

SECTION **WW**

WIPER, WASHER & HORN

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PRECAUTION

PRECAUTION

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

AKS00AC5

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

AKS003RE

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.

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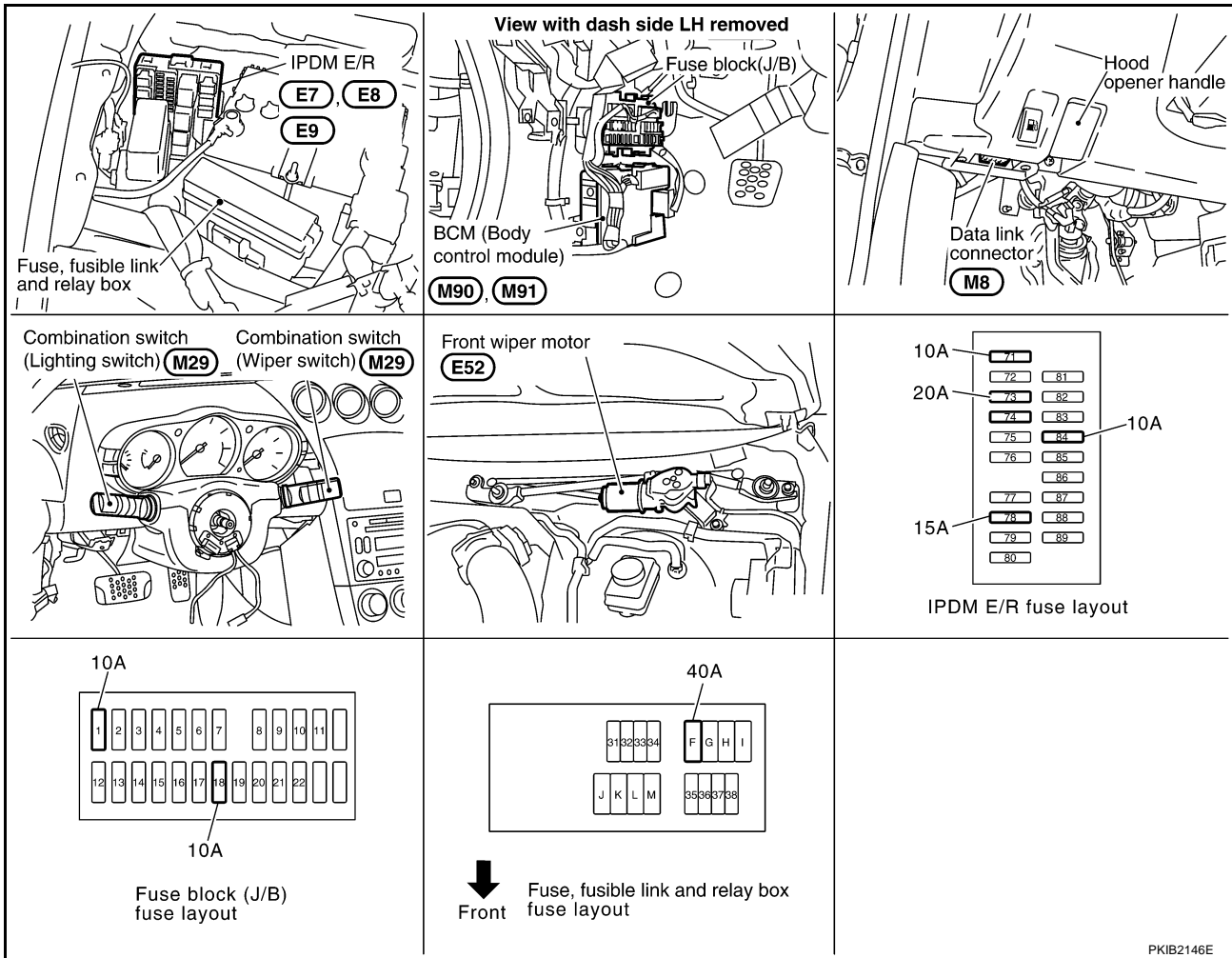
FRONT WIPER AND WASHER SYSTEM

FRONT WIPER AND WASHER SYSTEM

PF2:28810

Components Parts and Harness Connector Location

AKS000Y6



PKIB2146E

System Description

AKS000Y7

- All front wiper relays (HI, LO) are included in IPDM E/R (intelligent power distribution module engine room).
- Wiper switch (combination switch) is composed of a combination of 5 output terminals and 5 input terminals. Terminal combination status is read by BCM (body control module) when switch is turned ON.
- BCM controls front wiper LO, HI, and INT (intermittent) operation.
- IPDM E/R operates wiper motor according to CAN communication signals from BCM.

OUT LINE

Power is supplied at all times

- through 40 A fusible link (letter F, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 10 A fuse [No.18 located in fuse block (J/B)]
- to BCM terminal 42,
- through 20 A fuse (No.73 located in IPDM E/R)
- to front wiper relay, located in IPDM E/R,
- through 15 A fuse (No.78 located in IPDM E/R)
- to CPU located in IPDM E/R,
- through 10 A fuse (No.71 located in IPDM E/R)
- to CPU located in IPDM E/R.

When ignition switch is in ON or START position, power is supplied

FRONT WIPER AND WASHER SYSTEM

- to ignition relay, located in IPDM E/R, from battery direct
- through 10 A fuse [No.1 located in fuse block (J/B)]
- to BCM terminal 38,
- through ignition relay, located in IPDM E/R
- to front wiper relay, located in IPDM E/R
- to front wiper high relay, located in IPDM E/R
- to CPU located in IPDM E/R,
- through 10 A fuse (No.84 located in IPDM E/R)
- through IPDM E/R terminal 44
- to front washer motor terminal 2.

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Ground is supplied

- to BCM terminal 52
- through grounds M30 and M66,
- to IPDM E/R terminals 38 and 60
- through grounds E17, E43 and F152,
- to combination switch terminal 12
- through grounds M30 and M66.

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LOW SPEED WIPER OPERATION

G

When the front wiper switch is in low position, BCM detect low speed wiper ON signal by BCM wiper switch reading function.

BCM sent front wiper request signal (LOW) with CAN communication line

H

- from BCM terminals 39 and 40
- to IPDM E/R terminals 48 and 49.

When the IPDM E/R receives front wiper request signal (LOW), it turns ON front wiper relay, located in the IPDM E/R, power is supplied

I

- to front wiper motor terminal 3
- through IPDM E/R terminal 21 and front wiper high relay and front wiper relay.

J

Ground is supplied

- to front wiper motor terminal 4
- through grounds E17, E43 and F152.

WW

with power and ground is supplied, front wiper motor operates at low speed.

HIGH SPEED WIPER OPERATION

L

When the front wiper switch is in HI position, BCM detect high speed wiper ON signal by BCM wiper switch reading function.

BCM sent front wiper request signal (HI) with CAN communication line

M

- from BCM terminals 39 and 40
- to IPDM E/R terminals 48 and 49.

When the IPDM E/R receives front wiper request signal (HI), it turns ON front wiper relay, located in IPDM E/R, power is supplied

- to front wiper motor terminal 2
- through IPDM E/R terminal 31 and front wiper high relay and front wiper relay.

Ground is supplied

- to front wiper motor terminal 4
- through grounds E17, E43 and F152.

with power and ground is supplied, front wiper motor operates at high speed.

INTERMITTENT OPERATION

Front wiper intermittent operation delay interval is determined from a combination of 3 switches (intermittent operation dial position 1, 2, and 3) and vehicle speed signal.

After each intermittent operation delay interval, BCM sends front wiper request signal to IPDM E/R.

FRONT WIPER AND WASHER SYSTEM

Wiper Dial Position Setting

| Wiper dial position | Intermittent operation interval | Combination switch | | |
|---------------------|---------------------------------|--|--|--|
| | | Intermittent operation dial position 1 | Intermittent operation dial position 2 | Intermittent operation dial position 3 |
| 1 | Short ↑ ↓ Long | ON | ON | ON |
| 2 | | ON | ON | OFF |
| 3 | | ON | OFF | OFF |
| 4 | | OFF | OFF | OFF |
| 5 | | OFF | OFF | ON |
| 6 | | OFF | ON | ON |
| 7 | | OFF | ON | OFF |

Example: For wiper dial position 1

Using combination switch reading function, BCM detects ON/OFF status of intermittent operation dial positions 1, 2, and 3.

When combination switch status is as listed below, BCM determines that it is wiper dial position 1.

- Intermittent operation dial position 1: ON (Continuity exists between combination switch output 3 and input 1.)
- Intermittent operation dial position 2: ON (Continuity exists between combination switch output 5 and input 1.)
- Intermittent operation dial position 3: ON (Continuity exists between combination switch output 4 and input 2.)

BCM determines front wiper intermittent operation delay interval from wiper dial position 1 and vehicle speed, and sends wiper request signal (INT) to IPDM E/R.

AUTO STOP OPERATION

With wiper switch turned OFF, wiper motor will continue to operate until wiper arms reach windshield base. When the wiper arms are not located at base of windshield with wiper switch OFF, ground is provided

- from IPDM E/R terminal 21
- to front wiper motor terminal 3, in order to continue wiper motor operation at low speed
- to IPDM E/R terminal 32
- through front wiper motor terminals 1 and 4
- through grounds E17, E43 and F152.

When the wiper arms reach base of windshield, front wiper motor terminals 1 and 4 are connected, and ground is supplied

Then the IPDM E/R sends auto stop operation signal to BCM with CAN communication line.

When the BCM receives auto-stop operation signal, BCM sends wiper stop signal to IPDM E/R with CAN communication line.

IPDM E/R stops wiper motor. Wiper motor will then stop wiper arms at the STOP position.

WASHER OPERATION

When the wiper switch is in front wiper washer position, BCM detect front wiper washer signal by BCM wiper switch reading function. (Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#))

Combination switch ground is supplied

- to front washer motor terminal 1
- through combination switch terminal 11
- to combination switch terminal 12
- through grounds M30 and M66.

With ground is supplied, front washer motor is operated.

When the BCM detects that front washer motor has operated for 0.4 seconds or longer, BCM operates front wiper motor for low speed.

When the BCM detects washer switch is OFF, low speed operation cycles approximately 2 times and stops.

MIST OPERATION

When the wiper switch is turned to the mist position, wiper low speed operation cycles once and then stops.

FRONT WIPER AND WASHER SYSTEM

For additional information about wiper operation under this condition, refer to [WW-5. "LOW SPEED WIPER OPERATION"](#).

If switch is held in mist position, low speed operation continues.

