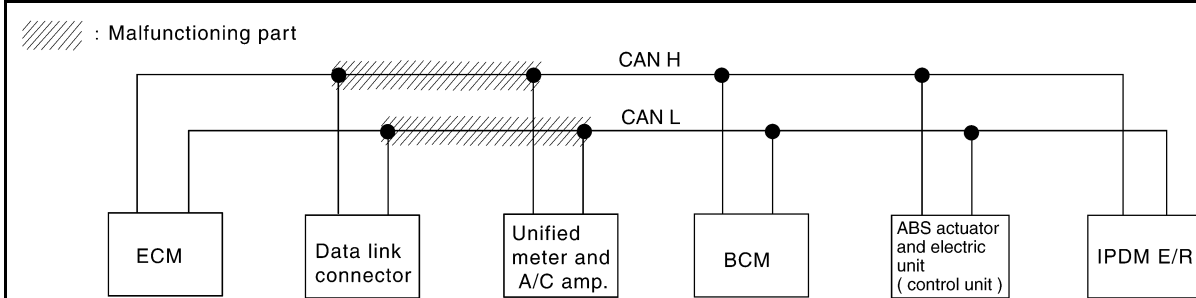
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between data link connector and unified meter and A/C amp. Refer to [LAN-54, "Circuit Check Between Data Link Connector and Unified Meter and A/C Amp."](#) .

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

PKIA8216E



PKIA2018E

CAN SYSTEM (TYPE 2)

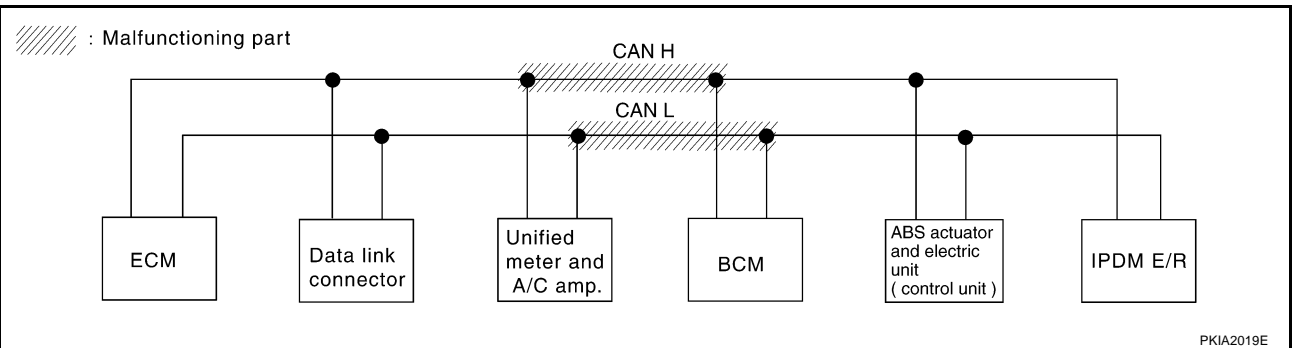
[CAN]

Case 2

Check harness between unified meter and A/C amp. and BCM. Refer to [LAN-54, "Circuit Check Between Unified Meter and A/C Amp. and BCM"](#) .

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

PKIA8217E



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CAN SYSTEM (TYPE 2)

[CAN]

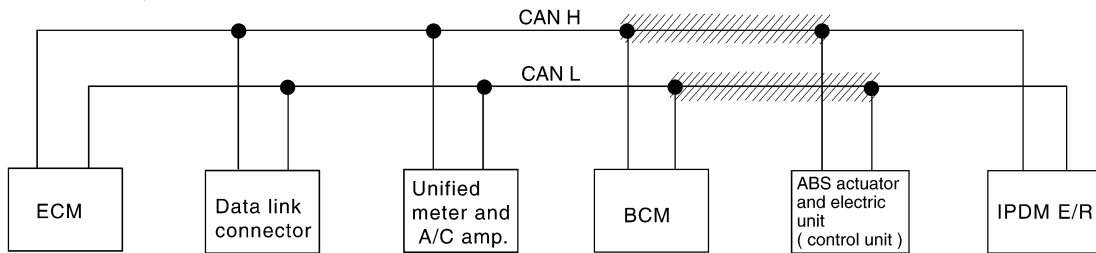
Case 3

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-54, "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#) .

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

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//// : Malfunctioning part



PKIA2020E

CAN SYSTEM (TYPE 2)

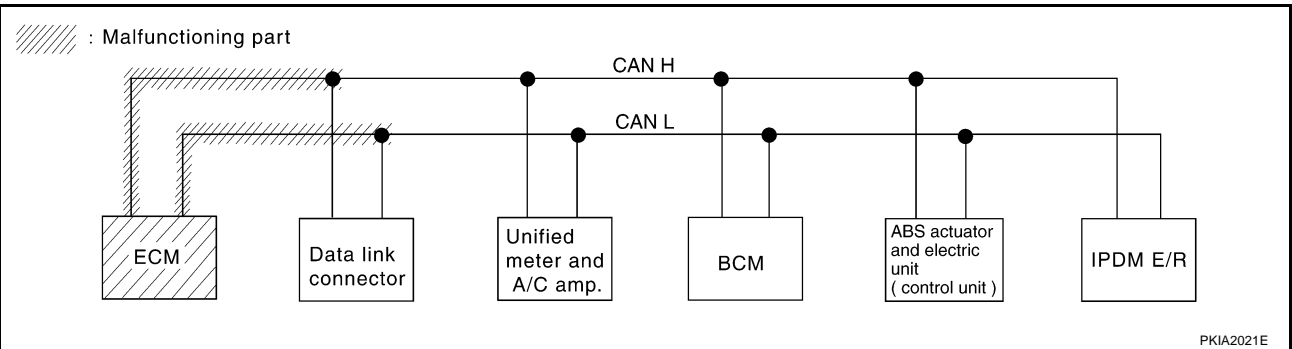
[CAN]

Case 4

Check ECM circuit. Refer to [LAN-55. "ECM Circuit Check"](#) .

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

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CAN SYSTEM (TYPE 2)

[CAN]

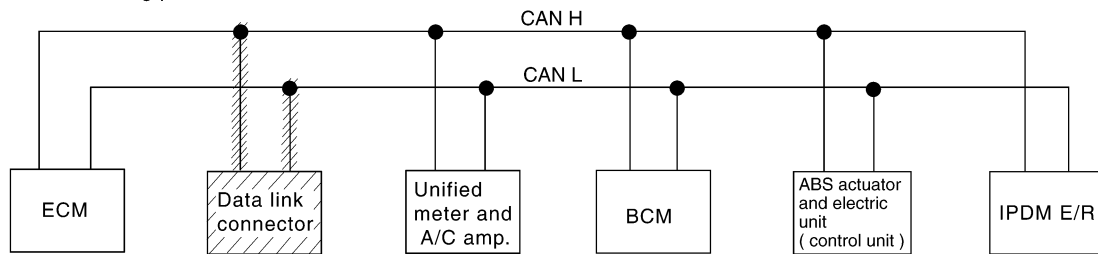
Case 5

Check data link connector circuit. Refer to [LAN-56, "Data Link Connector Circuit Check"](#) .

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

PKIA8220E

//// : Malfunctioning part



PKIA2022E

CAN SYSTEM (TYPE 2)

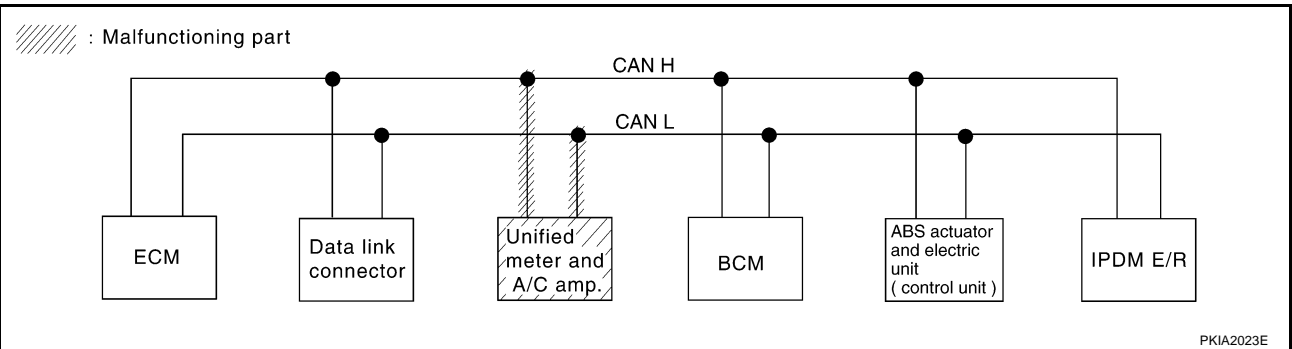
[CAN]

Case 6

Check unified meter and A/C amp. circuit. Refer to [LAN-56, "Unified Meter and A/C Amp. Circuit Check"](#) .

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

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CAN SYSTEM (TYPE 2)

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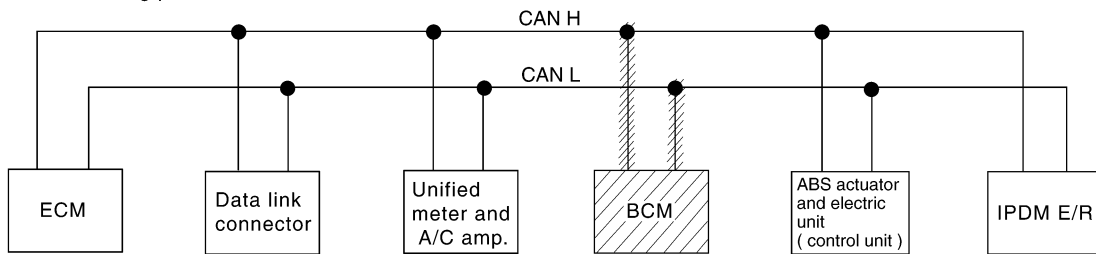
Case 7

Check BCM circuit. Refer to [LAN-57, "BCM Circuit Check"](#) .

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

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//// : Malfunctioning part



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CAN SYSTEM (TYPE 2)

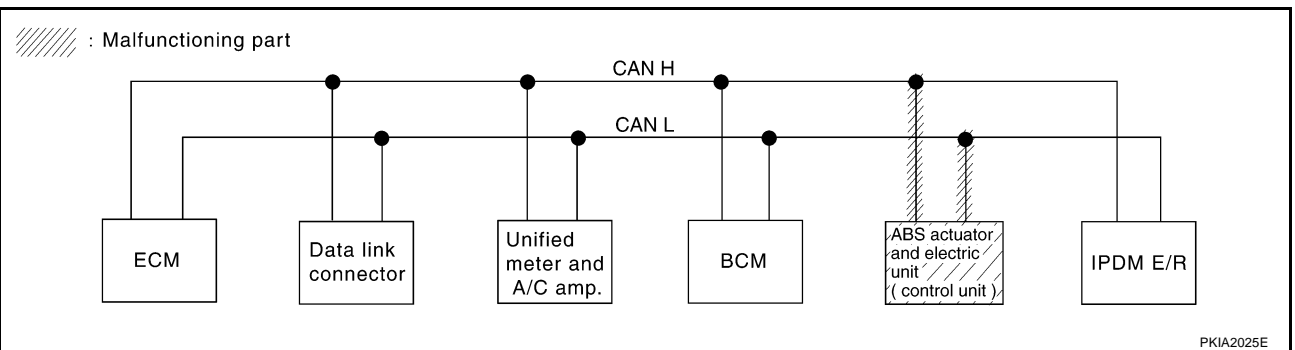
[CAN]

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-57, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

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

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CAN SYSTEM (TYPE 2)

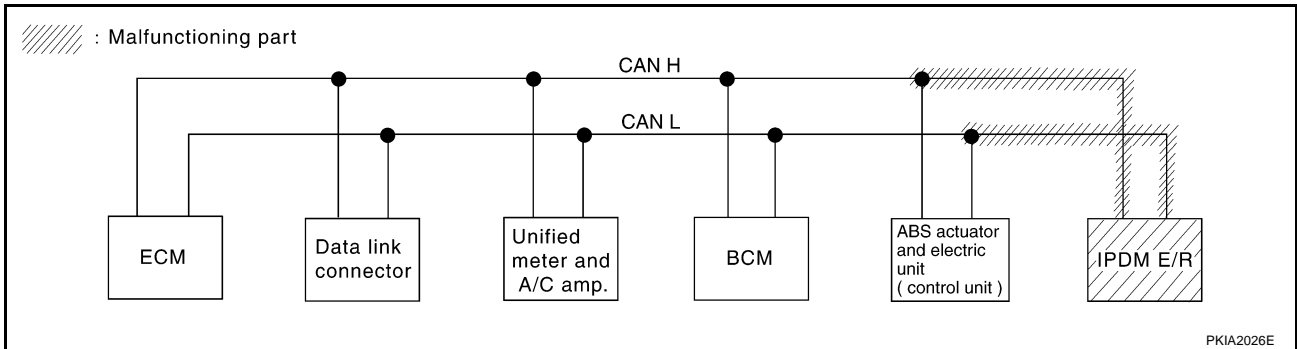
[CAN]

Case 9

Check IPDM E/R circuit. Refer to [LAN-58, "IPDM E/R Circuit Check"](#) .

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

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Case 10

Check CAN communication circuit. Refer to [LAN-59, "CAN Communication Circuit Check"](#) .

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

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CAN SYSTEM (TYPE 2)

[CAN]

Case 11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-61, "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 | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | UNKWN ✓ | UNKWN |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN ✓ | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | UNKWN |
| ABS | — | NG | UNKWN | UNKWN | — | — | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | UNKWN | — | — |

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Case 12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-61, "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 | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | UNKWN | UNKWN |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | UNKWN |
| ABS | — | NG | UNKWN | UNKWN ✓ | — | — | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | UNKWN | — | — |

PKIA8227E

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Circuit Check Between Data Link Connector and Unified Meter and A/C Amp.

AKS00A9B

1. CHECK HARNESS FOR OPEN CIRCUIT

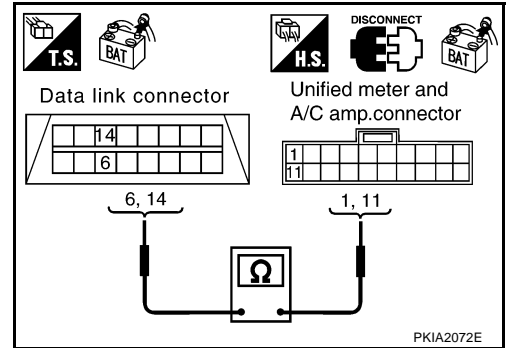
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector and unified meter and A/C amp. connector.
4. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and unified meter and A/C amp. harness connector M48 terminals 1 (L), 11 (P).

6 (L) – 1 (L) : Continuity should exist.

14 (P) – 11 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-41, "Work Flow"](#) .
- NG >> Repair harness.



Circuit Check Between Unified Meter and A/C Amp. and BCM

AKS00A9C

1. CHECK HARNESS FOR OPEN CIRCUIT

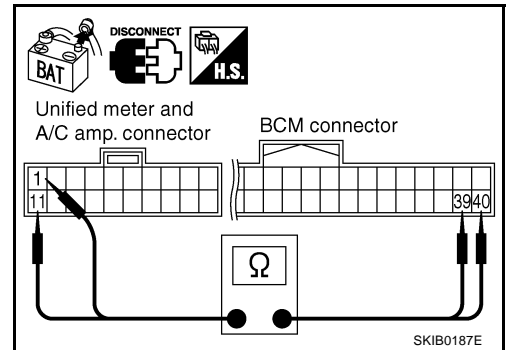
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following connectors.
 - ECM connector
 - Unified meter and A/C amp. connector
 - BCM connector
4. Check continuity between unified meter and A/C amp. harness connector M48 terminals 1 (L), 11 (P) and BCM harness connector M90 terminals 39 (L), 40 (P).

1 (L) – 39 (L) : Continuity should exist.

11 (P) – 40 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-41, "Work Flow"](#) .
- NG >> Repair harness.



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

AKS00A9D

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 (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

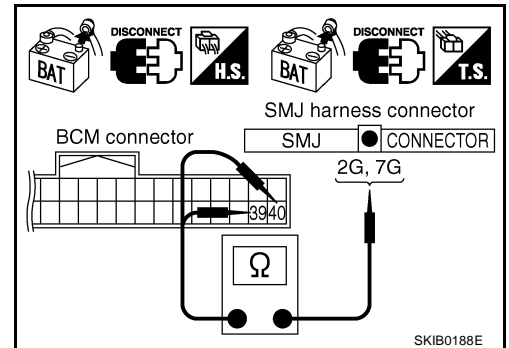
1. Disconnect BCM connector and harness connector M15.
2. Check continuity between BCM harness connector M90 terminals 39 (L), 40 (P) and harness connector M15 terminals 2G (L), 7G (P).