FAIL-SAFE FUNCTION

If an abnormality occurs in CAN communications, IPDM E/R holds the condition just before fail-safe status is initiated until ignition switch is turned off. (If wipers were operating in LO just before the initiation of fail-safe status, they continue to operate in LO until ignition switch is turned OFF)

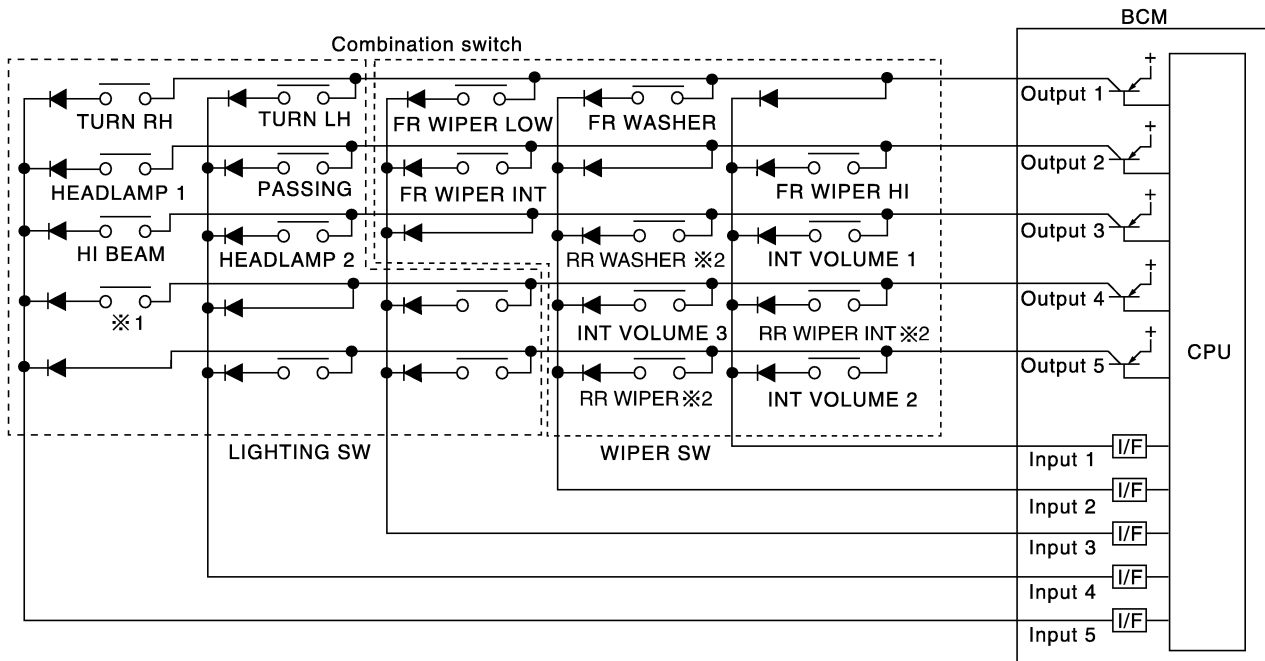
COMBINATION SWITCH READING FUNCTION

Description

- BCM reads combination switch (wiper) status, and controls related systems such as headlamps and wipers, according to the results.
- BCM reads information of a maximum of 20 switches by combining five output terminals (OUTPUT 1-5) and five input terminals (INPUT 1-5).

Operation Description

- BCM activates transistors of output terminals (OUTPUT 1-5) periodically, and allows current to flow in turn.
- If any (1 or more) switches are turned ON, circuit of output terminals (OUTPUT 1-5) and input terminals (INPUT 1-5) becomes active.
- At this time, transistors of output terminals (OUTPUT 1-5) are activated to allow current to flow. When voltage of input terminals (INPUT 1-5) corresponding to that switch changes, interface in BCM detects voltage change, and BCM determines that switch is ON.



※1 : LIGHTING SWITCH 1ST POSITION

※2 : COUPE MODELS

PKIA7241E

FRONT WIPER AND WASHER SYSTEM

BCM - Operation Table of Combination Switches

- BCM reads operation status of combination switch using combinations shown in table below.

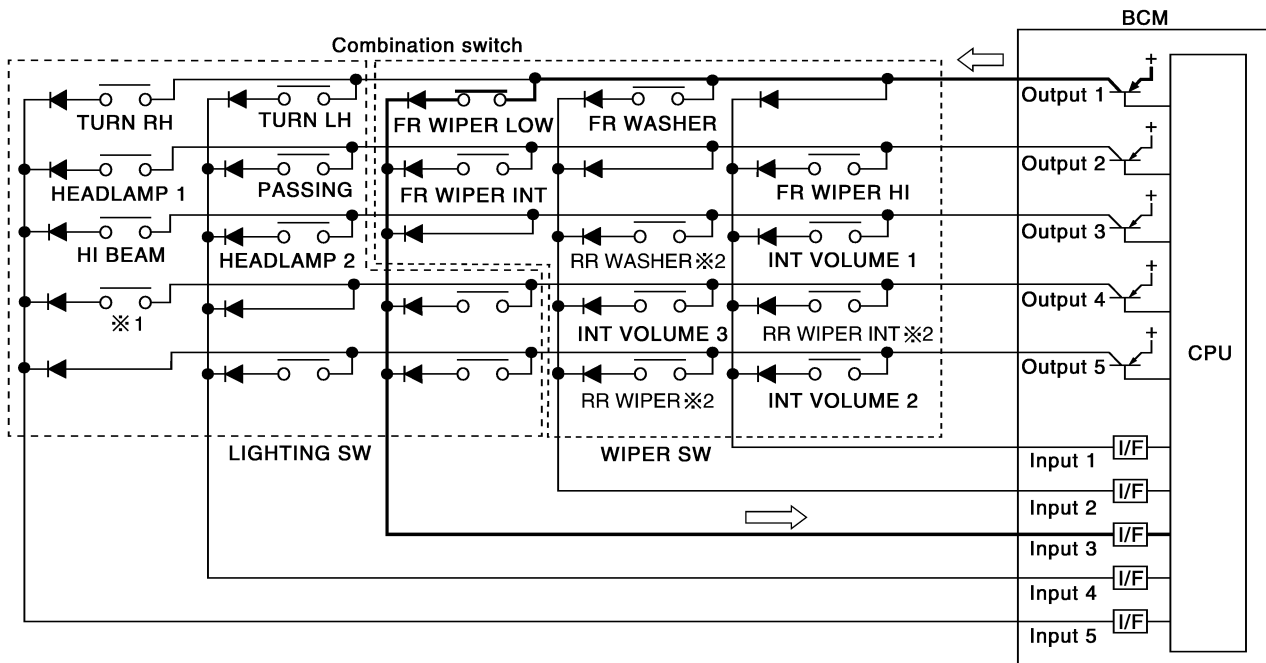
| | COMB SW OUTPUT 1 | | COMB SW OUTPUT 2 | | COMB SW OUTPUT 3 | | COMB SW OUTPUT 4 | | COMB SW OUTPUT 5 | |
|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|-----------------------|------------------|------------------|
| | ON | OFF | ON | OFF | ON | OFF | ON | OFF | ON | OFF |
| COMB SW INPUT 1 | — | — | FR WIPER HI ON | FR WIPER HI OFF | INT VOLUME 1 ON | INT VOLUME 1 OFF | RR WIPER INT ON※ | RR WIPER INT OFF※ | INT VOLUME 2 ON | INT VOLUME 2 OFF |
| COMB SW INPUT 2 | FR WASHER ON | FR WASHER OFF | — | — | RR WASHER ON※ | RR WASHER OFF※ | INT VOLUME 3 ON | INT VOLUME 3 OFF | RR WIPER ON※ | RR WIPER OFF※ |
| COMB SW INPUT 3 | FR WIPER LOW ON | FR WIPER LOW OFF | FR WIPER INT ON | FR WIPER INT OFF | — | — | — | — | — | — |
| COMB SW INPUT 4 | TURN LH ON | TURN LH OFF | PASSING ON | PASSING OFF | HEAD-LAMP 2 ON | HEAD-LAMP 2 OFF | — | — | — | — |
| COMB SW INPUT 5 | TURN RH ON | TURN RH OFF | HEAD-LAMP 1 ON | HEAD-LAMP 1 OFF | HI BEAM ON | HI BEAM OFF | LIGHTING SW (1st) ON | LIGHTING SW (1st) OFF | — | — |

※ : COUPE MODELS

PKIA7242E

Sample Operation: (When Wiper Switch Turned to LOW Position)

- When wiper switch is turned to LOW position, front wiper LOW contact in combination switch turns ON. At this time if OUTPUT 1 transistor is activated, BCM detects that voltage changes in INPUT 3.
- When BCM detects that voltage changes in INPUT 3 while OUTPUT 1 transistor is ON, it judges that front wiper switch is in LOW position. Then BCM sends front wiper request signal (LO) to IPDM E/R using CAN communication.
- If BCM detects that voltage changes in INPUT 3 when OUTPUT 1 transistor is activated again, it recognizes that wiper switch is still in LOW position.



※ 1 : LIGHTING SWITCH 1ST POSITION

※ 2 : COUPE MODELS

PKIA7243E

FRONT WIPER AND WASHER SYSTEM

NOTE:

Each OUTPUT terminal transistor is activated at 10 ms intervals. Therefore after switch is turned ON, electrical loads are activated with time delay. But this time delay is so short that it cannot be detected by human senses.

Operation Mode

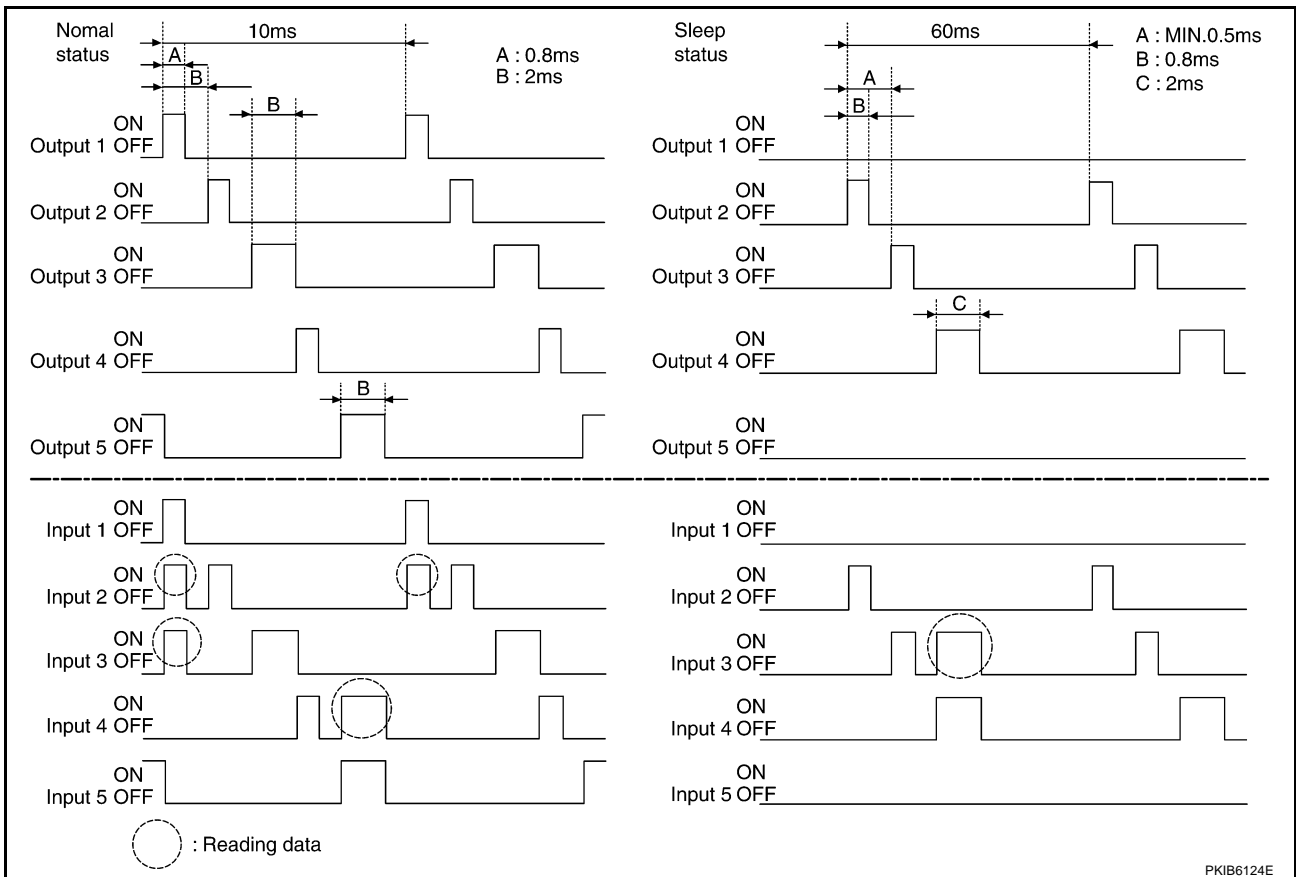
Combination switch reading function has operation modes shown below.

1. Normal status

- When BCM is not in sleep status, OUTPUT terminals (1-5) each turn ON-OFF every 10 ms.

2. Sleep status

- When BCM is in sleep status, transistors of OUTPUT (1 and 5) stop the output, and BCM enters low current consumption mode. OUTPUT (2, 3, and 4) turn ON-OFF every 60 ms, and only input from light switch system is accepted.



CAN Communication System Description

AKS000Y8

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

AKS003M9

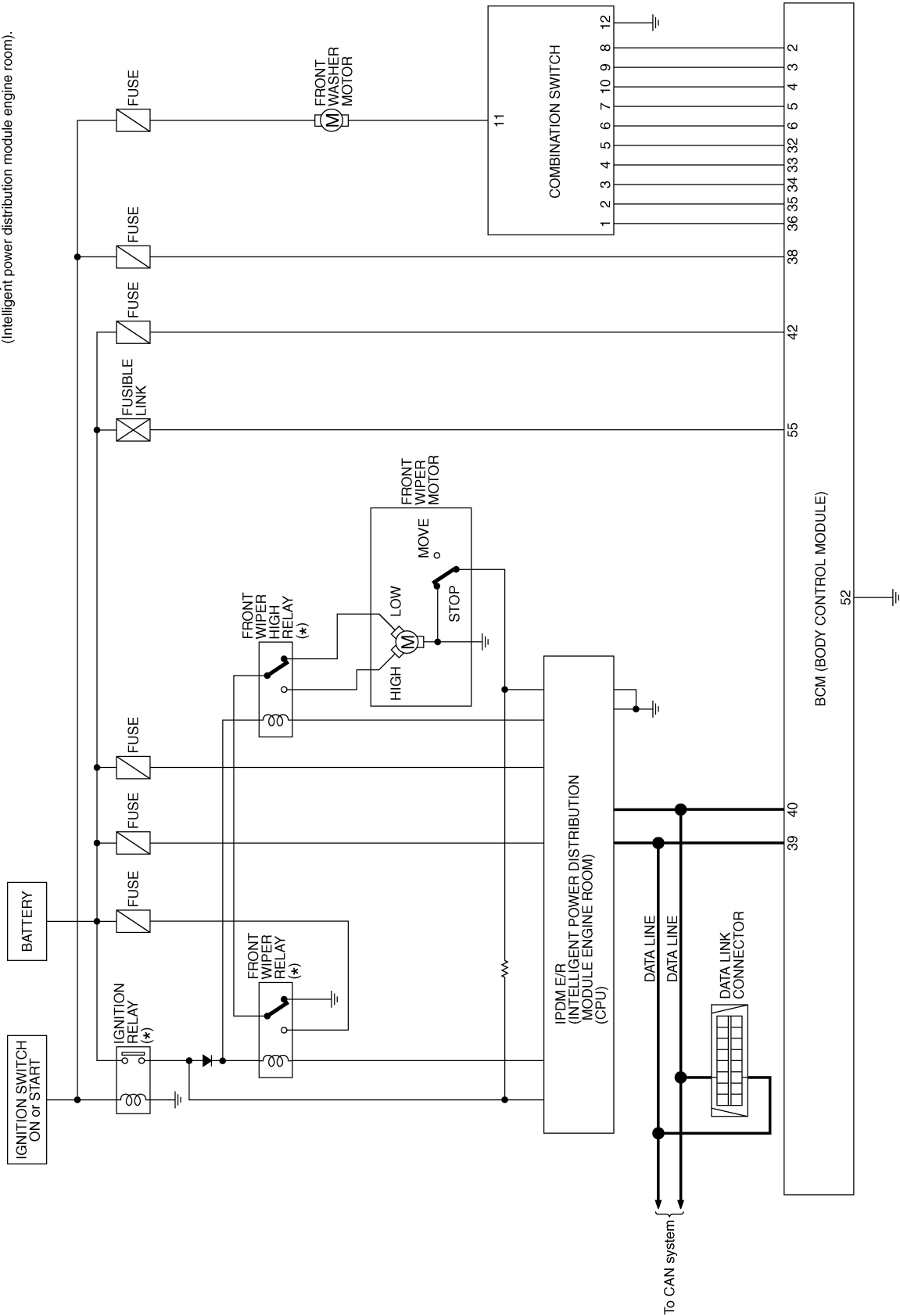
Refer to [LAN-21, "CAN Communication Unit"](#) .

FRONT WIPER AND WASHER SYSTEM

Schematic

AKS000Y9

* : This relay is built into the IPDM E/R
(Intelligent power distribution module engine room).



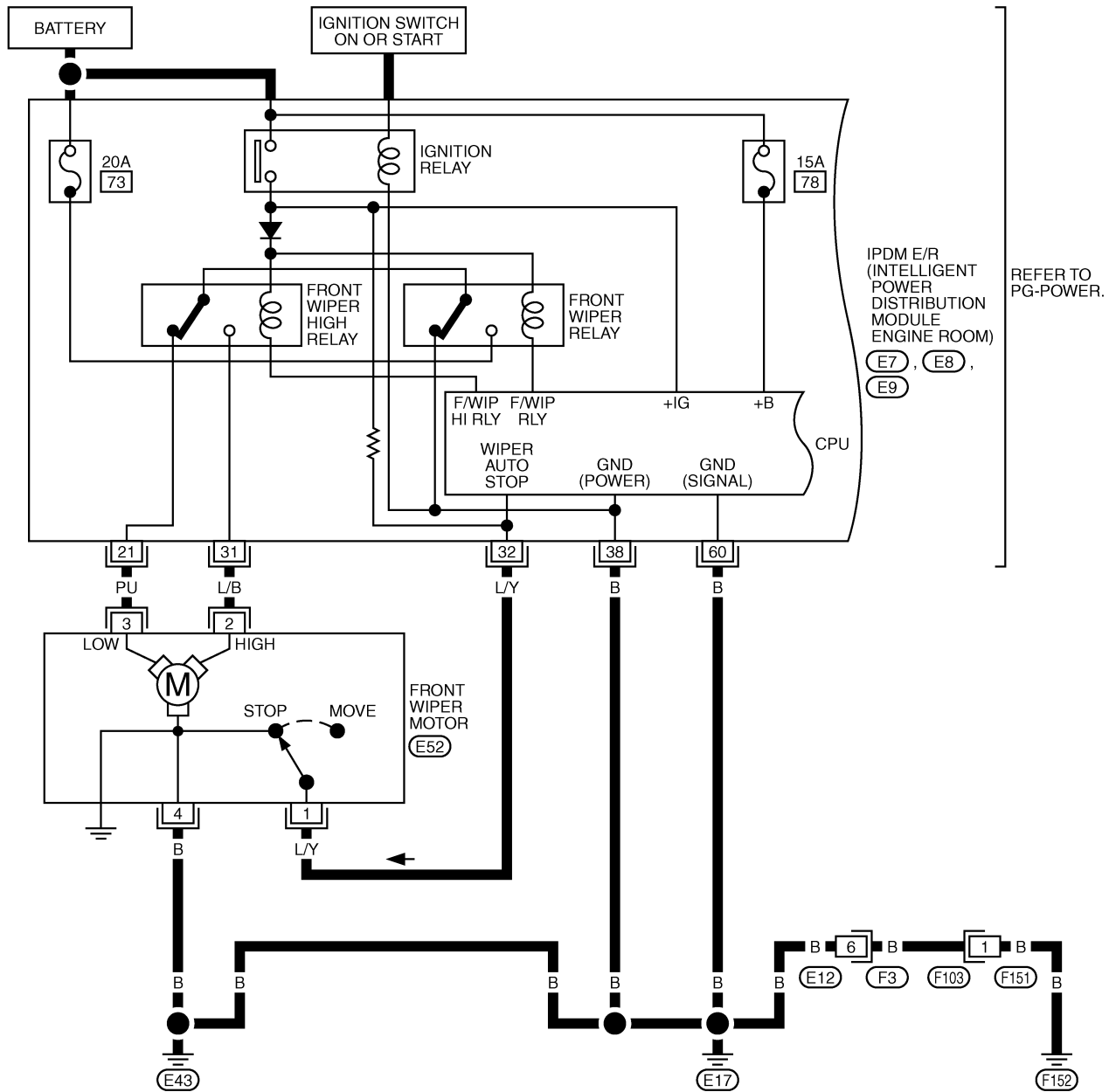
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FRONT WIPER AND WASHER SYSTEM

Wiring Diagram — WIPER —

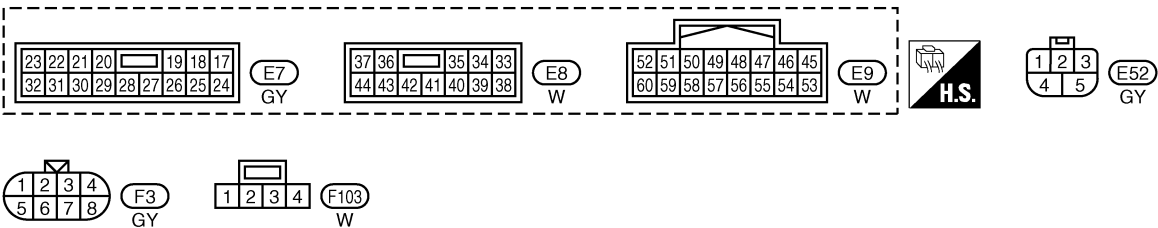
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WW-WIPER-01