39 (L) – 2G (L) : Continuity should exist.

40 (P) – 7G (P) : Continuity should exist.

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

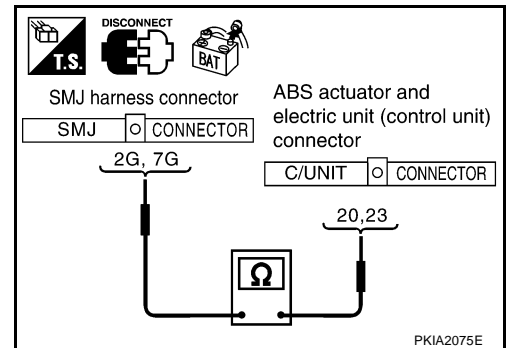
1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L), 23 (P).

2G (L) – 20 (L) : Continuity should exist.

7G (P) – 23 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-41, "Work Flow"](#) .
 NG >> Repair harness.



ECM Circuit Check

1. CHECK CONNECTOR

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

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2. CHECK HARNESS FOR OPEN CIRCUIT

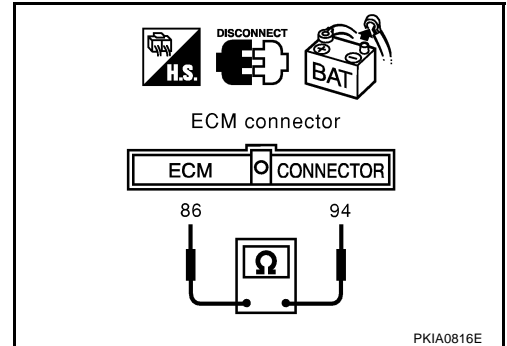
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P)

: Approx. 108 – 132Ω

OK or NG

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



Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

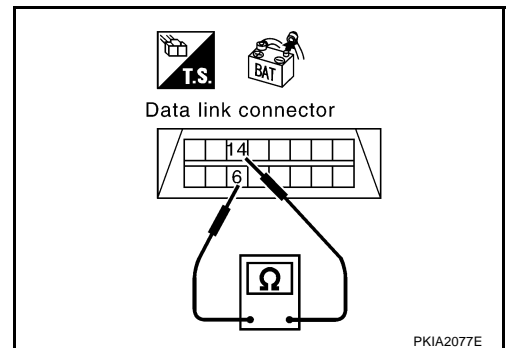
Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

6 (L) – 14 (P)

: Approx. 54 – 66Ω

OK or NG

- OK >> Diagnose again. Refer to [LAN-41, "Work Flow"](#) .
 NG >> Repair harness between data link connector and unified meter and A/C amp.



Unified Meter and A/C Amp. Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

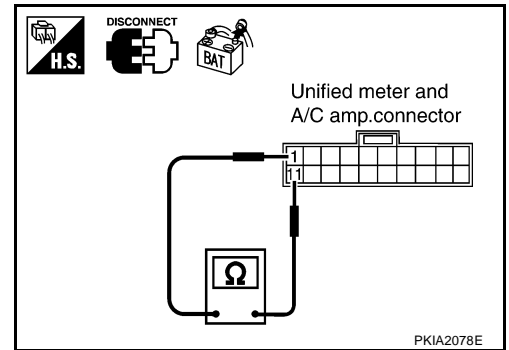
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace unified meter and A/C amp.
 NG >> Repair harness between unified meter and A/C amp. and BCM.



AKS00A9H

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.

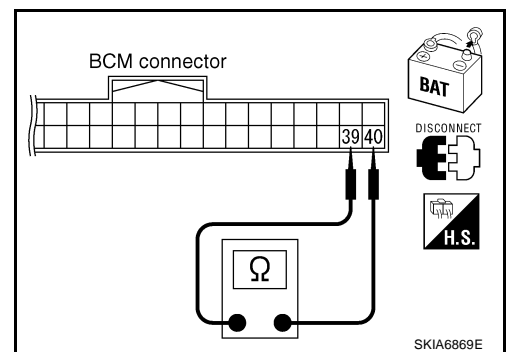
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM.
 NG >> Repair harness between BCM and harness connector M15.



AKS00A9I

ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

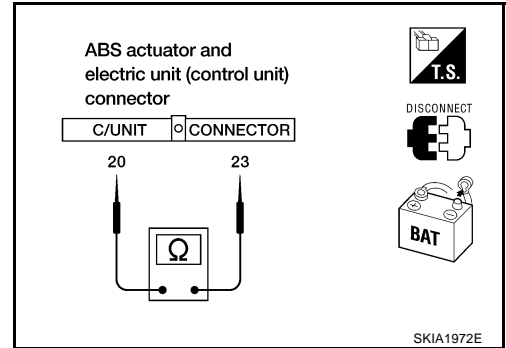
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L) and 23 (P).

20 (L) – 23 (P) : 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.



AKS00A9J

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.

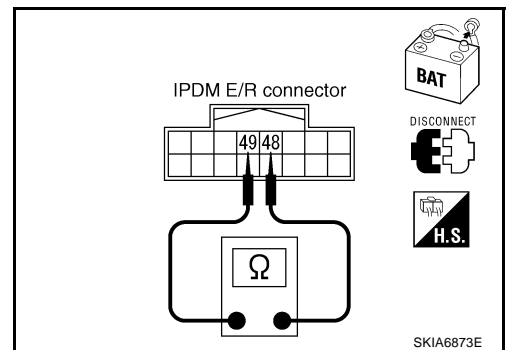
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) – 49 (P) : 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

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, meter side, control unit side and harness side).
 - ECM
 - Unified meter and A/C amp.
 - 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.

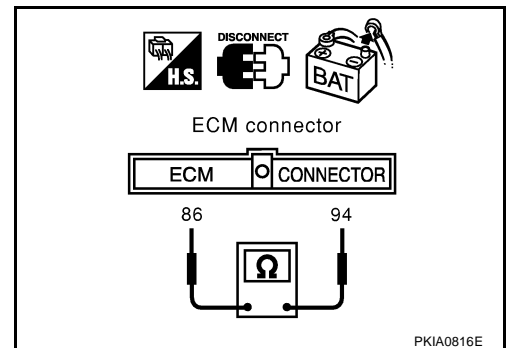
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F102.
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : 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

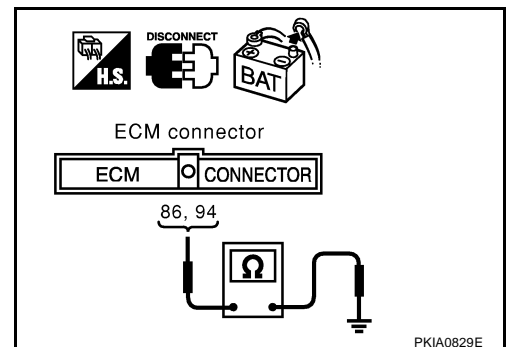
Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – ground : Continuity should not exist.

86 (P) – ground : Continuity should not exist.

OK or NG

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



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4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Unified meter and A/C amp. connector
 - BCM connector
 - Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

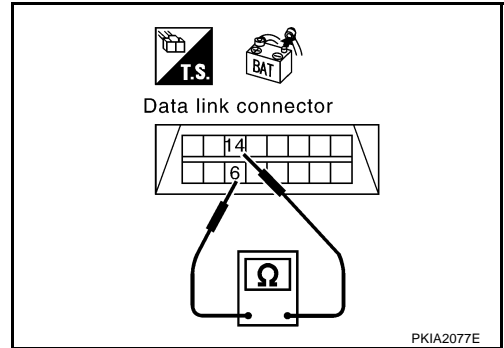
6 (L) – 14 (P) : Continuity should not exist.

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 M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15



5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

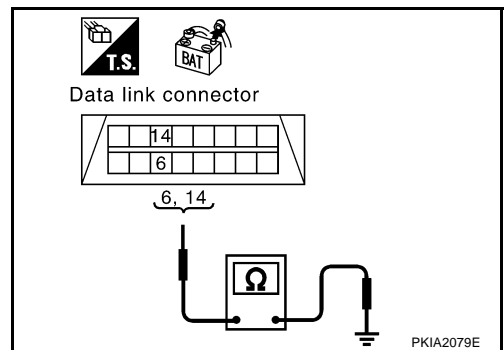
14 (P) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15



6. CHECK HARNESS FOR SHORT CIRCUIT

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

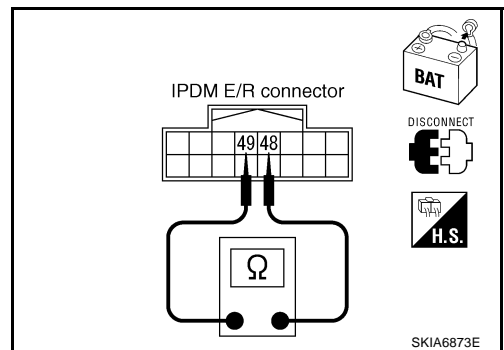
48 (L) – 49 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108



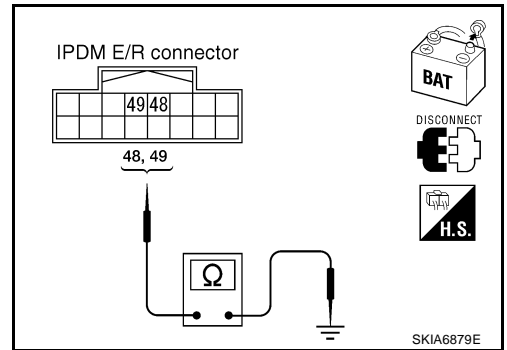
7. CHECK HARNESS FOR SHORT CIRCUIT

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

- 48 (L) – ground : Continuity should not exist.**
- 49 (P) – 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 IPDM E/R and ABS actuator and electric unit (control unit)
 - Harness between IPDM E/R and harness connector E108



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-61, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-41, "Work Flow"](#).
- NG >> Replace ECM and/or IPDM E/R.

IPDM E/R Ignition Relay Circuit Check

AKS00A9L

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

- IPDM E/R power supply circuit. Refer to [PG-28, "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""](#).

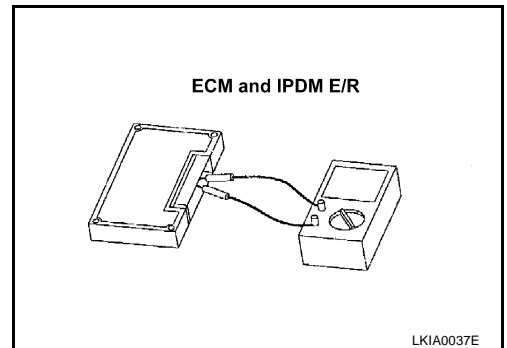
Component Inspection

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

AKS00A9M

- 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 | |



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LAN

CAN SYSTEM (TYPE 3)

PFP:23710

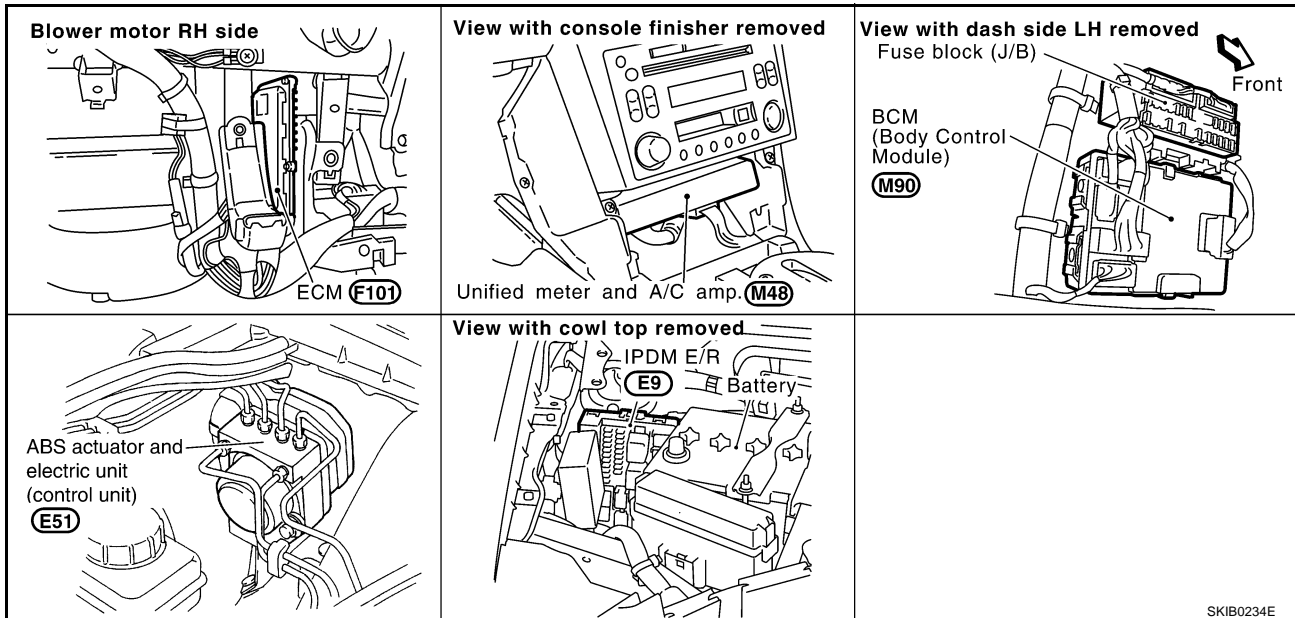
System Description

AKS009DC

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

AKS009DD



CAN SYSTEM (TYPE 3)

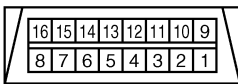
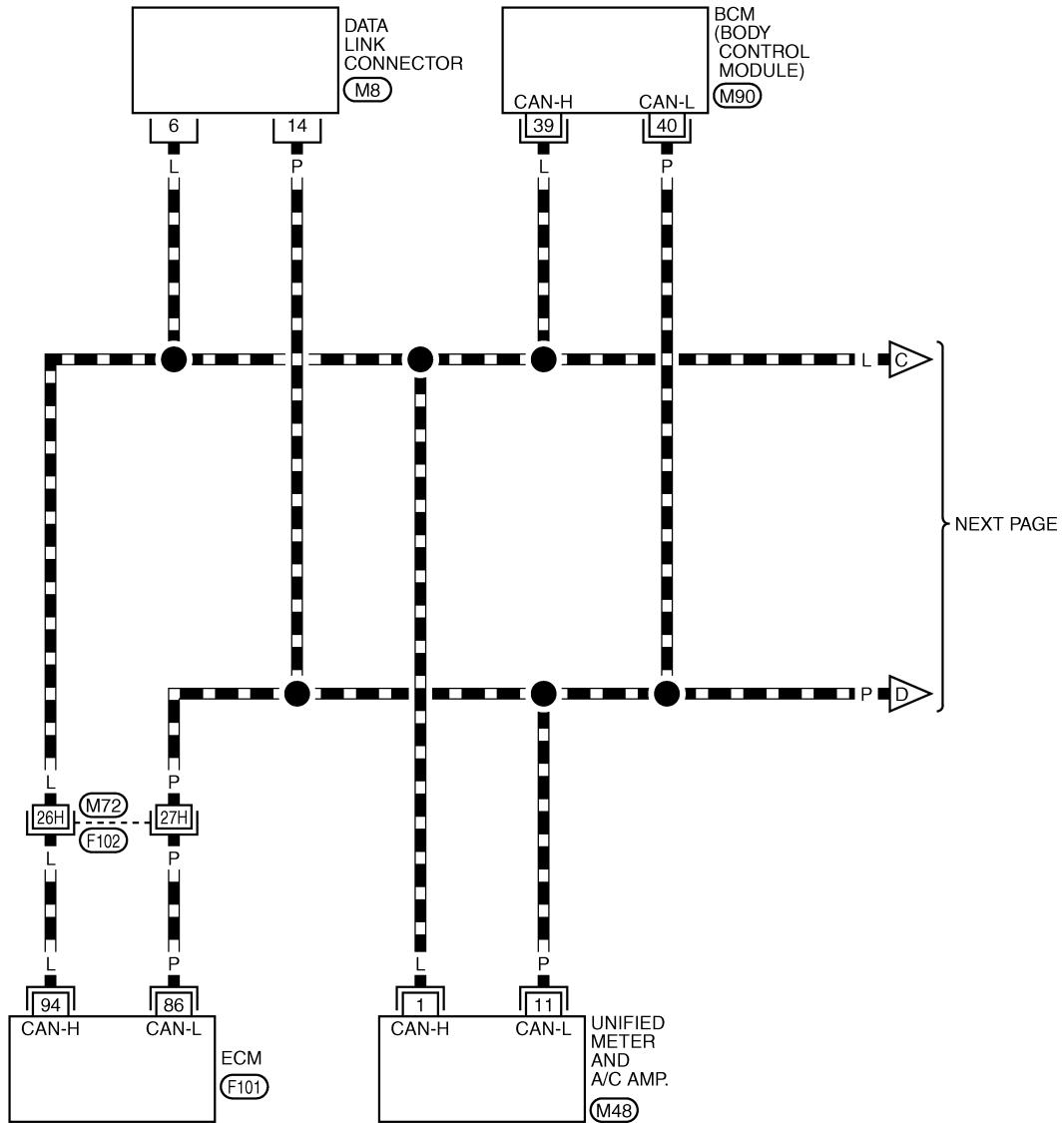
[CAN]

AKS009DE

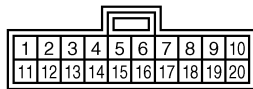
Wiring Diagram — CAN —

LAN-CAN-03

DATA LINE



M8
W



M48
GY



REFER TO THE FOLLOWING.