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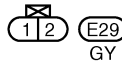
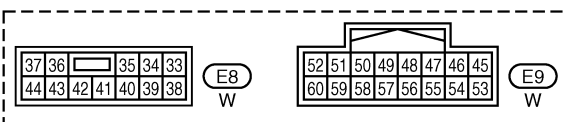
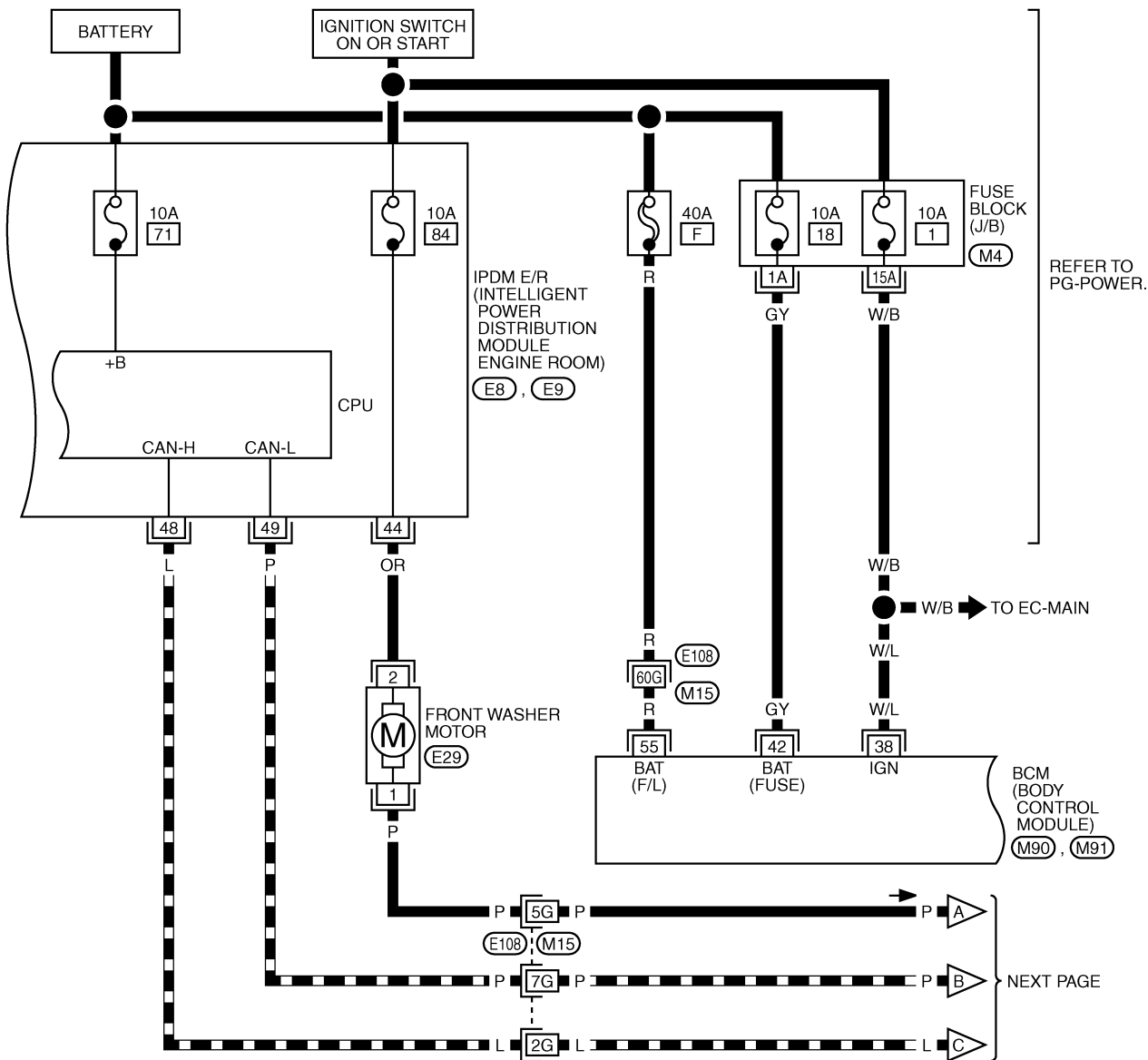


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FRONT WIPER AND WASHER SYSTEM

WW-WIPER-02

▬ : DATA LINE



REFER TO THE FOLLOWING.

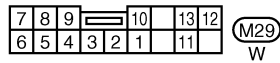
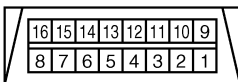
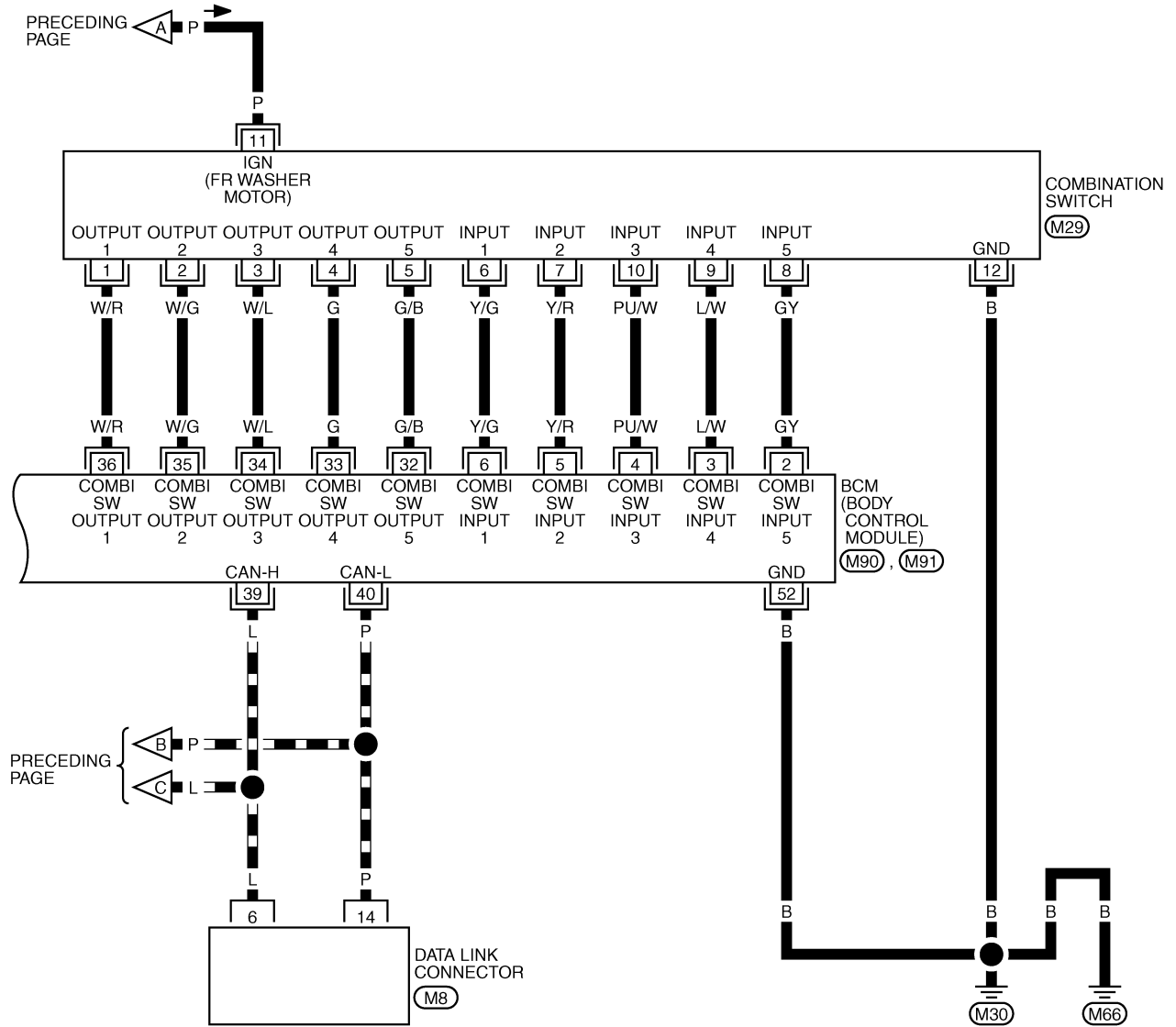
- (E108) -SUPER MULTIPLE JUNCTION (SMJ)
- (M4) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M90), (M91) -ELECTRICAL UNITS

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FRONT WIPER AND WASHER SYSTEM

WW-WIPER-03

▬ : DATA LINE



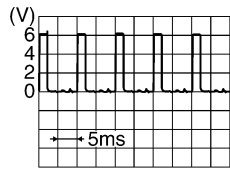
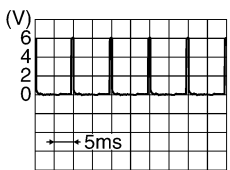
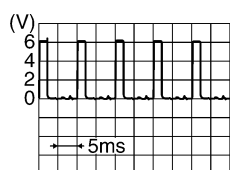
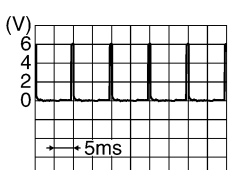


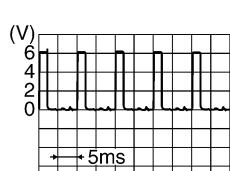
REFER TO THE FOLLOWING.
 (M90), (M91) -ELECTRICAL
 UNITS

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FRONT WIPER AND WASHER SYSTEM

Terminals and Reference Values for BCM

AKS00APG

| Terminal No. | Wire color | Signal name | Measuring condition | | Reference value |
|--------------|------------|-----------------------------|---------------------|---|---|
| | | | Ignition switch | Operation or condition | |
| 2 | GY | Combination switch input 5 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5291E</p> |
| 3 | L/W | Combination switch input 4 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5292E</p> |
| 4 | PU/W | Combination switch input 3 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5291E</p> |
| 5 | Y/R | Combination switch input 2 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5292E</p> |
| 6 | Y/G | Combination switch input 1 | ON | | |
| 32 | G/B | Combination switch output 5 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5291E</p> |
| 33 | G | Combination switch output 4 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5292E</p> |
| 34 | W/L | Combination switch output 3 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5291E</p> |

FRONT WIPER AND WASHER SYSTEM

| Terminal No. | Wire color | Signal name | Measuring condition | | Reference value |
|--------------|------------|-----------------------------|---------------------|---|---|
| | | | Ignition switch | Operation or condition | |
| 35 | W/G | Combination switch output 2 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <small>SKIA5292E</small> |
| 36 | W/R | Combination switch output 1 | | | |
| 38 | W/L | Ignition switch (ON) | ON | — | Battery voltage |
| 39 | L | CAN- H | — | — | — |
| 40 | P | CAN- L | — | — | — |
| 42 | GY | Battery power supply | OFF | — | Battery voltage |
| 52 | B | Ground | ON | — | Approx. 0V |
| 55 | R | Battery power supply | OFF | — | Battery voltage |

Terminals and Reference Values for IPDM E/R

AKS00APH

| Terminal No. | Wire color | Signal name | Measuring condition | | Reference value | |
|--------------|------------|---------------------------|---------------------|------------------------|-----------------|-----------------|
| | | | Ignition switch | Operation or condition | | |
| 21 | PU | Low speed signal | ON | Wiper switch | OFF | Approx. 0V |
| | | | | | LOW | Battery voltage |
| 31 | L/B | High speed signal | ON | Wiper switch | OFF | Approx. 0V |
| | | | | | HI | Battery voltage |
| 32 | L/Y | Wiper auto - stop signal | ON | Wiper operating | | Battery voltage |
| | | | | Wiper stopped | | Approx. 0V |
| 38 | B | Ground | ON | — | Approx. 0V | |
| 44 | OR | Washer motor power supply | ON | — | Battery voltage | |
| 48 | L | CAN- H | — | — | — | |
| 49 | P | CAN- L | — | — | — | |
| 60 | B | Ground | ON | — | Approx. 0V | |

How to Proceed With Trouble Diagnosis

AKS00API

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-4, "System Description"](#) .
3. Perform preliminary check. Refer to [WW-15, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front wiper and washer operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

AKS00APJ

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSE

- Check for blown fuses.

| Unit | Power source | Fuse and fusible link No. |
|--|-----------------------------|---------------------------|
| Front washer motor | Ignition switch ON or START | 84 |
| Front wiper motor, front wiper relay, front wiper HI relay | Battery | 73 |

FRONT WIPER AND WASHER SYSTEM

| Unit | Power source | Fuse and fusible link No. |
|------|-----------------------------|---------------------------|
| BCM | Battery | F |
| | | 18 |
| | Ignition switch ON or START | 1 |

Refer to [WW-11, "Wiring Diagram — WIPER —"](#).

OK or NG

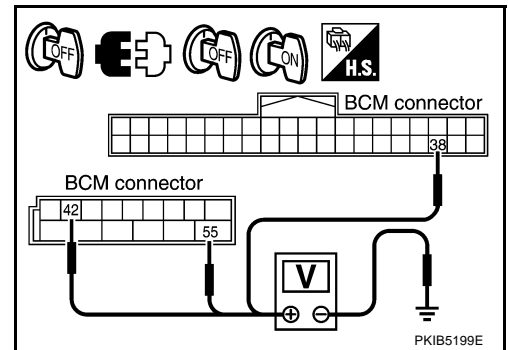
OK >> GO TO 2

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse, Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#).