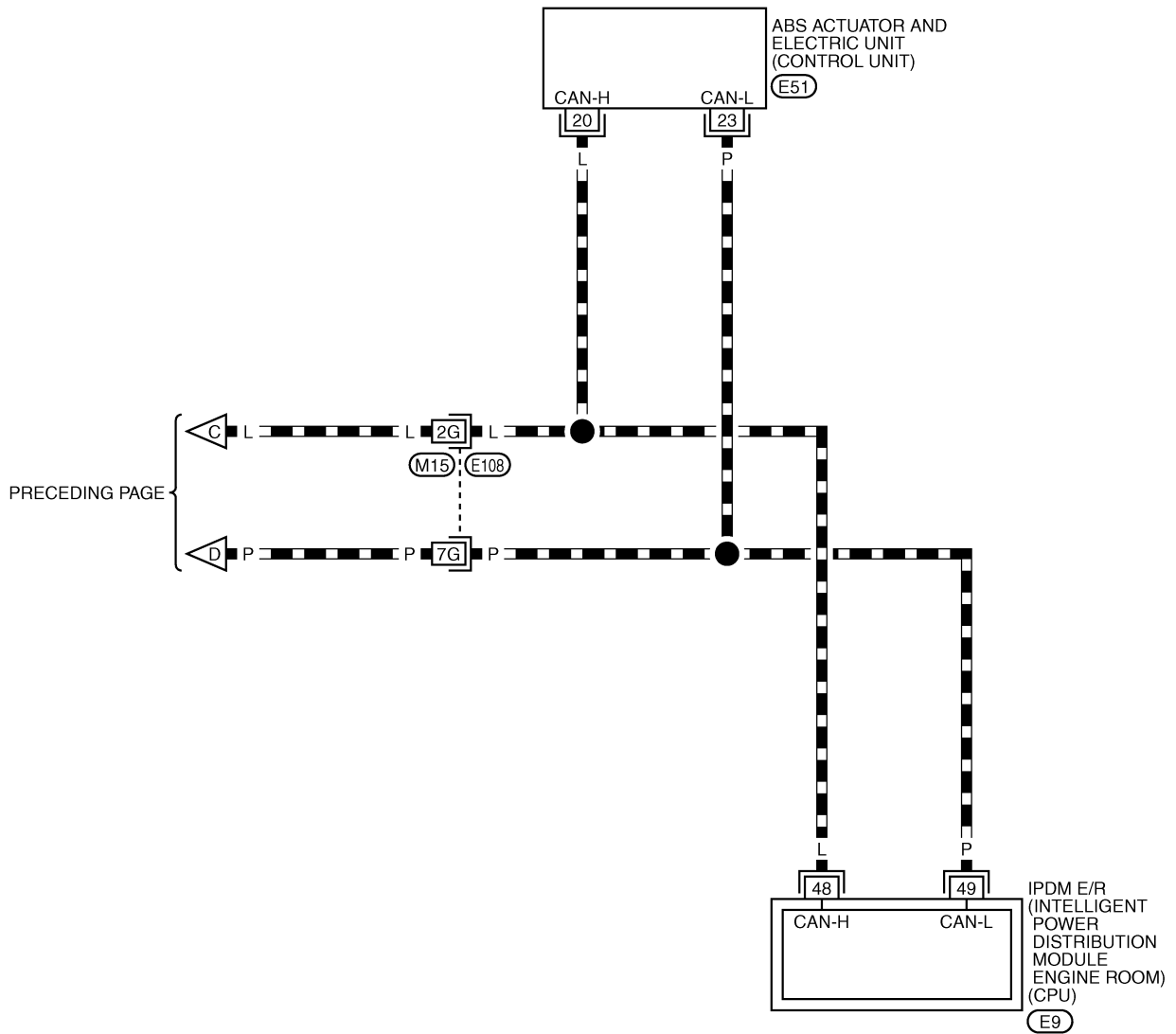
(F102) -SUPER MULTIPLE JUNCTION (SMJ)

(M90), (F101) -ELECTRICAL UNITS

TKWT1862E

LAN-CAN-04

▬ : 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)

(E51) -ELECTRICAL UNITS

TKWT1555E

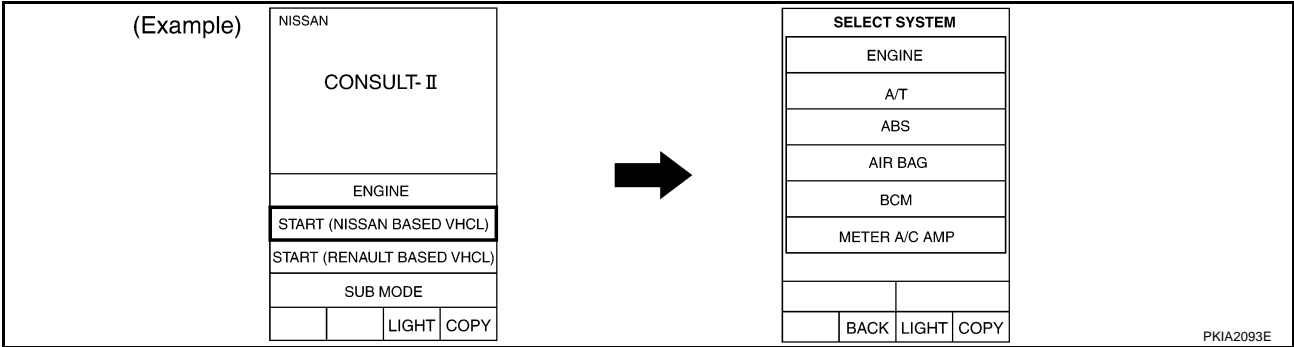
CAN SYSTEM (TYPE 3)

[CAN]

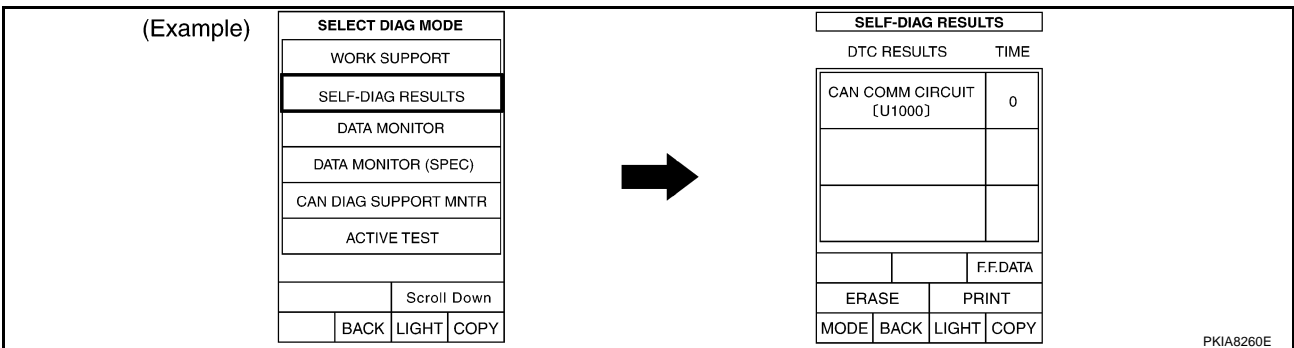
AKS00A9N

Work Flow

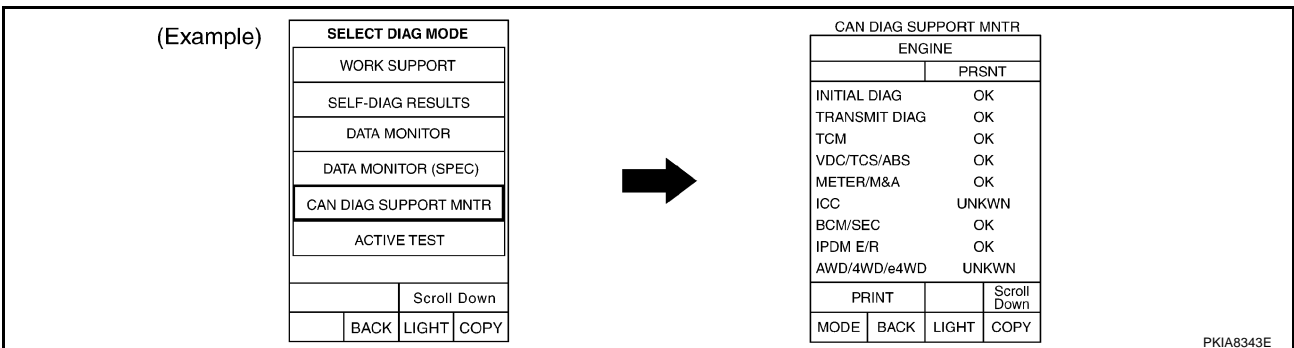
- When there are no indications of "METER A/C AMP", "BCM" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



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



- Attach the printed sheet of "SELECT SYSTEM", "SELF-DIAG RESULTS" and "CAN DIAG SUPPORT MNTR" onto the check sheet. Refer to [LAN-66, "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-66, "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-68, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (TYPE 3)

[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 | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | — | UNKWN |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | UNKWN |
| ABS | — | NG | UNKWN | UNKWN | — | — | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | UNKWN | — | — |

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 3)

[CAN]

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Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
METER A/C AMP
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

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ENGINE
CAN DIAG SUPPORT
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ABS
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IPDM E/R
CAN DIAG SUPPORT
MNTR

PKIA8229E

CHECK SHEET RESULTS (EXAMPLE)

NOTE:

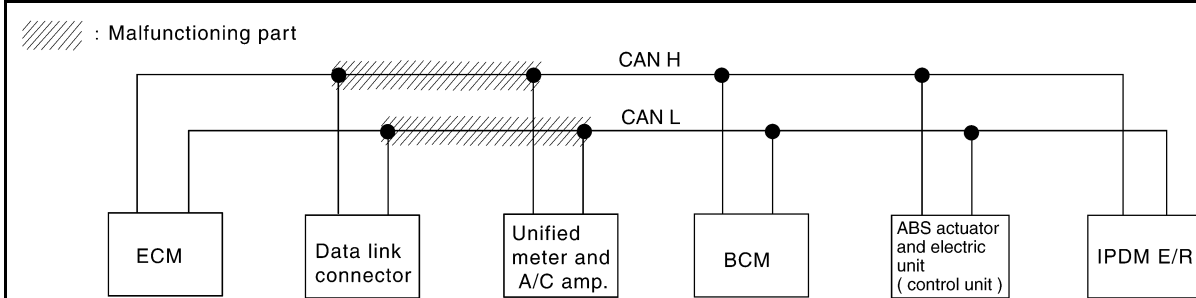
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between data link connector and unified meter and A/C amp. Refer to [LAN-78, "Circuit Check Between Data Link Connector and Unified Meter and A/C Amp."](#) .

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

PKIA8230E



PKIA2018E

CAN SYSTEM (TYPE 3)

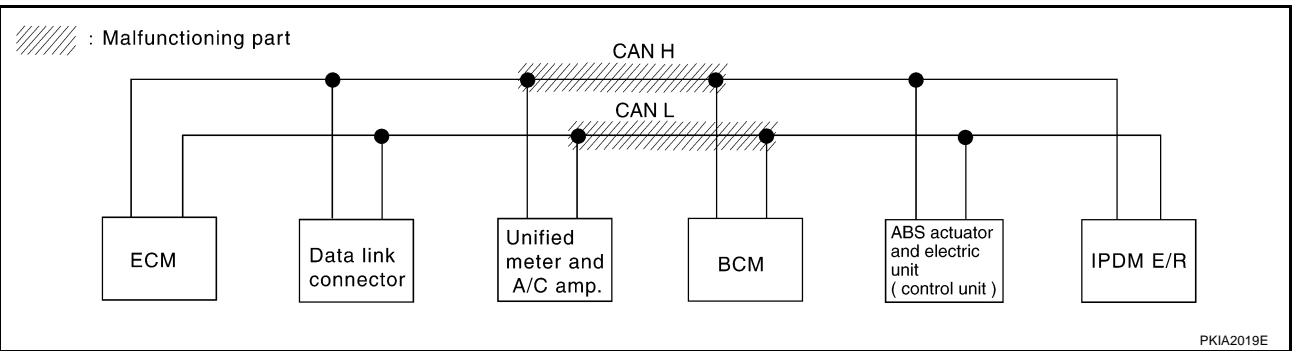
[CAN]

Case 2

Check harness between unified meter and A/C amp. and BCM. Refer to [LAN-78, "Circuit Check Between Unified Meter and A/C Amp. and BCM"](#) .

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

PKIA8231E



LAN

CAN SYSTEM (TYPE 3)

[CAN]

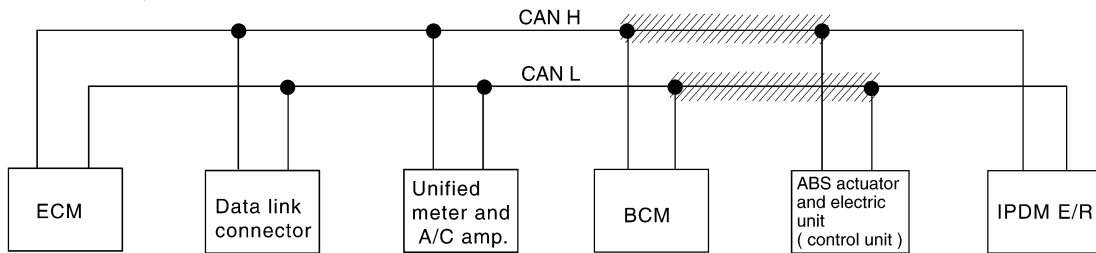
Case 3

Check harness between BCM and ABS actuator and electric unit (control unit). Refer to [LAN-78. "Circuit Check Between BCM and ABS Actuator and Electric Unit \(Control Unit\)"](#) .

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

PKIA8232E

//// : Malfunctioning part



PKIA2020E

CAN SYSTEM (TYPE 3)

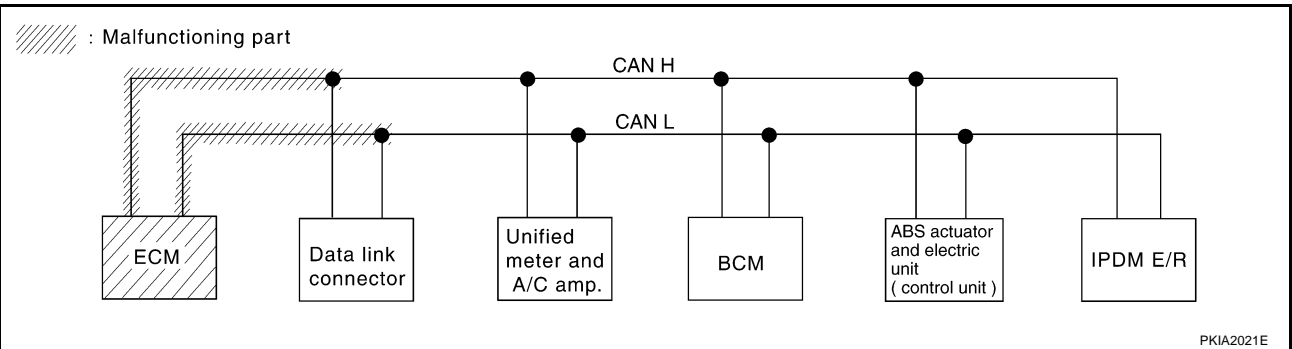
[CAN]

Case 4

Check ECM circuit. Refer to [LAN-79, "ECM Circuit Check"](#) .