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector terminal and ground.

| Terminal (+) | | (-) | Ignition switch position | |
|--------------|-----------------------|--------|--------------------------|-----------------|
| Connector | Terminal (Wire color) | | OFF | ON |
| M91 | 42 (GY) | Ground | Battery voltage | Battery voltage |
| M91 | 55 (R) | | Battery voltage | Battery voltage |
| M90 | 38 (W/L) | | Approx. 0V | Battery voltage |



OK or NG

OK >> GO TO 3.

NG >> Check harness for open or short between fuse, fusible link and BCM.

3. CHECK GROUND CIRCUIT

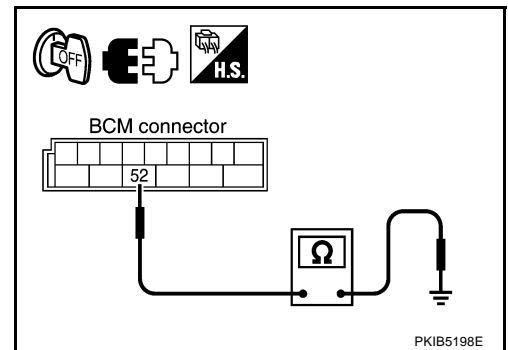
Check continuity between BCM harness connector and ground.

| Terminal | | Ground | Continuity |
|-----------|-----------------------|--------|------------|
| Connector | Terminal (Wire color) | | |
| M91 | 52 (B) | | Yes |

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



FRONT WIPER AND WASHER SYSTEM

CONSULT-II Functions (BCM)

AKS00APK

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

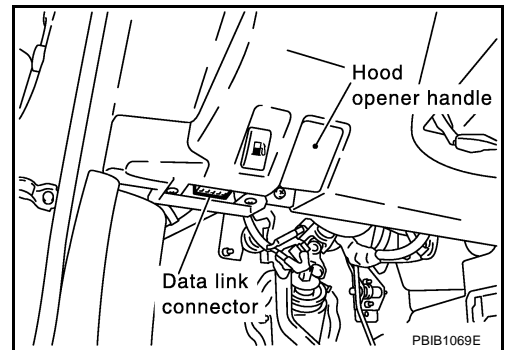
| BCM diagnosis position | Diagnosis mode | Description |
|------------------------|-----------------------|--|
| WIPER | WORK SUPPORT | Changes the setting for each function. |
| | DATA MONITOR | Displays BCM input data in real time. |
| | ACTIVE TEST | Device operation can be checked by applying a drive signal to device. |
| BCM | SELF-DIAG RESULTS | BCM performs self-diagnosis of CAN communication. |
| | CAN DIAG SUPPORT MNTR | The result of transmit/receive diagnosis of CAN communication can be read. |

CONSULT-II BASIC OPERATION

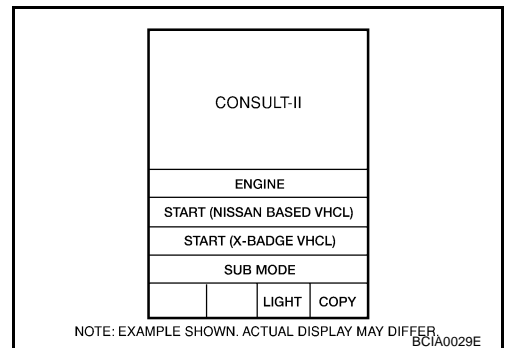
CAUTION:

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.

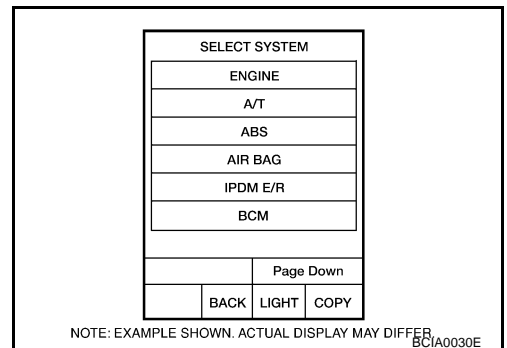
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

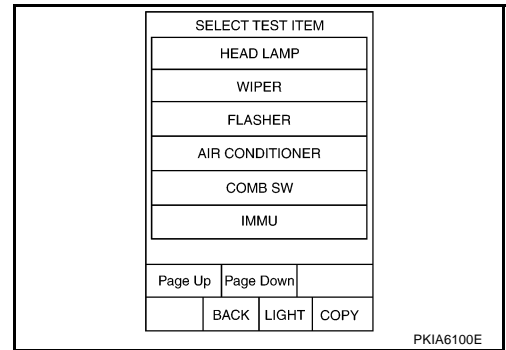


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not displayed, print "SELECT SYSTEM" screen, then refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#)



FRONT WIPER AND WASHER SYSTEM

4. Touch "WIPER" on "SELET TEST ITEM" screen.



WORK SUPPORT

Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch "WIPER SPEED SETTING" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SETT".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Display Item List

| Item | Description | CONSULT-II | Factory setting |
|---------------------|--|------------|-----------------|
| WIPER SPEED SETTING | Vehicle speed sousing type wiper control mode can be changed in this mode. Vehicle speed sousing type wiper control mode between two ON/OFF. | ON | × |
| | | OFF | — |

DATA MONITOR

Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

| | |
|---------------------|---------------------------------|
| ALL SIGNALS | Monitors all the signals. |
| SELECTION FROM MENU | Selects items and monitor them. |

4. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
5. Touch "START".
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

| Monitor item | Contents |
|------------------------|---|
| IGN ON SW "ON/OFF" | Displays "ignition switch ON (ON)/Other OFF or ACC (OFF)" status as judged from ignition switch signal. |
| IGN SW CAN "ON/OFF" | Displays "ignition switch ON (ON)/Other OFF or ACC (OFF)" status as judged from CAN communication signal. |
| FR WIPER HI "ON/OFF" | Displays "FRONT WIPER HI (ON)/Other (OFF)" status as judged from wiper switch signal. |
| FR WIPER LOW "ON/OFF" | Displays "FRONT WIPER LOW (ON)/Other (OFF)" status as judged from wiper switch signal. |
| FR WIPER INT "ON/OFF" | Displays "FRONT WIPER INT (ON)/Other (OFF)" status as judged from wiper switch signal. |
| FR WASHER SW "ON/OFF" | Displays "FRONT WASHER Switch (ON)/Other (OFF)" status as judged from wiper switch signal. |
| INT VOLUME "1 - 7" | Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal. |
| FR WIPER STOP "ON/OFF" | Displays "Stopped (ON)/Operating (OFF)" status as judged from auto-stop signal. |

FRONT WIPER AND WASHER SYSTEM

| Monitor item | | Contents |
|---------------------------------|----------|---|
| VEHICLE SPEED | "km/h" | Displays vehicle speed status as judged from vehicle speed signal. |
| RR WIPER ON ^{NOTE 1} | "ON/OFF" | Displays "Rear Wiper ON (ON)/Other (OFF)" status as judged from wiper switch signal. |
| RR WIPER INT ^{NOTE 1} | "ON/OFF" | Displays "Rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal. |
| RR WASHER SW ^{NOTE 1} | "ON/OFF" | Displays "Rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal. |
| RR WIPER STOP ^{NOTE 1} | "ON/OFF" | Displays "Rear Wiper Stop (ON)/Other (OFF)" status, as judged from wiper switch signal. |
| RR WIPER STP2 ^{NOTE 2} | "OFF" | — |

NOTE:

1. Coupe models
2. This item is displayed, but cannot be monitored.

ACTIVE TEST

Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

| Test item | Display on CONSULT-II screen | Description |
|-----------------------------------|------------------------------|---|
| Front wiper output | FR WIPER | With a certain operation (OFF, HI, LO, INT), front wiper can be operated. |
| Rear wiper output ^{NOTE} | RR WIPER | Rear wiper can be operated by any ON-OFF operation |

NOTE:

Coupe models

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



FRONT WIPER AND WASHER SYSTEM

AKS00APL

CONSULT-II Functions (IPDM E/R)

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

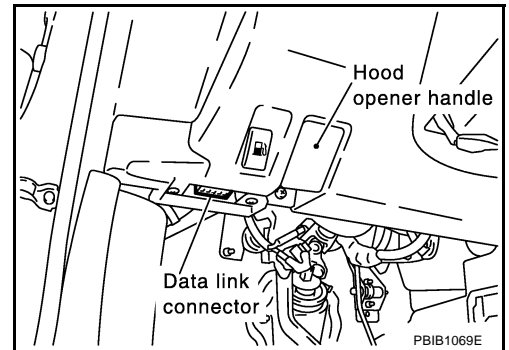
| Diagnosis Mode | Description |
|-----------------------|--|
| SELF-DIAG RESULTS | Refer to PG-19. "SELF-DIAG RESULTS" . |
| DATA MONITOR | The input/output data of IPDM E/R is displayed in real time. |
| CAN DIAG SUPPORT MNTR | The result of transmit/receive diagnosis of CAN communication can be read. |
| ACTIVE TEST | IPDM E/R sends a drive signal to electronic components to check their operation. |

CONSULT-II BASIC OPERATION

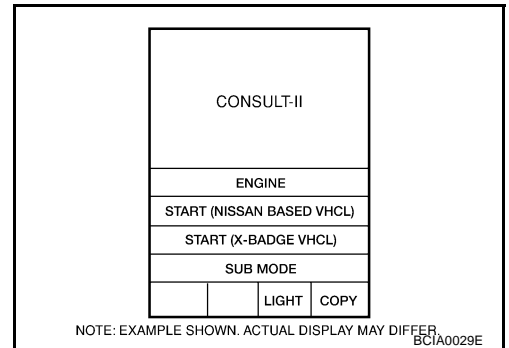
CAUTION:

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.

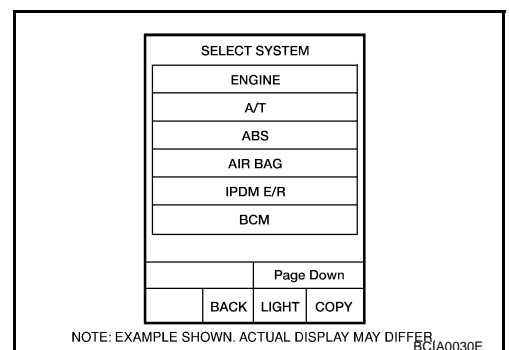
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

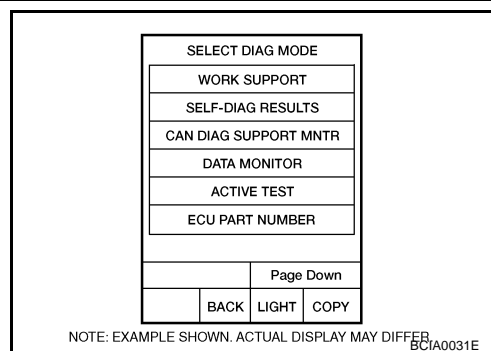


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, print "SELECT SYSTEM" screen, then refer to [GI-39. "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



FRONT WIPER AND WASHER SYSTEM

- Select the desired part to be diagnosed on "SELECT DIAG MODE" screen.



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

DATA MONITOR

Operation Procedure

- Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
- Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

| | |
|---------------------|----------------------------------|
| ALL SIGNALS | Monitors all items. |
| MAIN SIGNALS | Monitor the predetermined item. |
| SELECTION FROM MENU | Selects items and monitors them. |

- Touch the required monitoring item on "SELECTION FROM MENU". In "ALL SIGNALS", all items are monitored. In "MAIN SIGNALS", predetermined items are monitored.
- Touch "START".
- Touch "RECORD" while monitoring to record the status of the item being monitored. To stop recording, touch "STOP".