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

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CAN SYSTEM (TYPE 3)

[CAN]

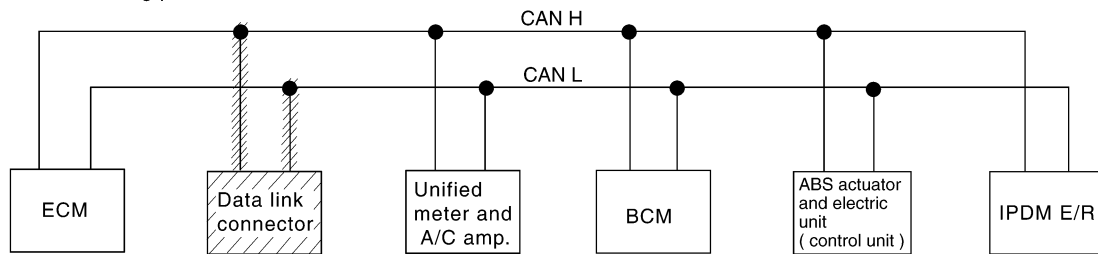
Case 5

Check data link connector circuit. Refer to [LAN-80, "Data Link Connector Circuit Check"](#) .

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

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//// : Malfunctioning part



PKIA2022E

CAN SYSTEM (TYPE 3)

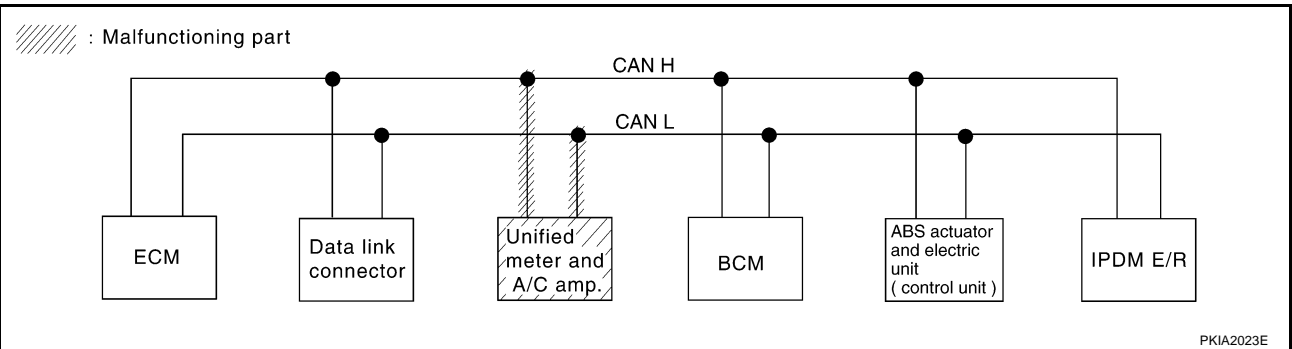
[CAN]

Case 6

Check unified meter and A/C amp. circuit. Refer to [LAN-80, "Unified Meter and A/C Amp. Circuit Check"](#) .

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

PKIA8235E



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CAN SYSTEM (TYPE 3)

[CAN]

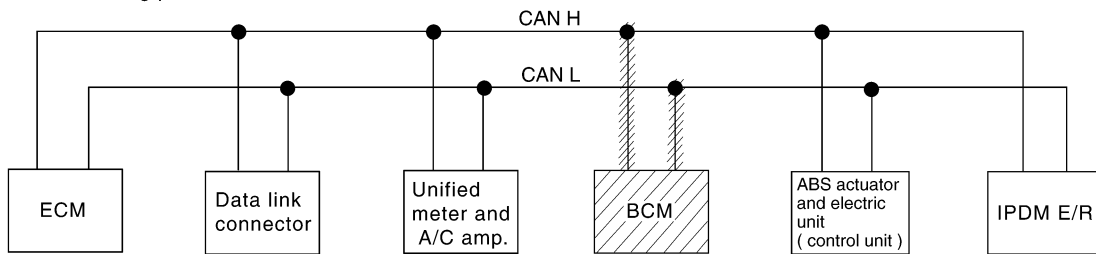
Case 7

Check BCM circuit. Refer to [LAN-81, "BCM Circuit Check"](#) .

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

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//// : Malfunctioning part



PKIA2024E

CAN SYSTEM (TYPE 3)

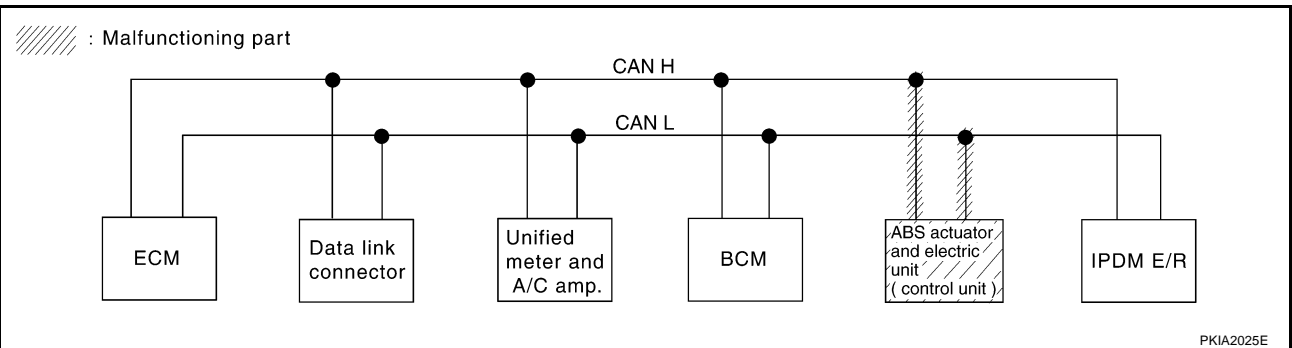
[CAN]

Case 8

Check ABS actuator and electric unit (control unit) circuit. Refer to [LAN-81, "ABS Actuator and Electric Unit \(Control Unit\) Circuit Check"](#) .

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

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PKIA2025E

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CAN SYSTEM (TYPE 3)

[CAN]

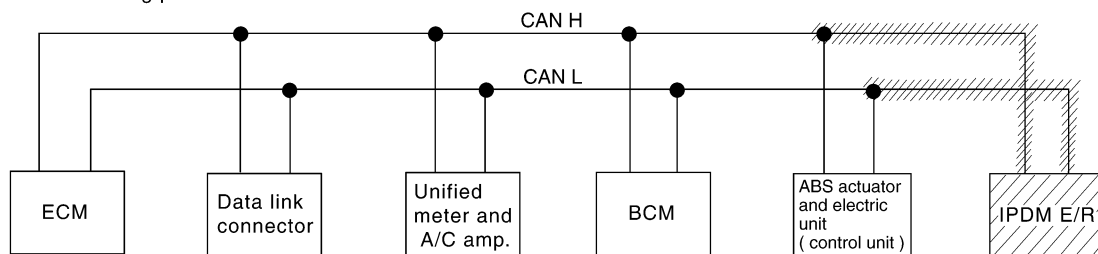
Case 9

Check IPDM E/R circuit. Refer to [LAN-82, "IPDM E/R Circuit Check"](#) .

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

PKIA8238E

/// : Malfunctioning part



PKIA2026E

Case 10

Check CAN communication circuit. Refer to [LAN-83, "CAN Communication Circuit Check"](#) .

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

PKIA8239E

CAN SYSTEM (TYPE 3)

[CAN]

Case 11

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-85, "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 | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | — | UNKWN |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN ✓ | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | UNKWN |
| ABS | — | NG | UNKWN | UNKWN | — | — | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | UNKWN | — | — |

PKIA8240E

Case 12

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-85, "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 | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | — | UNKWN |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | UNKWN |
| ABS | — | NG | UNKWN | UNKWN ✓ | — | — | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | UNKWN | — | — |

PKIA8241E

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LAN

Circuit Check Between Data Link Connector and Unified Meter and A/C Amp.

AKS00A90

1. CHECK HARNESS FOR OPEN CIRCUIT

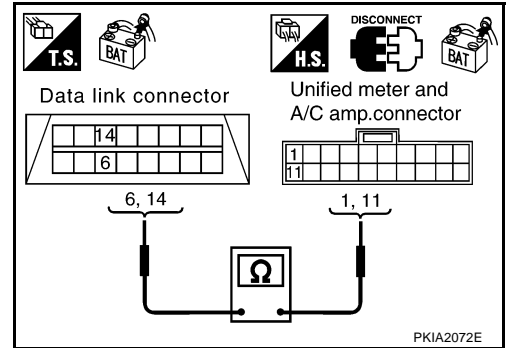
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector and unified meter and A/C amp. connector.
4. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and unified meter and A/C amp. harness connector M48 terminals 1 (L), 11 (P).

6 (L) – 1 (L) : Continuity should exist.

14 (P) – 11 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-65, "Work Flow"](#) .
- NG >> Repair harness.



Circuit Check Between Unified Meter and A/C Amp. and BCM

AKS00A9P

1. CHECK HARNESS FOR OPEN CIRCUIT

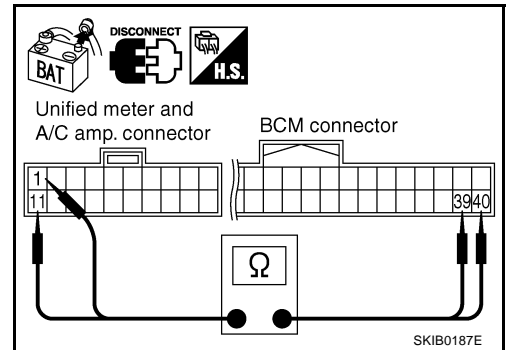
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following connectors.
 - ECM connector
 - Unified meter and A/C amp. connector
 - BCM connector
4. Check continuity between unified meter and A/C amp. harness connector M48 terminals 1 (L), 11 (P) and BCM harness connector M90 terminals 39 (L), 40 (P).

1 (L) – 39 (L) : Continuity should exist.

11 (P) – 40 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-65, "Work Flow"](#) .
- NG >> Repair harness.



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

AKS00A9Q

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 (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

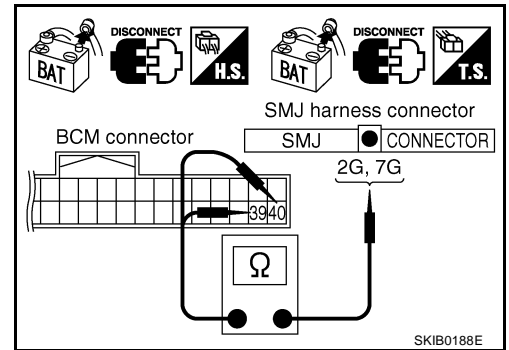
1. Disconnect BCM connector and harness connector M15.
2. Check continuity between BCM harness connector M90 terminals 39 (L), 40 (P) and harness connector M15 terminals 2G (L), 7G (P).

39 (L) – 2G (L) : Continuity should exist.

40 (P) – 7G (P) : Continuity should exist.

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

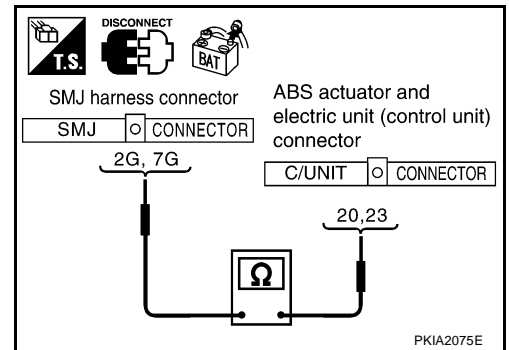
1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L), 23 (P).

2G (L) – 20 (L) : Continuity should exist.

7G (P) – 23 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-65, "Work Flow"](#).
- NG >> Repair harness.



ECM Circuit Check

1. CHECK CONNECTOR

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

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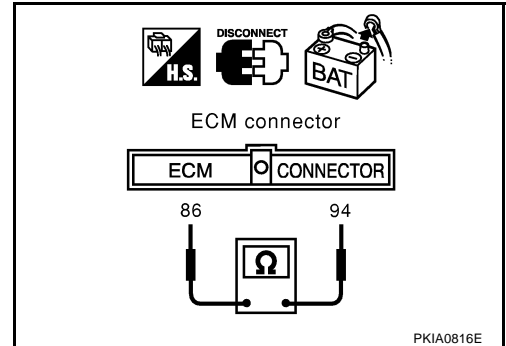
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Approx. 108 – 132Ω

OK or NG

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



Data Link Connector Circuit Check

1. CHECK CONNECTOR

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

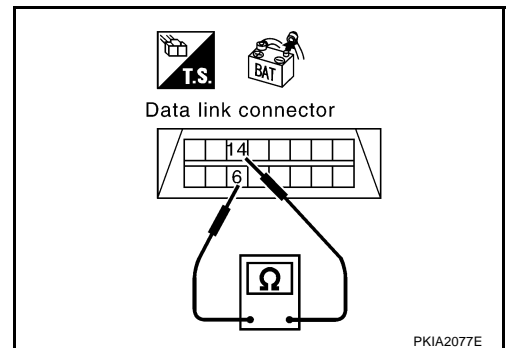
2. CHECK HARNESS FOR OPEN CIRCUIT

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

6 (L) – 14 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Diagnose again. Refer to [LAN-65, "Work Flow"](#) .
 NG >> Repair harness between data link connector and unified meter and A/C amp.



Unified Meter and A/C Amp. Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

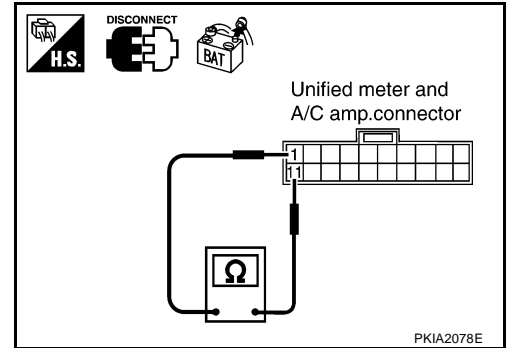
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace unified meter and A/C amp.
 NG >> Repair harness between unified meter and A/C amp. and BCM.



AKS00A9U

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.

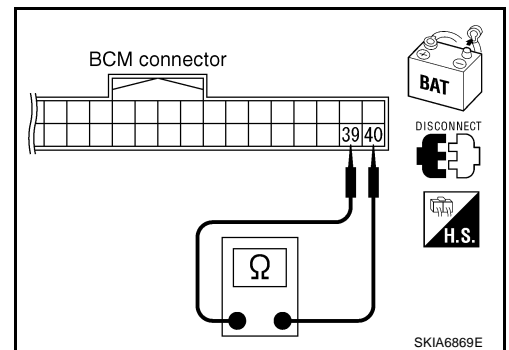
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM.
 NG >> Repair harness between BCM and harness connector M15.



AKS00A9V

ABS Actuator and Electric Unit (Control Unit) Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

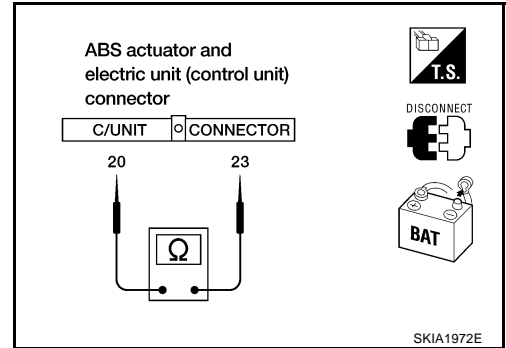
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect ABS actuator and electric unit (control unit) connector.
2. Check resistance between ABS actuator and electric unit (control unit) harness connector E51 terminals 20 (L) and 23 (P).

20 (L) – 23 (P) : 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.



AKS00A9W

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.

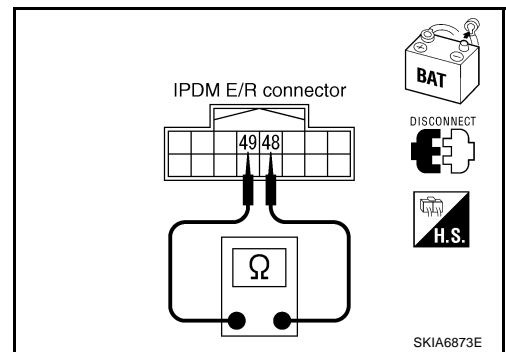
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) – 49 (P) : 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

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, meter side, control unit side and harness side).
 - ECM
 - Unified meter and A/C amp.
 - 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.