All Signals, Main Signals, Selection From Menu

| Item name | CONSULT-II screen display | Display or unit | Monitor item selection | | | Description |
|------------------|---------------------------|------------------|------------------------|--------------|---------------------|------------------------------|
| | | | ALL SIGNALS | MAIN SIGNALS | SELECTION FROM MENU | |
| FR wiper request | FR WIP REQ | STOP/1LOW/LOW/Hi | × | × | × | Signal status input from BCM |
| Wiper auto stop | WIP AUTO STOP | ACT P/STOP P | × | × | × | Output status of IPDM E/R |
| Wiper protection | WIP PROT | OFF/Block | × | × | × | Control status of IPDM E/R |

NOTE:

Perform monitoring of IPDM E/R data with ignition switch ON. When ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

- Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- Touch item to be tested, and check operation.
- Touch "START".
- Touch "STOP" while testing to stop the operation.

| Test item | CONSULT-II screen display | Description |
|-----------------------------|---------------------------|---|
| Front wiper (HI, LO) output | FR WIPER | With a certain operation (OFF, HI ON, LO ON), front wiper relay (Lo, Hi) can be operated. |

FRONT WIPER AND WASHER SYSTEM

AKS00APM

Front Wiper Does Not Operate

CAUTION:

- During IPDM E/R fail-safe control, front wipers may not operate. Refer to [PG-16, "CAN COMMUNICATION LINE CONTROL"](#) in "PG IPDM E/R" to make sure that it is not in fail-safe status.

1. ACTIVE TEST

With CONSULT-II

- Select "IPDM E/R" by CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
- Touch "LO" or "HI" screen.

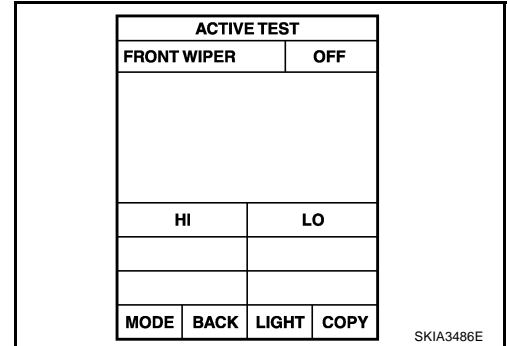
Without CONSULT-II

Start up auto active test. Refer to [PG-22, "Auto Active Test"](#).

Does front wiper operate normally?

YES >> GO TO 5.

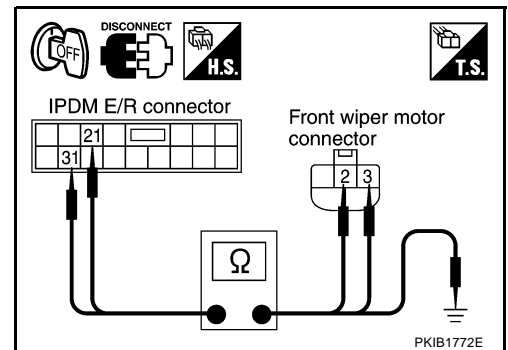
NO >> GO TO 2.



2. CHECK FRONT WIPER CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R connector and front wiper motor connector.
- Check continuity between IPDM E/R harness connector and front wiper motor harness connector terminal.

| Terminal | | | | Continuity |
|-----------|-----------------------|-------------------|-----------------------|------------|
| IPDM E/R | | Front wiper motor | | |
| Connector | Terminal (Wire color) | Connector | Terminal (Wire color) | |
| E7 | 21 (PU) | E52 | 3 (PU) | Yes |
| | 31 (L/B) | | 2 (L/B) | |



- Check continuity between IPDM E/R harness connector terminal and Ground.

| Terminal | | | Continuity |
|-----------|-----------------------|--------|------------|
| IPDM E/R | | Ground | |
| Connector | Terminal (Wire color) | | |
| E7 | 21 (PU) | Ground | No |
| | 31 (L/B) | | |

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

FRONT WIPER AND WASHER SYSTEM

3. CHECK GROUND CIRCUIT

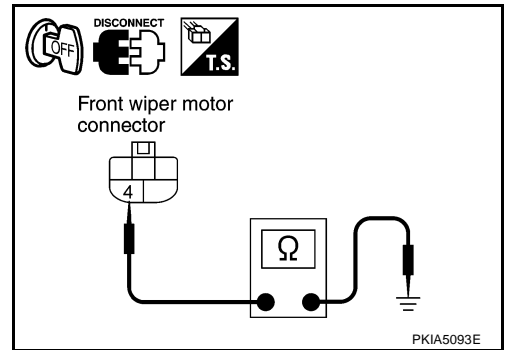
Check continuity between front wiper motor harness connector E52 terminal 4 (B) and ground.

4 (B) – Ground : Continuity should exist.

OK or NG

OK >> GO TO 4.

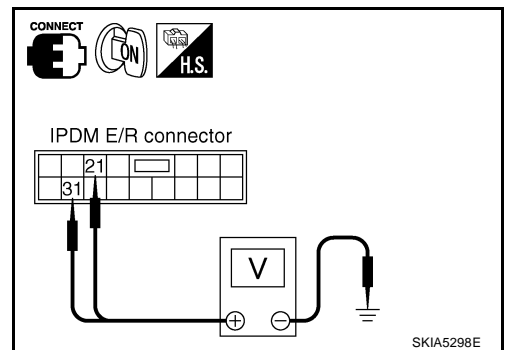
NG >> Repair harness or connector.



4. CHECK IPDM E/R

Ⓜ With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" by CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "LO" or "HI" screen.
5. Check voltage between IPDM E/R harness connector and ground while front wiper (HI, LO) is operating.



| Terminal | | Condition | Voltage |
|--------------|-----------------------|--------------|-----------------|
| IPDM E/R (+) | | | |
| Connector | Terminal (Wire color) | (-) | |
| E7 | 21 (PU) | Stopped | Approx. 0V |
| | | LO operation | Battery voltage |
| | 31 (L/B) | Stopped | Approx. 0V |
| | | HI operation | Battery voltage |

ⓧ Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test. Refer to [PG-22, "Auto Active Test"](#).
3. Check voltage between IPDM E/R harness connector and ground while front wiper (HI, LO) is operating.

| Terminal | | Condition | Voltage |
|--------------|-----------------------|--------------|-----------------|
| IPDM E/R (+) | | | |
| Connector | Terminal (Wire color) | (-) | |
| E7 | 21 (PU) | Stopped | Approx. 0V |
| | | LO operation | Battery voltage |
| | 31 (L/B) | Stopped | Approx. 0V |
| | | HI operation | Battery voltage |

OK or NG

OK >> Replace front wiper motor.

NG >> Replace IPDM E/R.

FRONT WIPER AND WASHER SYSTEM

5. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

☑ With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "FR WIPER INT", "FR WIPER LOW", and "FR WIPER HI" turn ON-OFF according to wiper switch operation.

☒ Without CONSULT-II

Refer to [LT-173, "Combination Switch Inspection"](#).

OK or NG

OK >> GO TO 6.

NG >> Check combination switch (wiper switch). Refer to [LT-173, "Combination Switch Inspection"](#).

| DATA MONITOR | | | |
|---------------|----------|-----------|------|
| MONITOR | | | |
| IGN ON SW | ON | | |
| IGN SW CAN | ON | | |
| FR WIPER HI | OFF | | |
| FR WIPER LOW | OFF | | |
| FR WIPER INT | OFF | | |
| FR WASHER SW | OFF | | |
| INT VOLUME | 7 | | |
| FR WIPER STOP | ON | | |
| VEHICLE SPEED | 0.0 km/h | | |
| | | Page Down | |
| | | RECORD | |
| MODE | BACK | LIGHT | COPE |

PKIB0110E

6. CHECK CIRCUIT BETWEEN IPDM E/R AND BCM

Select "BCM" on CONSULT-II, and perform self-diagnosis for "BCM".

Displayed self-diagnosis results

NO DTC>>Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).

CAN COMM CIRCUIT>>Check CAN communication line of BCM. Refer to [BCS-17, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

| SELF-DIAG RESULTS | | | |
|--------------------------|------|-------|------|
| DTC RESULTS | | TIME | |
| CAN COMM CIRCUIT [U1000] | | | |
| | | | |
| | | | |
| | | | |
| ERASE | | PRINT | |
| MODE | BACK | LIGHT | COPY |

PKIA7627E

Front Wiper Does Not Return to Stop Position

1. CHECK FRONT WIPER STOP SIGNAL

☑ With CONSULT-II

Select "IPDM E/R" on CONSULT-II. With "DATA MONITOR", make sure that "WIP AUTO STOP" turns "ACT P" - "STOP P" linked with wiper operation.

☒ Without CONSULT-II

GO TO 2.

OK or NG

OK >> Replace IPDM E/R.

NG >> GO TO 2.

| DATA MONITOR | | | |
|---------------|--------|--------|------|
| MONITOR | | | |
| WIP AUTO STOP | STOP P | | |
| | | | |
| | | RECORD | |
| MODE | BACK | LIGHT | COPY |

PKIA7614E

2. CHECK IPDM E/R

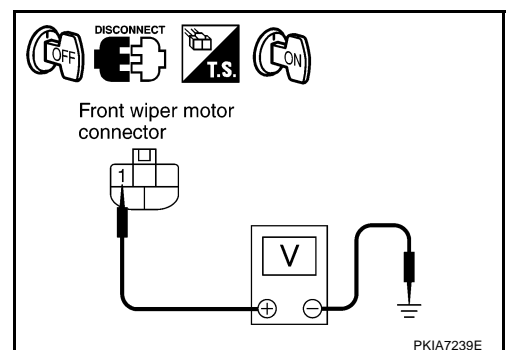
1. Turn ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn ignition switch ON.
4. Check voltage between front wiper harness connector E52 terminal 1 (L/Y) and Ground.

1 (L/Y) – Ground : Battery voltage.

OK or NG

OK >> GO TO 4.

NG >> GO TO 3.



FRONT WIPER AND WASHER SYSTEM

3. CHECK FRONT WIPER AUTO STOP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 32 (L/Y) and front wiper motor harness connector E52 terminal 1 (L/Y).

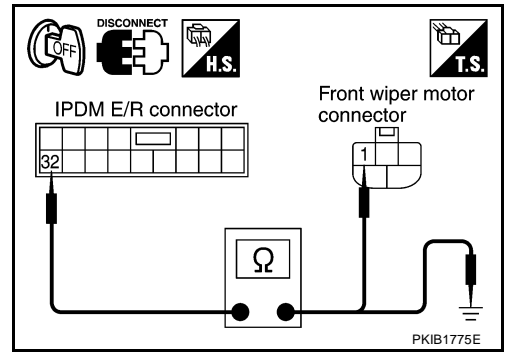
32 (L/Y) – 1 (L/Y) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 32(L/Y) and Ground.

32 (L/Y) – Ground : Continuity should not exist.

OK or NG

- OK >> Replace IPDM E/R.
 NG >> Repair harness or connector.