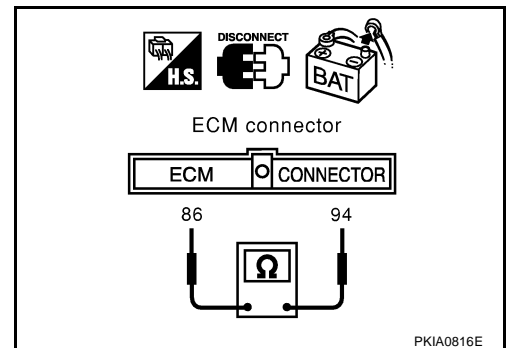
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F102.
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Continuity should not exist.

OK or NG

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



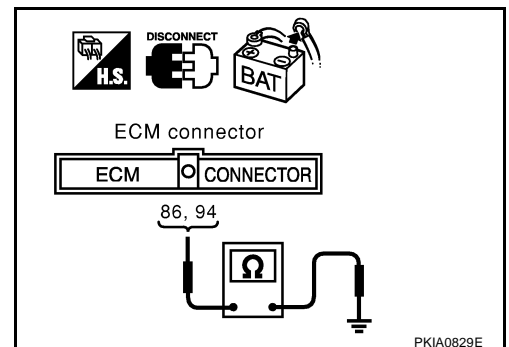
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – ground : Continuity should not exist.
86 (P) – ground : Continuity should not exist.

OK or NG

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



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4. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect following connectors.
 - Unified meter and A/C amp. connector
 - BCM connector
 - Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

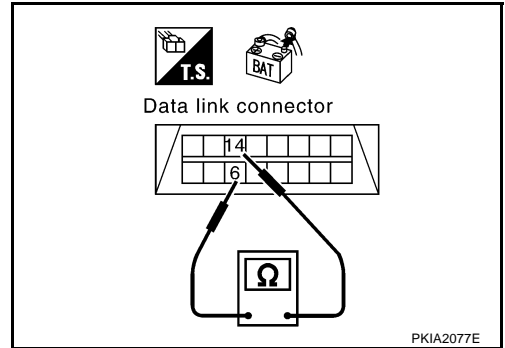
6 (L) – 14 (P) : Continuity should not exist.

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 M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15



5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

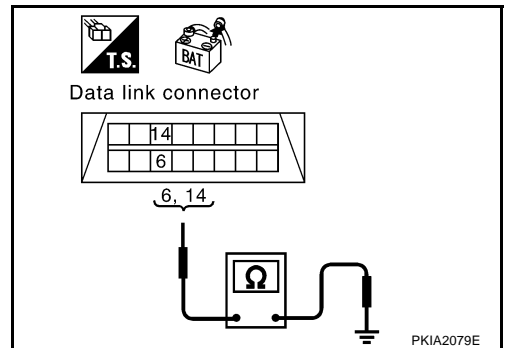
14 (P) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and harness connector M15



6. CHECK HARNESS FOR SHORT CIRCUIT

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

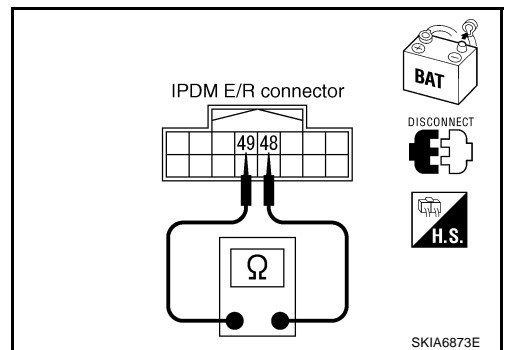
48 (L) – 49 (P) : Continuity should not exist.

OK or NG

OK >> GO TO 7.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108



7. CHECK HARNESS FOR SHORT CIRCUIT

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

48 (L) – ground : Continuity should not exist.

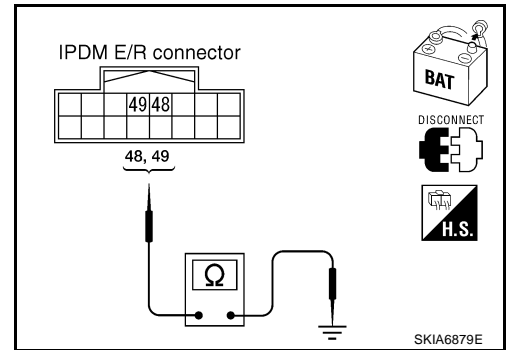
49 (P) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

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

- Harness between IPDM E/R and ABS actuator and electric unit (control unit)
- Harness between IPDM E/R and harness connector E108



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-85, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

OK >> Connect all the connectors and diagnose again. Refer to [LAN-65, "Work Flow"](#).

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

IPDM E/R Ignition Relay Circuit Check

AKS00A9Y

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

- IPDM E/R power supply circuit. Refer to [PG-28, "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""](#).

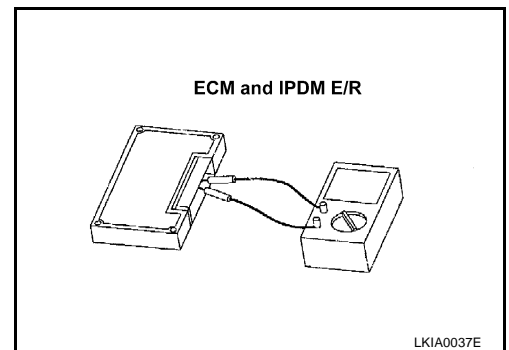
Component Inspection

ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

AKS00A9Z

- 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 | |



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CAN SYSTEM (TYPE 4)

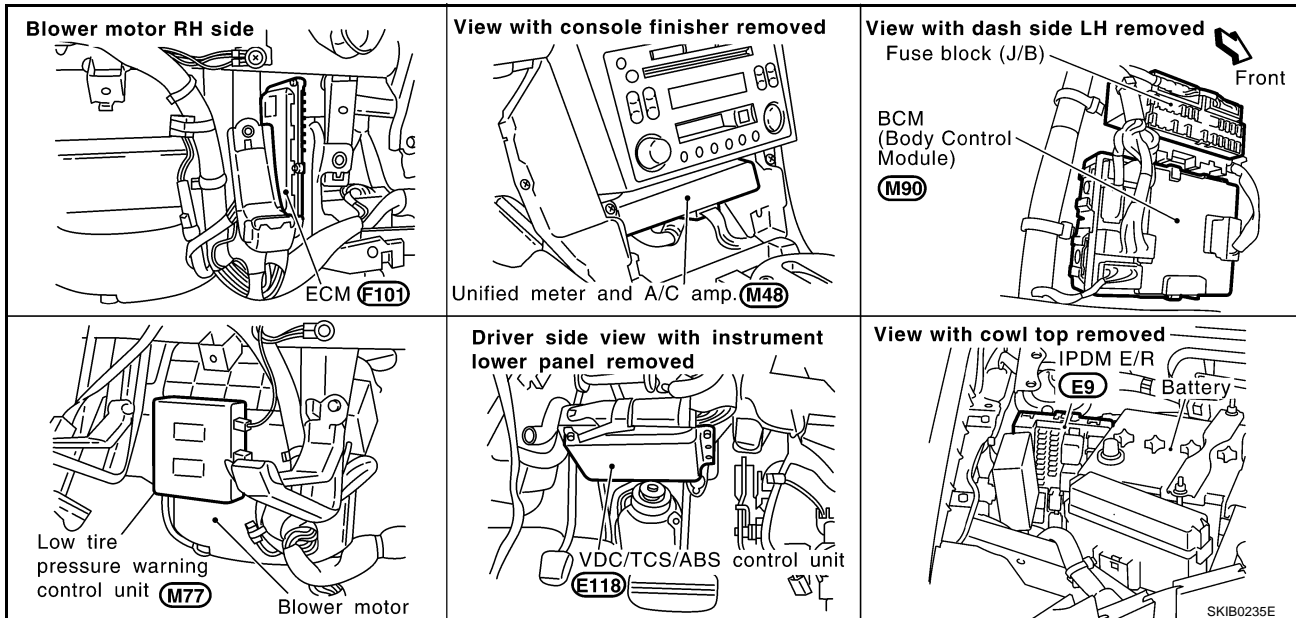
System Description

AKS009DT

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

AKS009DU



CAN SYSTEM (TYPE 4)

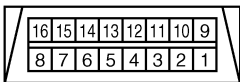
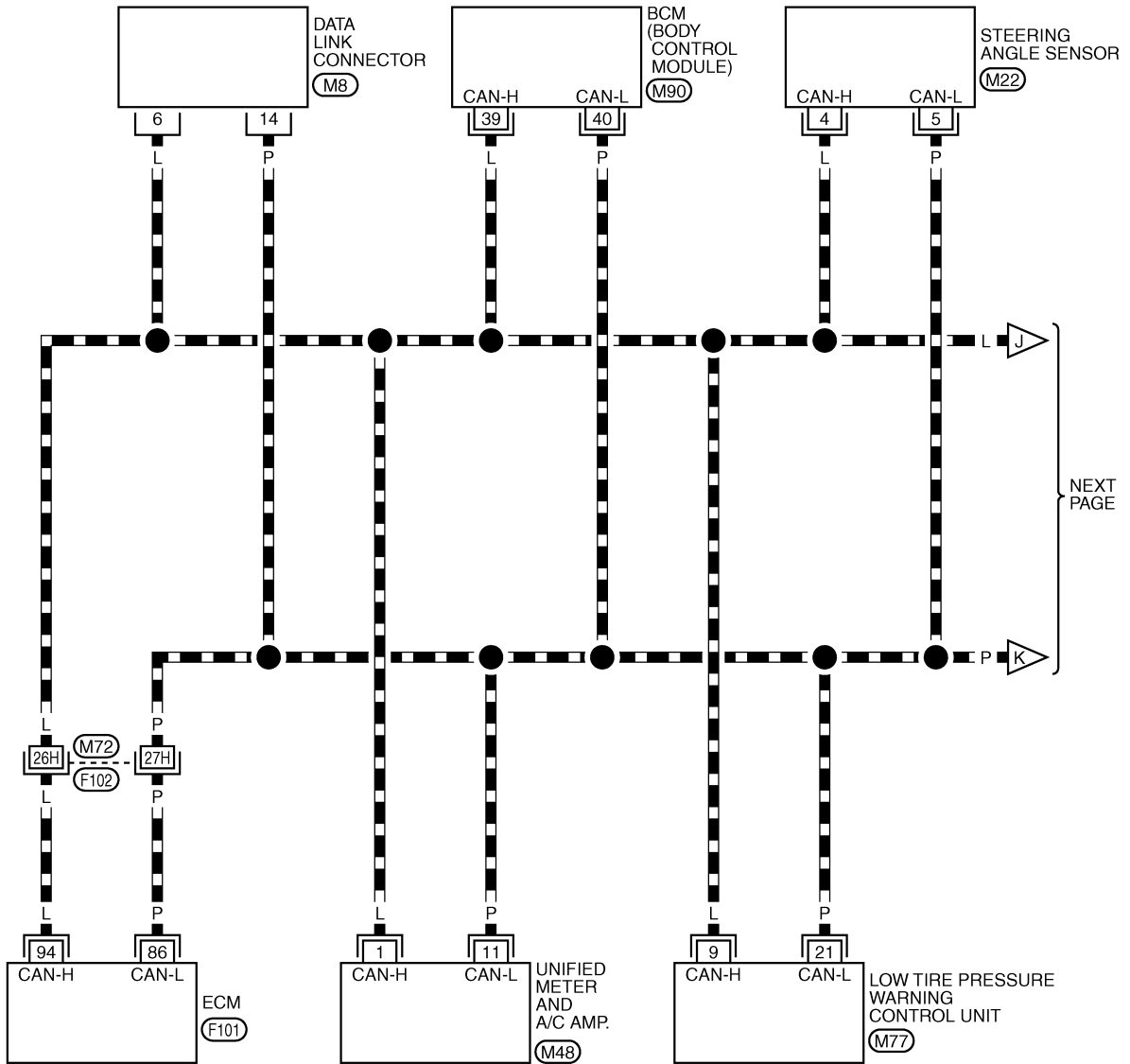
[CAN]

AKS009DV

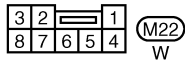
Wiring Diagram — CAN —

LAN-CAN-05

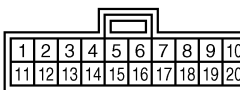
▬ : DATA LINE



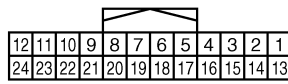
(M8)
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(M22)
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(M48)
GY



(M77)
W

REFER TO THE FOLLOWING.

(F102) -SUPER MULTIPLE JUNCTION (SMJ)

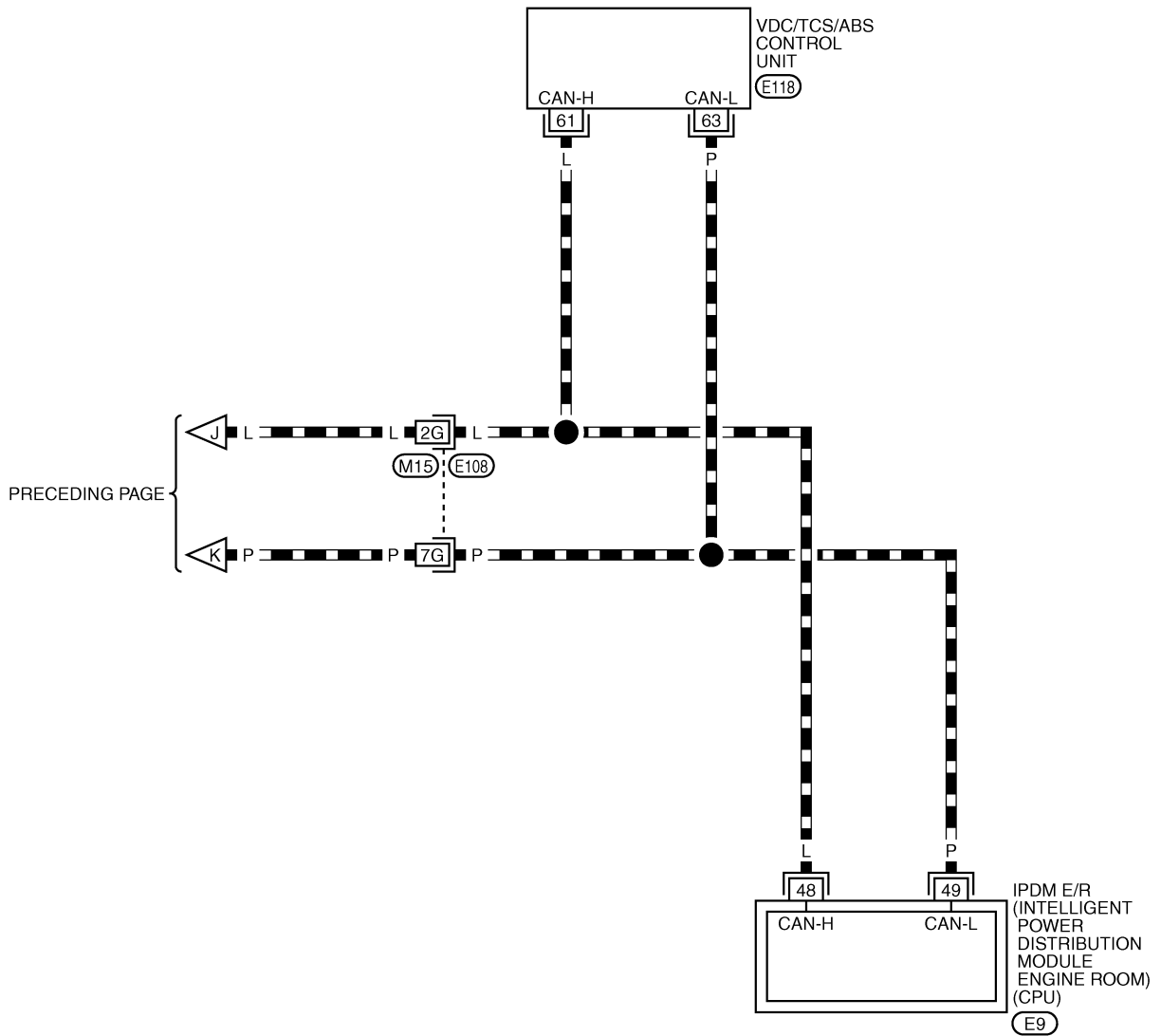
(M90), (F101) -ELECTRICAL UNITS

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LAN-CAN-06

▬ : DATA LINE



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| 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 |

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REFER TO THE FOLLOWING.

(E108) -SUPER MULTIPLE JUNCTION (SMJ)

(E118) -ELECTRICAL UNITS

TKWT1558E

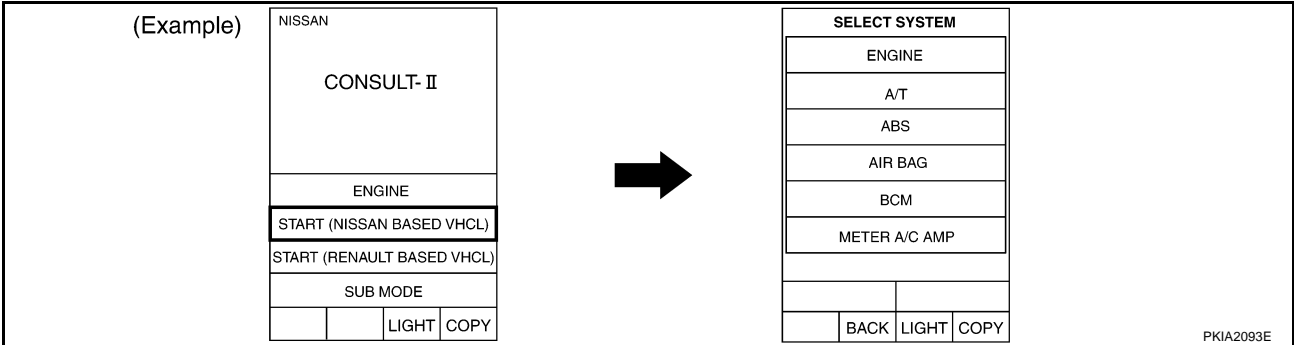
CAN SYSTEM (TYPE 4)

[CAN]

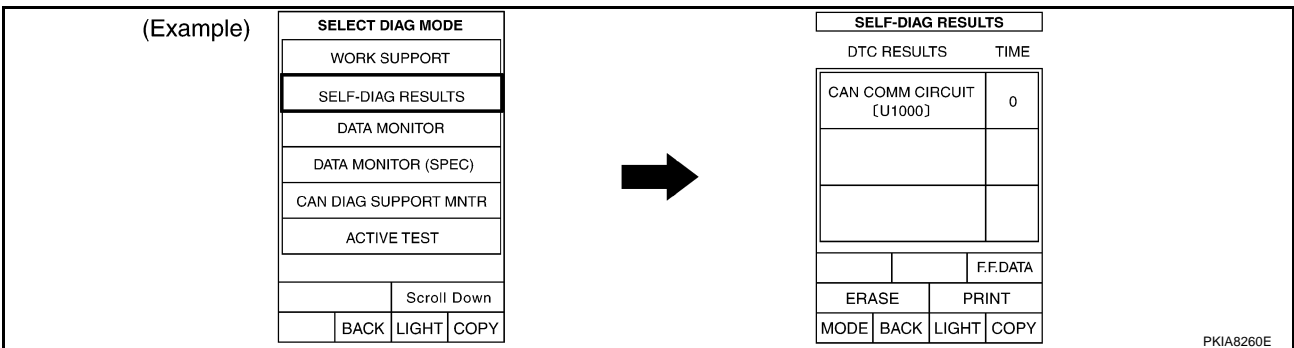
AKS00AA0

Work Flow

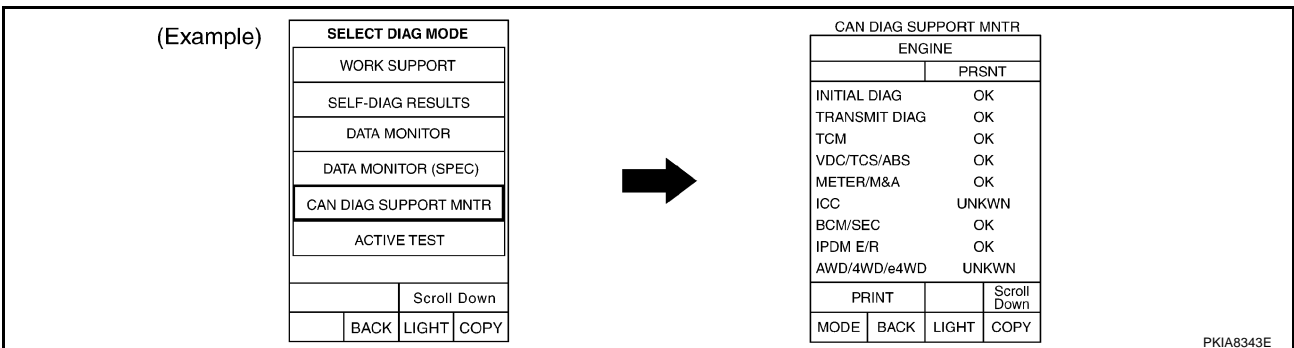
- When there are no indications of "METER A/C AMP", "BCM", "AIR PRESSURE MONITOR" or "IPDM E/R" on "SELECT SYSTEM" display of CONSULT-II, print the "SELECT SYSTEM".



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



- Print all the data of "CAN DIAG SUPPORT MNTR" for "ENGINE", "METER A/C AMP", "BCM", "AIR PRESSURE MONITOR", "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-90, "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-90, "CHECK SHEET"](#) .

NOTE:

- If "NG" is displayed on "CANINITIAL 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-92, "CHECK SHEET RESULTS \(EXAMPLE\)"](#) .

CAN SYSTEM (TYPE 4)

[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 | TIRE-P | STRG | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | — | — | UNKWN | UNKWN |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN | — | UNKWN | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | — | — | UNKWN |
| AIR PRESSURE MONITOR | No indication | NG | UNKWN | — | UNKWN | — | — | — | — | — |
| ABS | — | NG | UNKWN | UNKWN | — | — | — | UNKWN | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | UNKWN | — | — | — | — |

Symptoms :

Attach copy of
SELECT SYSTEM

Attach copy of
SELECT SYSTEM

CAN SYSTEM (TYPE 4)

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Attach copy of
ENGINE
SELF-DIAG RESULTS

Attach copy of
METER A/C AMP
SELF-DIAG RESULTS

Attach copy of
BCM
SELF-DIAG RESULTS

Attach copy of
AIR PRESSURE
MONITOR
SELF-DIAG RESULTS

Attach copy of
ABS
SELF-DIAG RESULTS

Attach copy of
IPDM E/R
SELF-DIAG RESULTS

Attach copy of
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CAN DIAG SUPPORT
MNTR

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METER A/C AMP
CAN DIAG SUPPORT
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CHECK SHEET RESULTS (EXAMPLE)

NOTE:

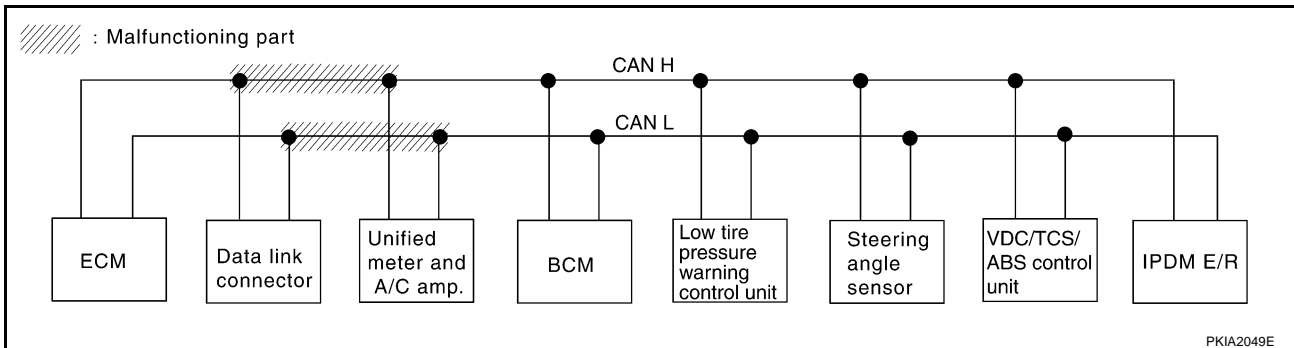
If "NG" is displayed on "INITIAL DIAG (Initial diagnosis)" as "CAN DIAG SUPPORT MNTR" for the diagnosed control unit, replace the control unit.

Case 1

Check harness between data link connector and unified meter and A/C amp. Refer to [LAN-106. "Circuit Check Between Data Link Connector and Unified Meter and A/C Amp."](#) .

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

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CAN SYSTEM (TYPE 4)

[CAN]

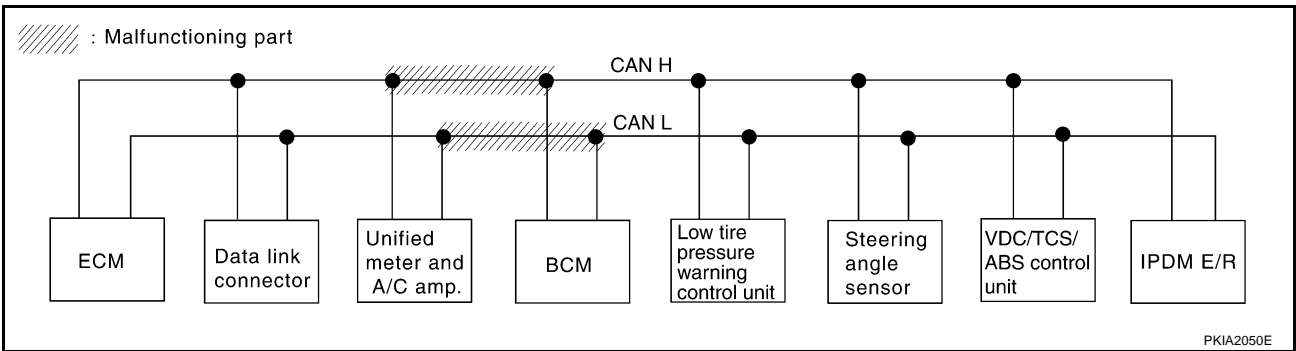
Case 2

Check harness between unified meter and A/C amp. and BCM. Refer to [LAN-106, "Circuit Check Between Unified Meter and A/C Amp. and BCM"](#) .

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

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CAN SYSTEM (TYPE 4)

[CAN]

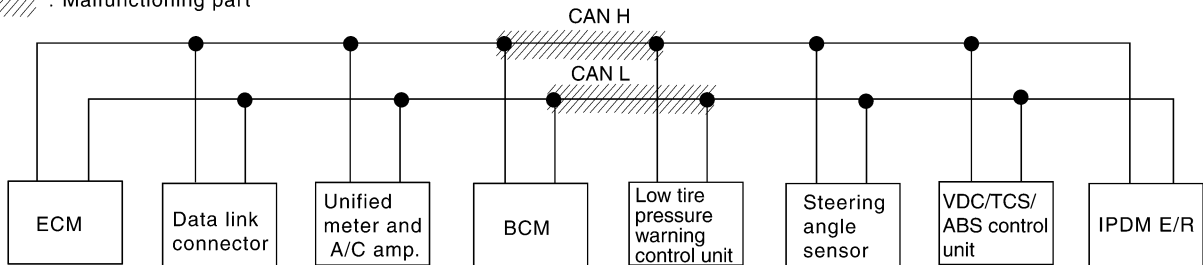
Case 3

Check harness between BCM and Low Tire Pressure Warning Control Unit. Refer to [LAN-107, "Circuit Check Between BCM and Low Tire Pressure Warning Control Unit"](#) .

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

PKIA8246E

//// : Malfunctioning part



PKIA2051E

CAN SYSTEM (TYPE 4)

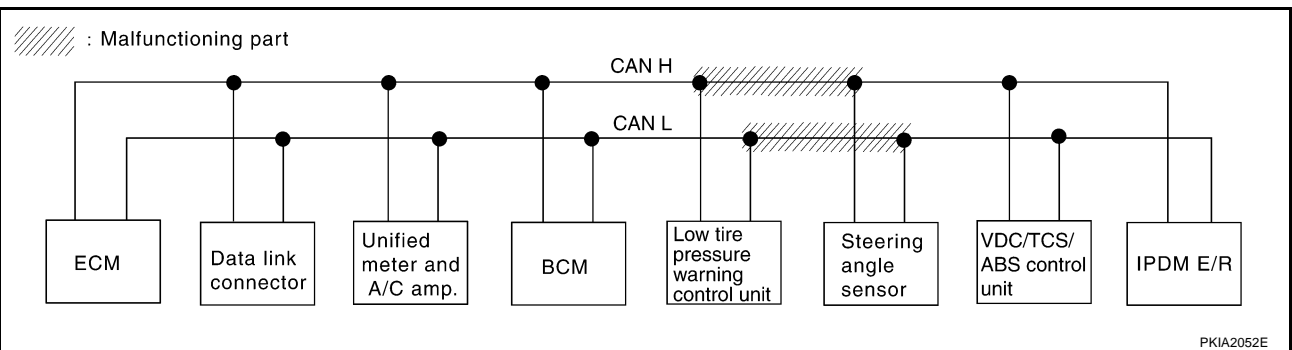
[CAN]

Case 4

Check harness between Low Tire Pressure Warning Control Unit and steering angle sensor. Refer to [LAN-107, "Circuit Check Between Low Tire Pressure Warning Control Unit and Steering Angle Sensor"](#) .

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

PKIA8247E



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CAN SYSTEM (TYPE 4)

[CAN]

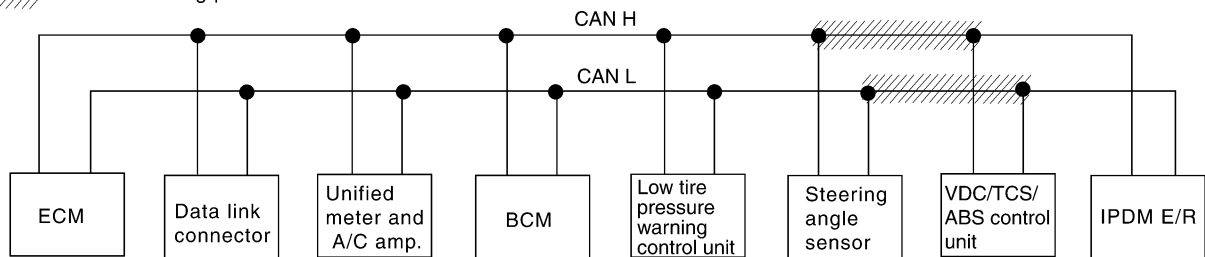
Case 5

Check harness between steering angle sensor and VDC/TCS/ABS control unit. Refer to [LAN-108. "Circuit Check Between Steering Angle Sensor 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 | TIRE-P | STRG | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | — | — | UNKWN ✓ | UNKWN ✓ |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN | — | UNKWN ✓ | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | — | — | UNKWN ✓ |
| AIR PRESSURE MONITOR | No indication | NG | UNKWN | — | UNKWN | — | — | — | — | — |
| ABS | — | NG | UNKWN | UNKWN ✓ | — | — | — | UNKWN ✓ | — | — |
| IPDM E/R | No indication ✓ | — | UNKWN | UNKWN | — | UNKWN | — | — | — | — |

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//// : Malfunctioning part



PKIA2053E

CAN SYSTEM (TYPE 4)

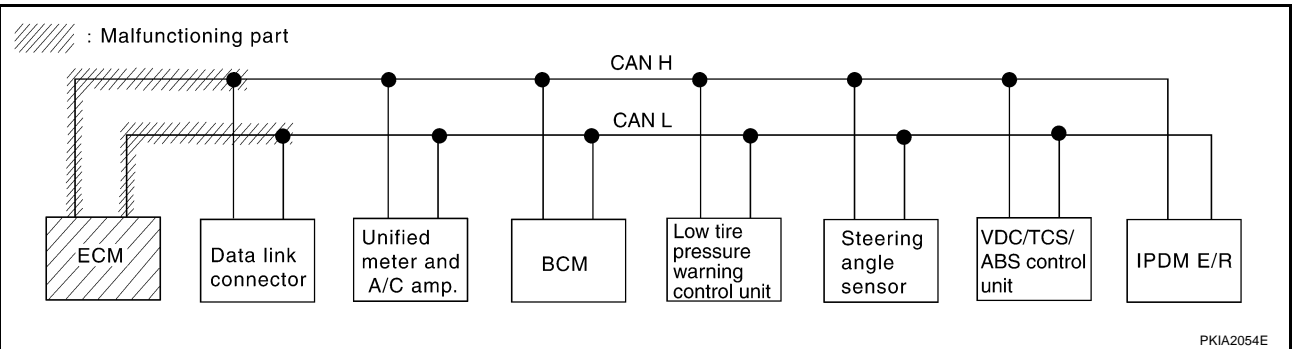
[CAN]

Case 6

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

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

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CAN SYSTEM (TYPE 4)

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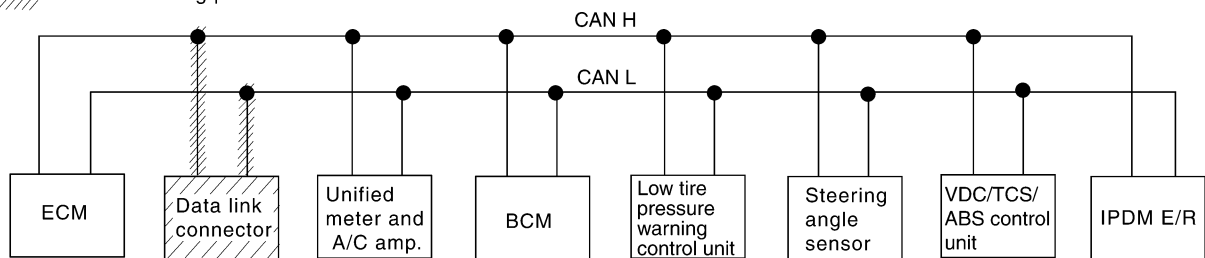
Case 7

Check data link connector circuit. Refer to [LAN-109, "Data Link Connector Circuit Check"](#) .