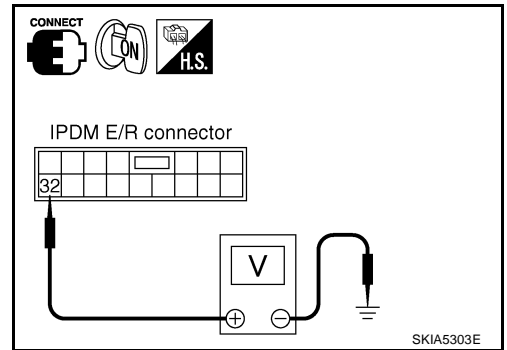
4. CHECK IPDM E/R

1. Connect IPDM E/R connector and front wiper motor connector.
2. Turn ignition switch ON.
3. Check voltage between IPDM E/R harness connector and ground while front wiper motor is stopped and while it is operating.

| Terminal | | (-) | Condition | Voltage |
|--------------|-----------------------|--------|-----------------|-----------------|
| IPDM E/R (+) | | | | |
| Connector | Terminal (Wire color) | | | |
| E7 | 32 (L/Y) | Ground | Wiper stopped | Approx. 0V |
| | | | Wiper operating | Battery voltage |

OK or NG

- OK >> Replace IPDM E/R.
 NG >> Replace front wiper motor.



Only Front Wiper Low Does Not Operate

AKS00APO

1. ACTIVE TEST

Ⓜ With CONSULT-II

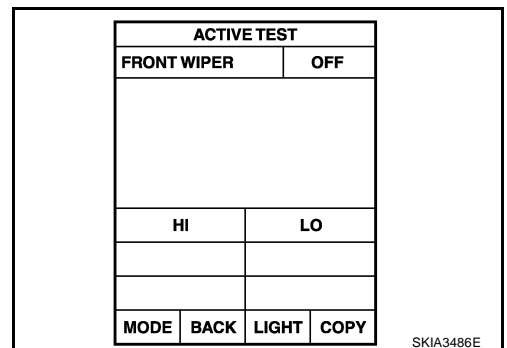
1. Select "IPDM E/R" by CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "LO" screen.

ⓧ Without CONSULT-II

Start up auto active test. Refer to [PG-22, "Auto Active Test"](#)

Does front wiper operate normally?

- YES >> Refer to [LT-173, "Combination Switch Inspection"](#) .
 NO >> GO TO 2.



FRONT WIPER AND WASHER SYSTEM

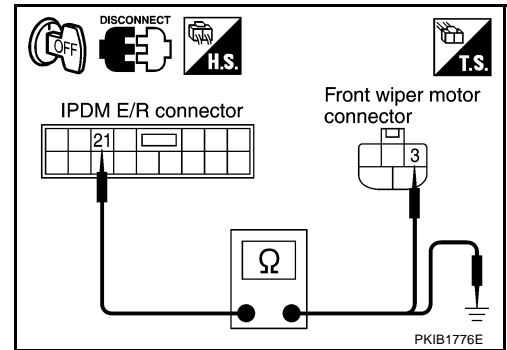
2. CHECK FRONT WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 21 (PU) and front wiper motor harness E52 connector terminal 3 (PU).

21 (PU) – 3 (PU) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 21 (PU) and ground.

21 (PU) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.

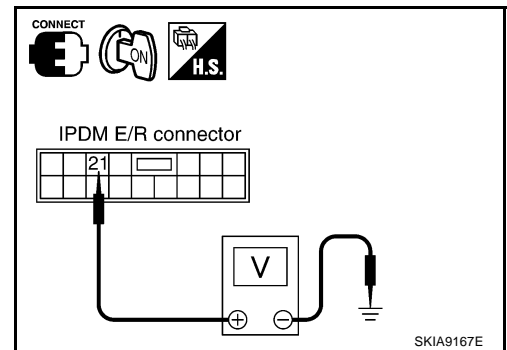
NG >> Repair harness or connector.

3. CHECK IPDM E/R

With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" by CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "LO" screen.
5. Check voltage between IPDM E/R harness connector E7 terminal 21 (PU) and ground while front wiper LO is operating.

21 (PU) – Ground : Battery voltage.



Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test. Refer to [PG-22, "Auto Active Test"](#).
3. Check voltage between IPDM E/R harness connector E7 terminal 21 (PU) and ground while front wiper LO is operating.

21 (PU) – Ground : Battery voltage.

OK or NG

OK >> Replace front wiper motor.

NG >> Replace IPDM E/R.

Only Front Wiper Hi Does Not Operate

AKS00APP

1. ACTIVE TEST

With CONSULT-II

1. Select "IPDM E/R" by CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "HI" screen.

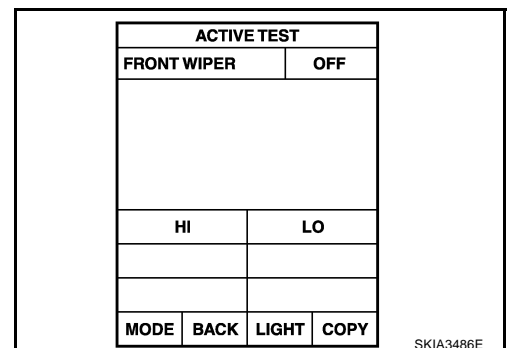
Without CONSULT-II

Start up auto active test. Refer to [PG-22, "Auto Active Test"](#)

Does front wiper operate normally?

YES >> Refer to [LT-173, "Combination Switch Inspection"](#).

NO >> GO TO 2.



SKIA3486E

FRONT WIPER AND WASHER SYSTEM

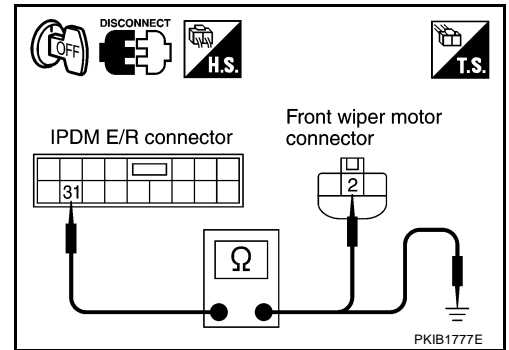
2. CHECK FRONT WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 31 (L/B) and front wiper motor harness E52 connector terminal 2 (L/B).

31 (L/B) – 2 (L/B) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 31(L/B) and ground.

31 (L/B) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK IPDM E/R

Ⓜ With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" by CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
4. Touch "HI" screen.
5. Check voltage between IPDM E/R harness connector E7 terminal 31 (L/B) and ground while front wiper HI is operating.

31 (L/B) - Ground : Battery voltage.

⊗ Without CONSULT-II

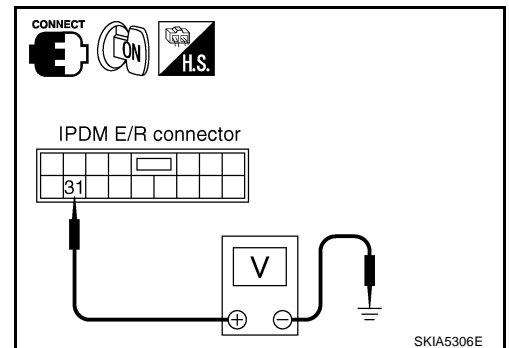
1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test. Refer to [PG-22, "Auto Active Test"](#).
3. Check voltage between IPDM E/R harness connector E7 terminal 31 (L/B) and ground while front wiper HI is operating.

31 (L/B) - Ground : Battery voltage.

OK or NG

OK >> Replace front wiper motor.

NG >> Replace IPDM E/R.



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FRONT WIPER AND WASHER SYSTEM

AKS00APQ

Only Front Wiper Intermittent Does Not Operate

1. CHECK COMBINATION SWITCH

With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "FR WIPER INT", turn ON-OFF according to wiper switch operation.

Without CONSULT-II

Refer to [LT-173, "Combination Switch Inspection"](#) .

OK or NG

OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#) .

NG >> Check combination switch (wiper switch) Refer to [LT-173, "Combination Switch Inspection"](#) .

| DATA MONITOR | | | |
|---------------|----------|-----------|------|
| MONITOR | | | |
| IGN ON SW | ON | | |
| IGN SW CAN | ON | | |
| FR WIPER HI | OFF | | |
| FR WIPER LOW | OFF | | |
| FR WIPER INT | OFF | | |
| FR WASHER SW | OFF | | |
| INT VOLUME | 7 | | |
| FR WIPER STOP | ON | | |
| VEHICLE SPEED | 0.0 km/h | | |
| | | Page Down | |
| | | RECORD | |
| MODE | BACK | LIGHT | COPE |

PKIB0110E

Front Wiper Interval Time Is Not Controlled by Vehicle Speed

AKS00APR

1. CHECK FUNCTION OF COMBINATION METER

Confirm that speedometer operates normally.

Does front wiper operate normally?

YES >> GO TO 2.

NO >> Combination meter vehicle speed system malfunction. Refer to [DI-17, "Vehicle Speed Signal Inspection"](#) .

2. CHECK CAN COMMUNICATION BETWEEN BCM AND COMBINATION METER

Select "BCM" on CONSULT-II, and perform self-diagnosis for "BCM".

Displayed self-diagnosis results

NO DTC>>Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#) .

CAN COMM CIRCUIT>>Check CAN communication line of BCM. Refer to [BCS-17, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

| SELF-DIAG RESULTS | | | |
|--------------------------|------|-------|------|
| DTC RESULTS | | TIME | |
| CAN COMM CIRCUIT [U1000] | | | |
| | | | |
| | | | |
| | | | |
| ERASE | | PRINT | |
| MODE | BACK | LIGHT | COPY |

PKIA7627E

Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted

AKS00APS

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "INT VOLUME", changes in order form 1 to 7 according to wiper switch operation.

Without CONSULT-II

Refer to [LT-173, "Combination Switch Inspection"](#) .

OK or NG

OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#) .

NG >> Check combination switch (wiper switch). Refer to [LT-173, "Combination Switch Inspection"](#) .

| DATA MONITOR | | | |
|---------------|----------|-----------|------|
| MONITOR | | | |
| IGN ON SW | ON | | |
| IGN SW CAN | ON | | |
| FR WIPER HI | OFF | | |
| FR WIPER LOW | OFF | | |
| FR WIPER INT | OFF | | |
| FR WASHER SW | OFF | | |
| INT VOLUME | 7 | | |
| FR WIPER STOP | ON | | |
| VEHICLE SPEED | 0.0 km/h | | |
| | | Page Down | |
| | | RECORD | |
| MODE | BACK | LIGHT | COPE |

PKIB0110E

FRONT WIPER AND WASHER SYSTEM

Wiper Does Not Wipe When Front Washer Operates

AKS00APT

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

① With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "FR WASHER SW" turn ON-OFF according to front wiper switch operation.

⊗ Without CONSULT-II

Refer to [LT-173, "Combination Switch Inspection"](#).

OK or NG

- OK >> Replace BCM Refer to [BCS-18, "Removal and Installation of BCM"](#).
- NG >> Check front wiper switch. Refer to [LT-173, "Combination Switch Inspection"](#).

| DATA MONITOR | | | |
|---------------|----------|-----------|------|
| MONITOR | | | |
| IGN ON SW | ON | | |
| IGN SW CAN | ON | | |
| FR WIPER HI | OFF | | |
| FR WIPER LOW | OFF | | |
| FR WIPER INT | OFF | | |
| FR WASHER SW | OFF | | |
| INT VOLUME | 7 | | |
| FR WIPER STOP | ON | | |
| VEHICLE SPEED | 0.0 km/h | | |
| | | Page Down | |
| | | RECORD | |
| MODE | BACK | LIGHT | COPE |

PKIB0110E

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FRONT WIPER AND WASHER SYSTEM

After Front Wiper Operate for 10 Seconds, They Stop for 20 Seconds, and After Repeating the Operations Five Times, They Become Inoperative

AKS00APU

CAUTION:

- When auto-stop signal has not varied for 10 seconds or longer while IPDM E/R is operating front wipers, IPDM E/R considers that front wipers are locked, and stops wiper output. That causes this symptom.
- This status can be checked by “DATA MONITOR” of “IPDM E/R” on which “WIPER PROTECTION” item shows “BLOCK”.