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

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/// : Malfunctioning part



PKIA2055E

CAN SYSTEM (TYPE 4)

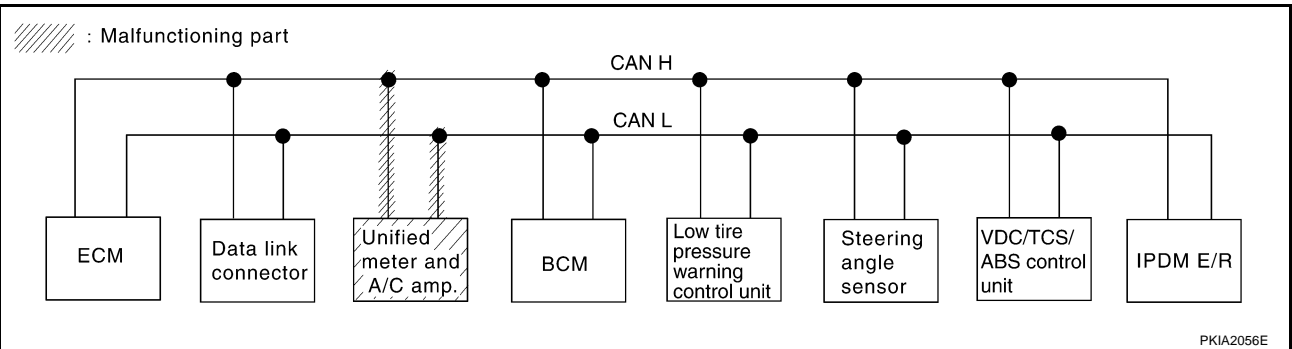
[CAN]

Case 8

Check unified meter and A/C amp. circuit. Refer to [LAN-109, "Unified Meter and A/C Amp. Circuit Check"](#) .

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

PKIA8251E



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CAN SYSTEM (TYPE 4)

[CAN]

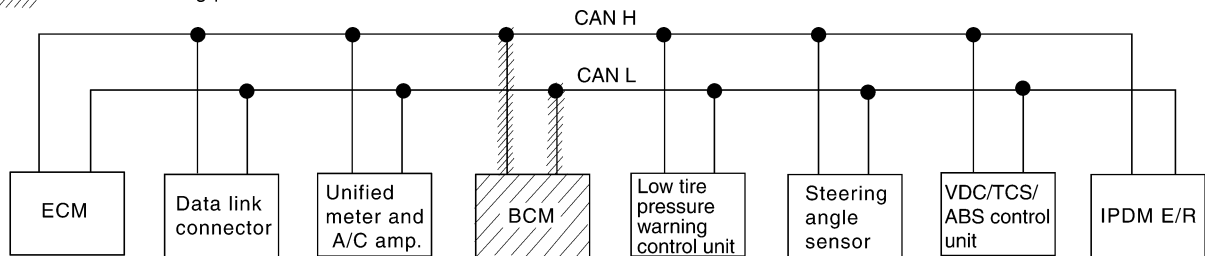
Case 9

Check BCM circuit. Refer to [LAN-110, "BCM Circuit Check"](#) .

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

PKIA8252E

//// : Malfunctioning part



PKIA2057E

CAN SYSTEM (TYPE 4)

[CAN]

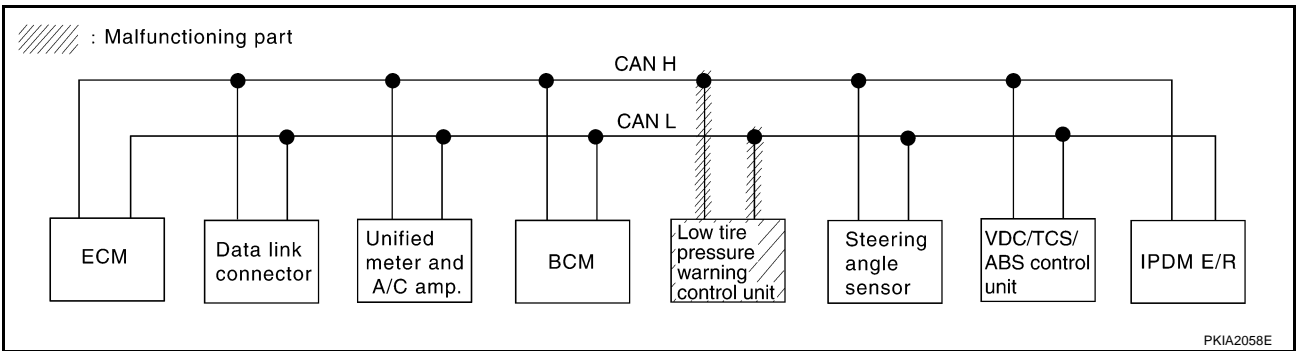
Case 10

Check Low Tire Pressure Warning Control Unit circuit. Refer to [LAN-110, "Low Tire Pressure Warning Control Unit Circuit Check"](#).

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

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PKIA2058E

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CAN SYSTEM (TYPE 4)

[CAN]

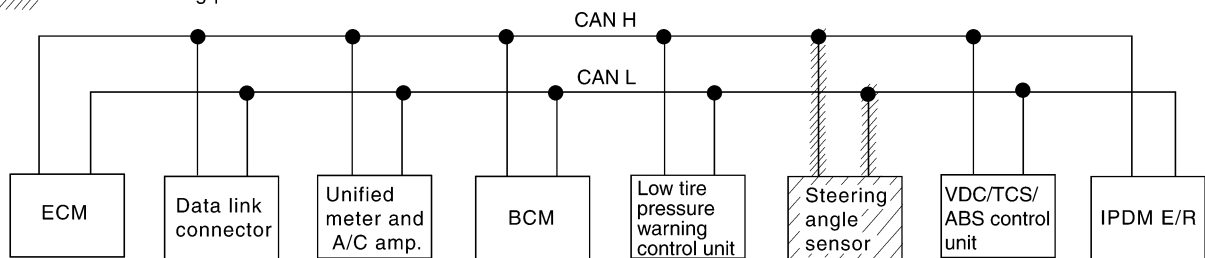
Case 11

Check steering angle sensor circuit. Refer to [LAN-111, "Steering Angle Sensor Circuit Check"](#) .

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

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//// : Malfunctioning part



PKIA2059E

CAN SYSTEM (TYPE 4)

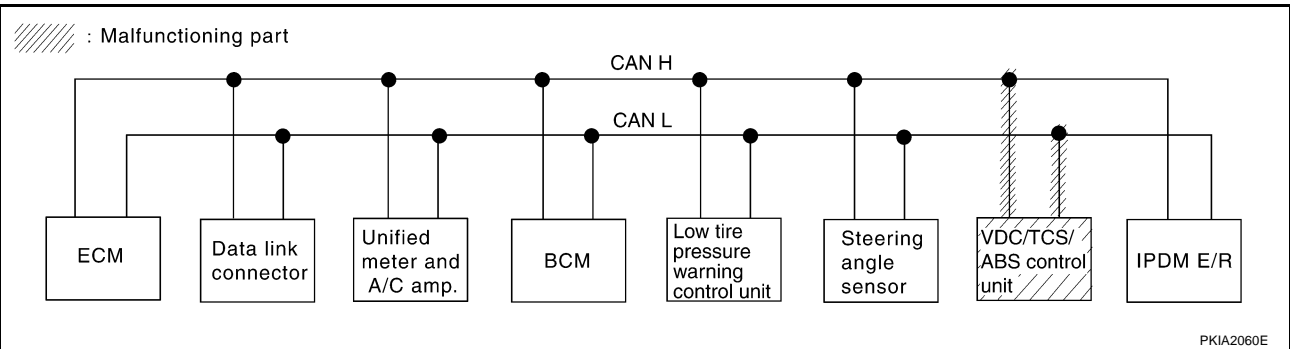
[CAN]

Case 12

Check VDC/TCS/ABS control unit circuit. Refer to [LAN-111, "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 | TIRE-P | STRG | VDC/TCS /ABS | IPDM E/R |
| ENGINE | — | NG | UNKWN | — | UNKWN | UNKWN | — | — | UNKWN ✓ | UNKWN |
| METER A/C AMP | No indication | — | UNKWN | UNKWN | — | UNKWN | UNKWN | — | UNKWN ✓ | — |
| BCM | No indication | NG | UNKWN | UNKWN | UNKWN | — | — | — | — | UNKWN |
| AIR PRESSURE MONITOR | No indication | NG | UNKWN | — | UNKWN | — | — | — | — | — |
| ABS | — | NG ✓ | UNKWN ✓ | UNKWN ✓ | — | — | — | UNKWN ✓ | — | — |
| IPDM E/R | No indication | — | UNKWN | UNKWN | — | UNKWN | — | — | — | — |

PKIA8255E



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CAN SYSTEM (TYPE 4)

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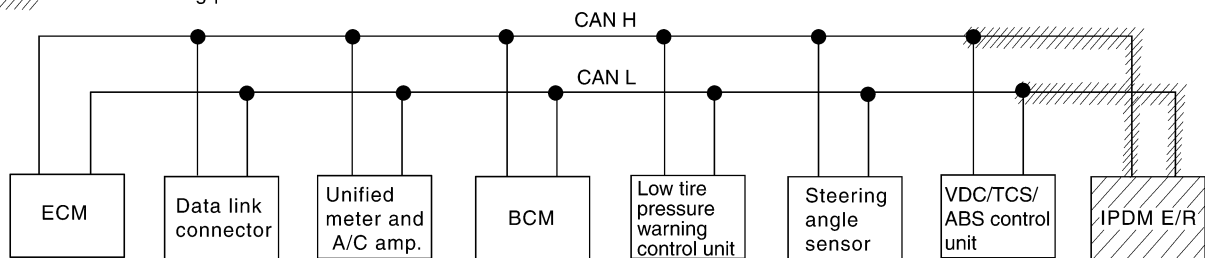
Case 13

Check IPDM E/R circuit. Refer to [LAN-112, "IPDM E/R Circuit Check"](#) .

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

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▨ : Malfunctioning part



PKIA2061E

Case 14

Check CAN communication circuit. Refer to [LAN-113, "CAN Communication Circuit Check"](#) .

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

PKIA8257E

CAN SYSTEM (TYPE 4)

[CAN]

Case 15

Check IPDM E/R ignition relay circuit continuously sticks "OFF". Refer to [LAN-115, "IPDM E/R Ignition Relay Circuit Check"](#) .

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

PKIA8258E

Case 16

Check IPDM E/R ignition relay circuit continuously sticks "ON". Refer to [LAN-115, "IPDM E/R Ignition Relay Circuit Check"](#) .

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

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Circuit Check Between Data Link Connector and Unified Meter and A/C Amp.

AKS00AA1

1. CHECK HARNESS FOR OPEN CIRCUIT

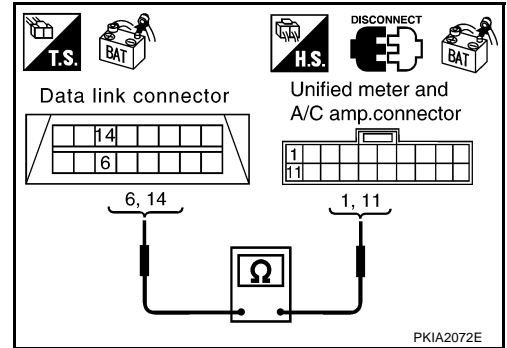
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect ECM connector and unified meter and A/C amp. connector.
4. Check continuity between data link connector M8 terminals 6 (L), 14 (P) and unified meter and A/C amp. harness connector M48 terminals 1 (L), 11 (P).

6 (L) – 1 (L) : Continuity should exist.

14 (P) – 11 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-89, "Work Flow"](#) .
- NG >> Repair harness.



Circuit Check Between Unified Meter and A/C Amp. and BCM

AKS00AA2

1. CHECK HARNESS FOR OPEN CIRCUIT

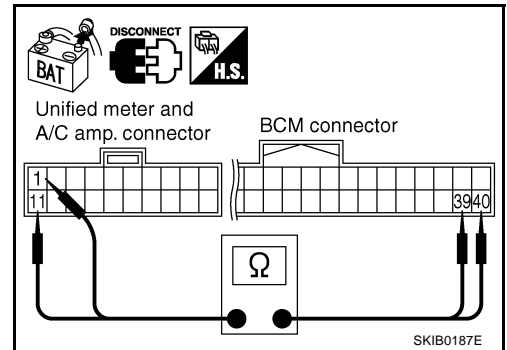
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following connectors.
 - ECM connector
 - Unified meter and A/C amp. connector
 - BCM connector
4. Check continuity between unified meter and A/C amp. harness connector M48 terminals 1 (L), 11 (P) and BCM harness connector M90 terminals 39 (L), 40 (P).

1 (L) – 39 (L) : Continuity should exist.

11 (P) – 40 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-89, "Work Flow"](#) .
- NG >> Repair harness.



Circuit Check Between BCM and Low Tire Pressure Warning Control Unit

AKS009DZ

1. CHECK HARNESS FOR OPEN CIRCUIT

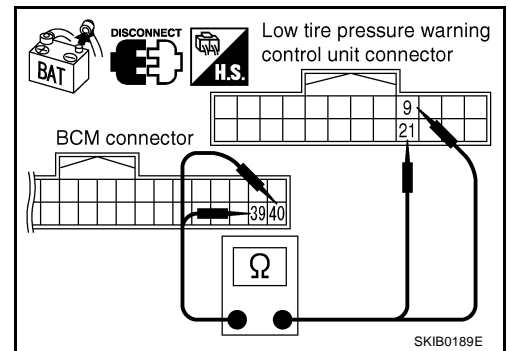
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following connectors.
 - ECM connector
 - BCM connector
 - Low tire pressure warning control unit connector
4. Check continuity between BCM harness connector M90 terminals 39 (L), 40 (P) and low tire pressure warning control unit harness connector M77 terminals 9 (L), 21 (P).

39 (L) – 9 (L) : Continuity should exist.

40 (P) – 21 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-89, "Work Flow"](#).
- NG >> Repair harness.

**Circuit Check Between Low Tire Pressure Warning Control Unit and Steering Angle Sensor**

AKS009E0

1. CHECK HARNESS FOR OPEN CIRCUIT

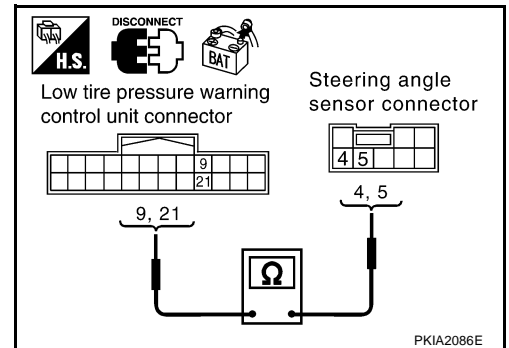
1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Disconnect the following connectors.
 - ECM connector
 - Low tire pressure warning control unit connector
 - Steering angle sensor connector
4. Check continuity between Low tire pressure warning control unit harness connector M77 terminals 9 (L), 21 (P) and steering angle sensor harness connector M22 terminals 4 (L), 5 (P).

9 (L) – 4 (L) : Continuity should exist.

21 (P) – 5 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-89, "Work Flow"](#).
- NG >> Repair harness.



Circuit Check Between Steering Angle Sensor and VDC/TCS/ABS Control Unit

AKS00AA3

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 (connector side and harness side).
 - Harness connector M15
 - Harness connector E108

OK or NG

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

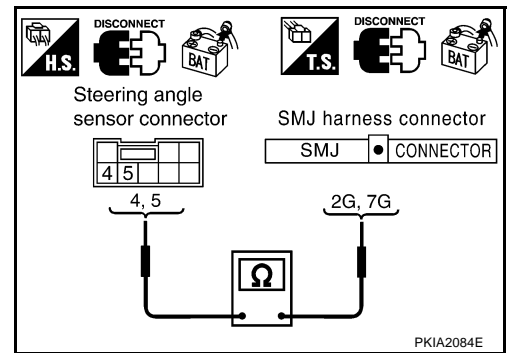
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect steering angle sensor connector and harness connector M15.
2. Check continuity between steering angle sensor harness connector M22 terminals 4 (L), 5 (P) and harness connector M15 terminals 2G (L), 7G (P).

4 (L) – 2G (L) : Continuity should exist.
5 (P) – 7G (P) : Continuity should exist.

OK or NG

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



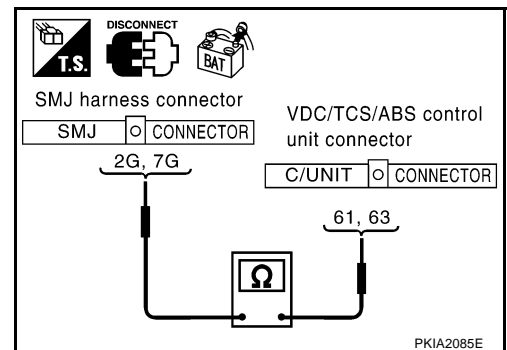
3. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect VDC/TCS/ABS control unit connector.
2. Check continuity between harness connector E108 terminals 2G (L), 7G (P) and VDC/TCS/ABS control unit harness connector E118 terminals 61 (L), 63 (P).

2G (L) – 61 (L) : Continuity should exist.
7G (P) – 63 (P) : Continuity should exist.

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-89, "Work Flow"](#).
 NG >> Repair harness.



ECM Circuit Check

AKS00AA4

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

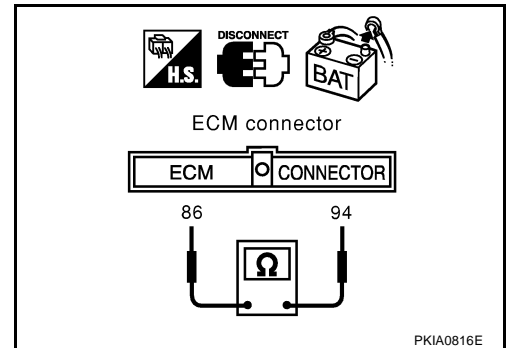
1. Disconnect ECM connector.
2. Check resistance between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P)

: Approx. 108 – 132Ω

OK or NG

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



PKIA0816E

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

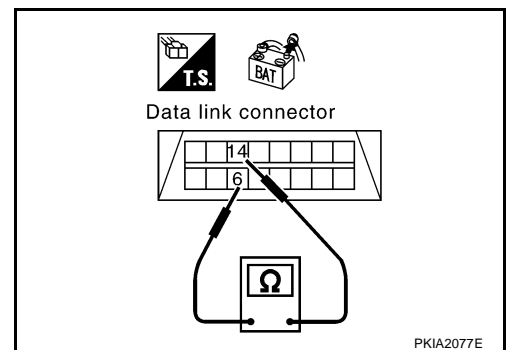
Check resistance between data link connector M8 terminals 6 (L) and 14 (P).

6 (L) – 14 (P)

: Approx. 54 – 66Ω

OK or NG

- OK >> Diagnose again. Refer to [LAN-89, "Work Flow"](#) .
 NG >> Repair harness between data link connector and unified meter and A/C amp.



PKIA2077E

Unified Meter and A/C Amp. Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

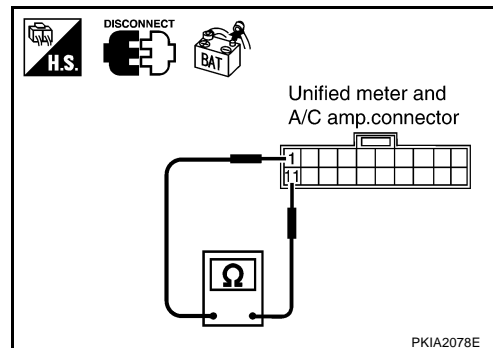
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect unified meter and A/C amp. connector.
2. Check resistance between unified meter and A/C amp. harness connector M48 terminals 1 (L) and 11 (P).

1 (L) – 11 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace unified meter and A/C amp.
 NG >> Repair harness between unified meter and A/C amp. and BCM.



AKS00AA7

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.

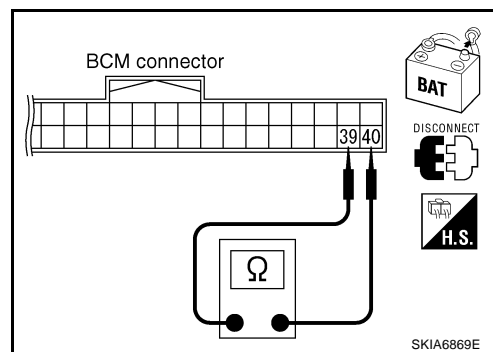
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect BCM connector.
2. Check resistance between BCM harness connector M90 terminals 39 (L) and 40 (P).

39 (L) – 40 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace BCM.
 NG >> Repair harness between BCM and steering angle sensor.



AKS009E6

Low Tire Pressure Warning Control Unit Circuit Check

1. CHECK CONNECTOR

1. Turn ignition switch OFF.
2. Disconnect the negative battery terminal.
3. Check terminals and connector of low tire pressure warning 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.

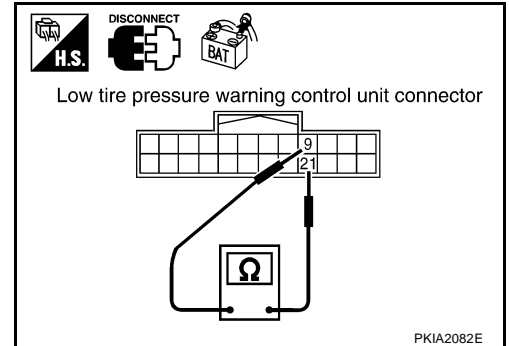
2. CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect low tire pressure warning control unit connector.
2. Check resistance between low tire pressure warning control unit harness connector M77 terminals 9 (L) and 21 (P).

9 (L) – 21 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace low tire pressure warning control unit.
 NG >> Repair harness between low tire pressure warning control unit and steering angle sensor.



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.

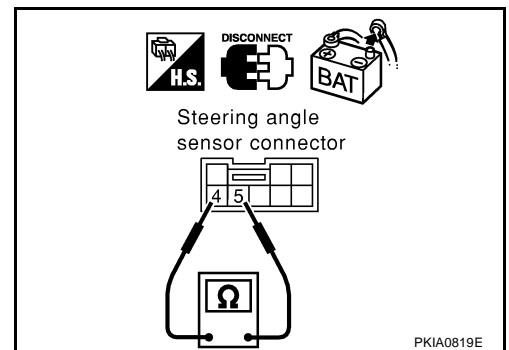
2. CHECK HARNESS FOR OPEN CIRCUIT

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

4 (L) – 5 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace steering angle sensor.
 NG >> Repair harness between steering angle sensor and harness connector M15.



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.

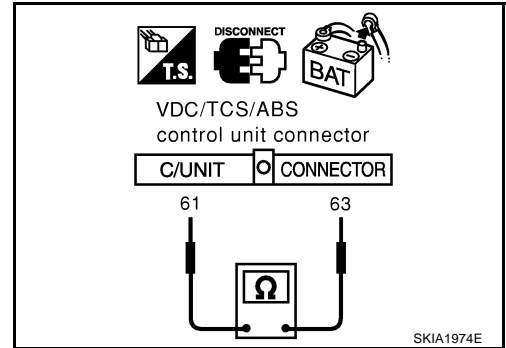
2. CHECK HARNESS FOR OPEN CIRCUIT

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 (P).

61 (L) – 63 (P) : Approx. 54 – 66Ω

OK or NG

- OK >> Replace VDC/TCS/ABS control unit.
 NG >> Repair harness between VDC/TCS/ABS control unit and IPDM E/R.



AKS00AAA

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.

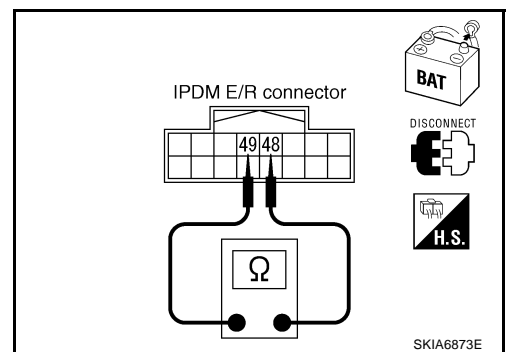
2. CHECK HARNESS FOR OPEN CIRCUIT

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

48 (L) – 49 (P) : Approx. 108 – 132Ω

OK or NG

- OK >> Replace IPDM E/R.
 NG >> Repair harness between IPDM E/R and VDC/TCS/ABS control unit.



CAN Communication 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, meter side, sensor side, control unit side and harness side).
 - ECM
 - Unified meter and A/C amp.
 - BCM
 - Low tire pressure warning control unit
 - 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.

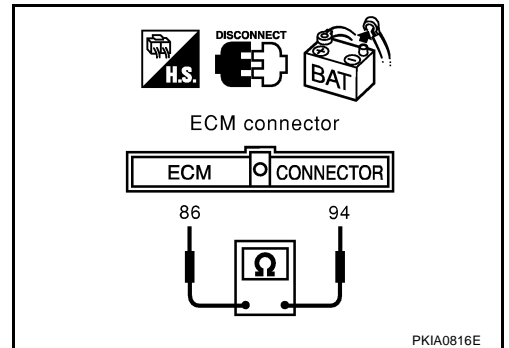
2. CHECK HARNESS FOR SHORT CIRCUIT

1. Disconnect ECM connector and harness connector F102.
2. Check continuity between ECM harness connector F101 terminals 94 (L) and 86 (P).

94 (L) – 86 (P) : Continuity should not exist.

OK or NG

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



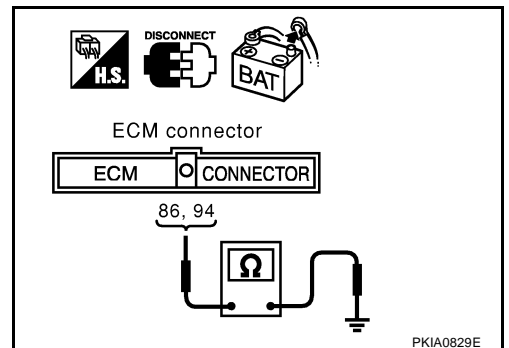
3. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between ECM harness connector F101 terminals 94 (L), 86 (P) and ground.

94 (L) – ground : Continuity should not exist.
86 (P) – 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.
 - Unified meter and A/C amp. connector
 - BCM connector
 - Low tire pressure warning control unit connector
 - Steering angle sensor connector
 - Harness connector M15
2. Check continuity between data link connector M8 terminals 6 (L) and 14 (P).

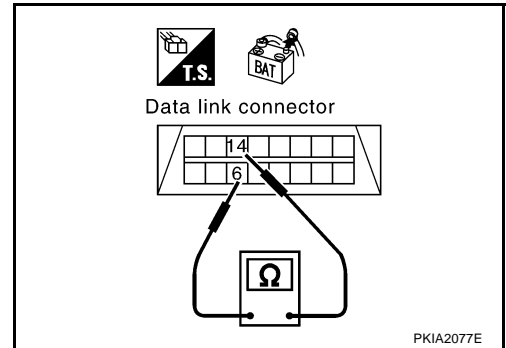
6 (L) – 14 (P) : Continuity should not exist.

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 M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and low tire pressure warning control unit
- Harness between data link connector and steering angle sensor
- Harness between data link connector and harness connector M15



5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

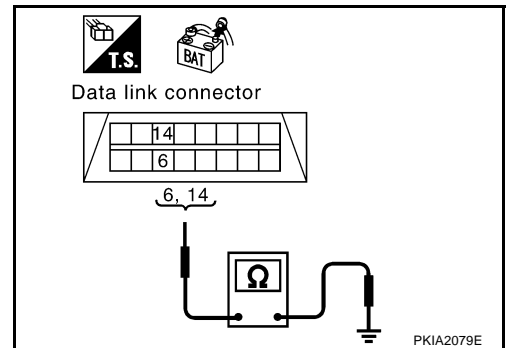
14 (P) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

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

- Harness between data link connector and harness connector M72
- Harness between data link connector and unified meter and A/C amp.
- Harness between data link connector and BCM
- Harness between data link connector and low tire pressure warning control unit
- Harness between data link connector and steering angle sensor
- Harness between data link connector and harness connector M15



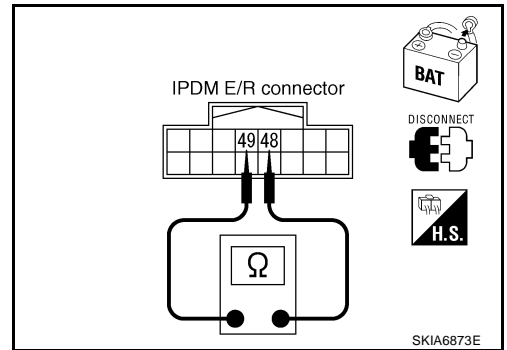
6. CHECK HARNESS FOR SHORT CIRCUIT

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 (P).

48 (L) – 49 (P) : 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 IPDM E/R and VDC/TCS/ABS control unit
 - Harness between IPDM E/R and harness connector E108



7. CHECK HARNESS FOR SHORT CIRCUIT

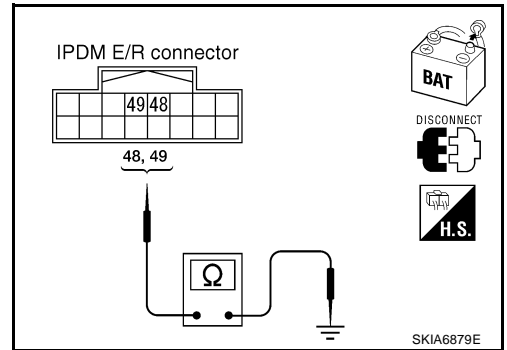
Check continuity between IPDM E/R harness connector E9 terminals 48 (L), 49 (P) and ground.

48 (L) – ground : Continuity should not exist.

49 (P) – 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 IPDM E/R and VDC/TCS/ABS control unit
 - Harness between IPDM E/R and harness connector E108



8. ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to [LAN-115, "ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION"](#).

OK or NG

- OK >> Connect all the connectors and diagnose again. Refer to [LAN-89, "Work Flow"](#).
 NG >> Replace ECM and/or IPDM E/R.

IPDM E/R Ignition Relay Circuit Check

AKS00AAC

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

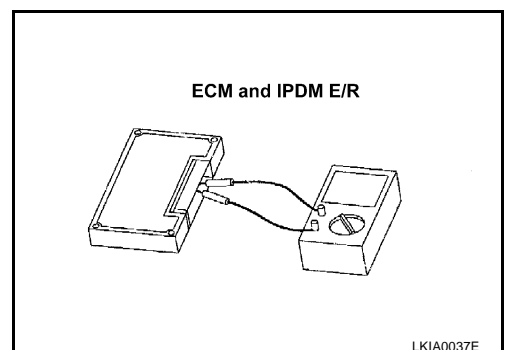
- IPDM E/R power supply circuit. Refer to [PG-28, "IPDM E/R Power/Ground Circuit Inspection"](#).
- Ignition power supply circuit. Refer to [PG-11, "IGNITION POWER SUPPLY — IGNITION SW. IN "ON" AND/OR "START""](#).

**Component Inspection
 ECM/IPDM E/R INTERNAL CIRCUIT INSPECTION**

AKS00AAD

- 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 | |



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