1. CHECK WIPER MOTOR SIGNAL

☐ With CONSULT-II

Select “IPDM E/R” by CONSULT-II. With “DATA MONITOR”, make sure that “WIP AUTO STOP” turns “ACT P” - “STOP P” linked with wiper operation.

☒ Without CONSULT-II

GO TO 2.

OK or NG

OK >> Replace IPDM E/R.

NG >> GO TO 2.

| DATA MONITOR | | | |
|---------------|------|--------|------|
| MONITOR | | | |
| WIP AUTO STOP | | STOP P | |
| | | | |
| | | RECORD | |
| MODE | BACK | LIGHT | COPY |

PKIA7614E

2. CHECK WIPER AUTO STOP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 32 (L/Y) and front wiper motor harness connector E52 terminal 1 (L/Y).

32 (L/Y) - 1 (L/Y) : Continuity should exist.

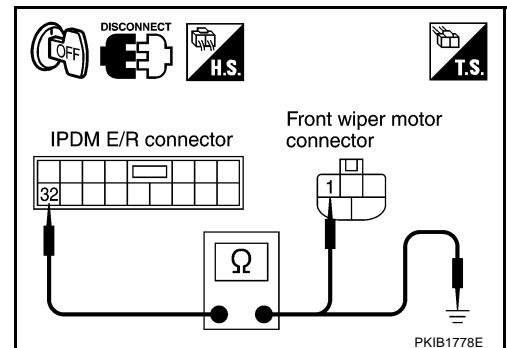
4. Check continuity between IPDM E/R harness connector E7 terminal 32 (L/Y) and ground.

32 (L/Y) - Ground : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

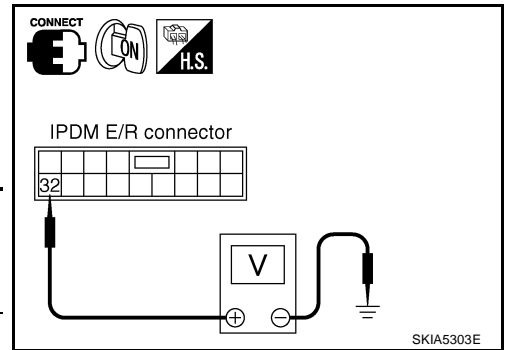


FRONT WIPER AND WASHER SYSTEM

3. CHECK FRONT WIPER MOTOR

1. Connect IPDM E/R connector and front wiper connector.
2. Turn ignition switch ON.
3. Check voltage between IPDM E/R harness connector E7 terminal 32 (L/Y) and ground while front wiper motor is stopped and while it is operating.

| Terminal | | Condition | Voltage |
|--------------|-----------------------|-----------|-----------------|
| IPDM E/R (+) | | | |
| Connector | Terminal (Wire color) | (-) | |
| E7 | 32 (L/Y) | Ground | Wiper stopped |
| | | | Wiper operating |
| | | | Approx. 0V |
| | | | Battery voltage |



OK or NG

- OK >> Replace IPDM E/R.
- NG >> Replace front wiper motor.

Front Wiper Does Not Stop

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "FR WIPER INT", "FR WIPER LOW", "FR WIPER HI", and "FR WASHER SW" turn ON-OFF according to front wiper switch operation.

| DATA MONITOR | |
|---------------|----------|
| MONITOR | |
| IGN ON SW | ON |
| IGN SW CAN | ON |
| FR WIPER HI | OFF |
| FR WIPER LOW | OFF |
| FR WIPER INT | OFF |
| FR WASHER SW | OFF |
| INT VOLUME | 7 |
| FR WIPER STOP | ON |
| VEHICLE SPEED | 0.0 km/h |
| Page Down | |
| RECORD | |
| MODE | BACK |
| LIGHT | COPE |

Without CONSULT-II

Refer to [LT-173, "Combination Switch Inspection"](#) .

OK or NG

- OK >> Replace IPDM E/R.
- NG >> Check combination switch (wiper switch). Refer to [LT-173, "Combination Switch Inspection"](#) .

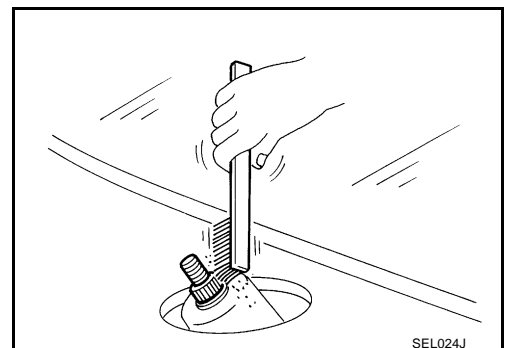
Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location

REMOVAL

1. Operate front wiper motor, and stop it at the auto stop position.
2. Remove washer tube from washer tube joint.
3. Remove front wiper arm mounting nuts and front wiper arm from vehicle.

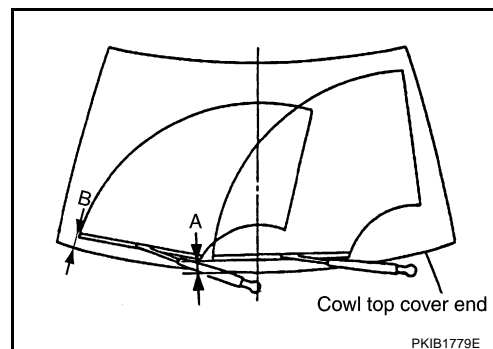
INSTALLATION

1. Clean up the pivot area as illustrated. This will reduce possibility of front wiper arm looseness.



FRONT WIPER AND WASHER SYSTEM

2. Prior to front wiper arm installation, turn on wiper switch to operate front wiper motor and then turn it "OFF" (Auto Stop).
3. Push front wiper arm onto pivot shaft, paying attention to blind spline.
4. Attach washer tube to washer tube joint.
5. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "A" & "B" immediately before tightening nut.
6. Eject washer fluid. Turn on wiper switch to operate front wiper motor and then turn it "OFF".
7. Ensure that wiper blades stop within clearance "A" & "B".



Clearance "A" : 56.4 – 71.4 mm (2.22 – 2.81in)

Clearance "B" : 30.5 – 43.5 mm (1.201 – 1.752in)

- Tighten front wiper arm nuts to specified torque.

Front wiper arm nuts  : 23.6 N·m (2.4 kg-m, 18 ft-lb)

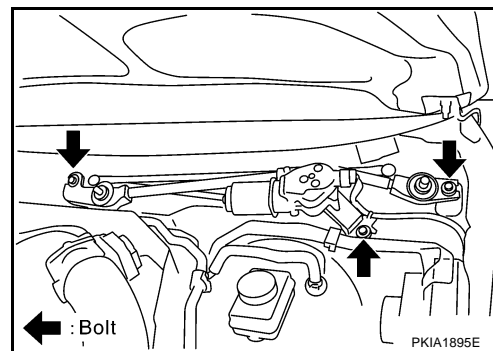
ADJUSTMENT

Refer to [WW-31, "INSTALLATION"](#) .

Removal and Installation of Front Wiper Motor and Linkage

REMOVAL

1. Remove front wiper arm. Refer to [WW-31, "REMOVAL"](#) .
2. Remove cowl top cover. Refer to [EI-20, "COWL TOP"](#) in "EI" section.
3. Remove washer tube.
4. Disconnect front wiper motor connector.
5. Remove front wiper motor and linkage mounting bolts, and remove front wiper motor and linkage.



INSTALLATION

1. Install front wiper motor and linkage to the vehicle.
2. Connect front wiper motor assembly to the connector. Turn wiper switch ON to operate front wiper motor, then turn wiper switch OFF (auto stop).
3. Attach washer tube to washer tube joint.
4. Install cowl top cover. Refer to [EI-20, "COWL TOP"](#) in "EI" section.
5. Install front wiper arms. Refer to [WW-31, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location"](#) .
6. Attach front wiper arm washer tube.

Front wiper motor and linkage mounting bolts  : 5.5 N·m (0.56 kg-m, 49 in-lb)

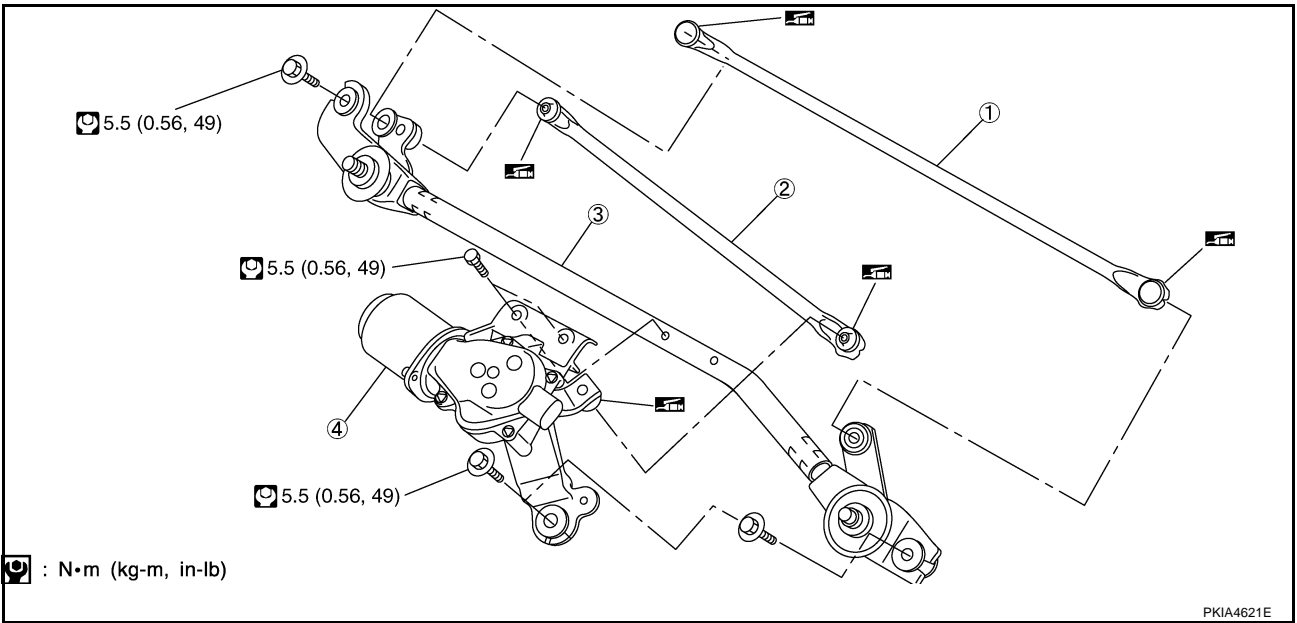
CAUTION:

- Never drop front wiper motor or cause it to contact other parts.
- Check grease conditions of the motor arm and wiper link joint (at retainer). Apply grease if necessary.

FRONT WIPER AND WASHER SYSTEM

Disassembly and Assembly Front Wiper Motor and Linkage

AKS00APY



- 1. Wiper link 1
- 2. Wiper link 2
- 3. Wiper frame
- 4. Front wiper motor

DISASSEMBLY

1. Remove wiper link from wiper frame and motor arm.
2. Remove front wiper motor mounting bolts, and remove front wiper motor from wiper frame.

ASSEMBLY

Assembly is the reverse order of disassembly.

Wiper motor mounting bolts  : 5.5 N·m (0.56 kg-m, 49 in-lb)

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FRONT WIPER AND WASHER SYSTEM

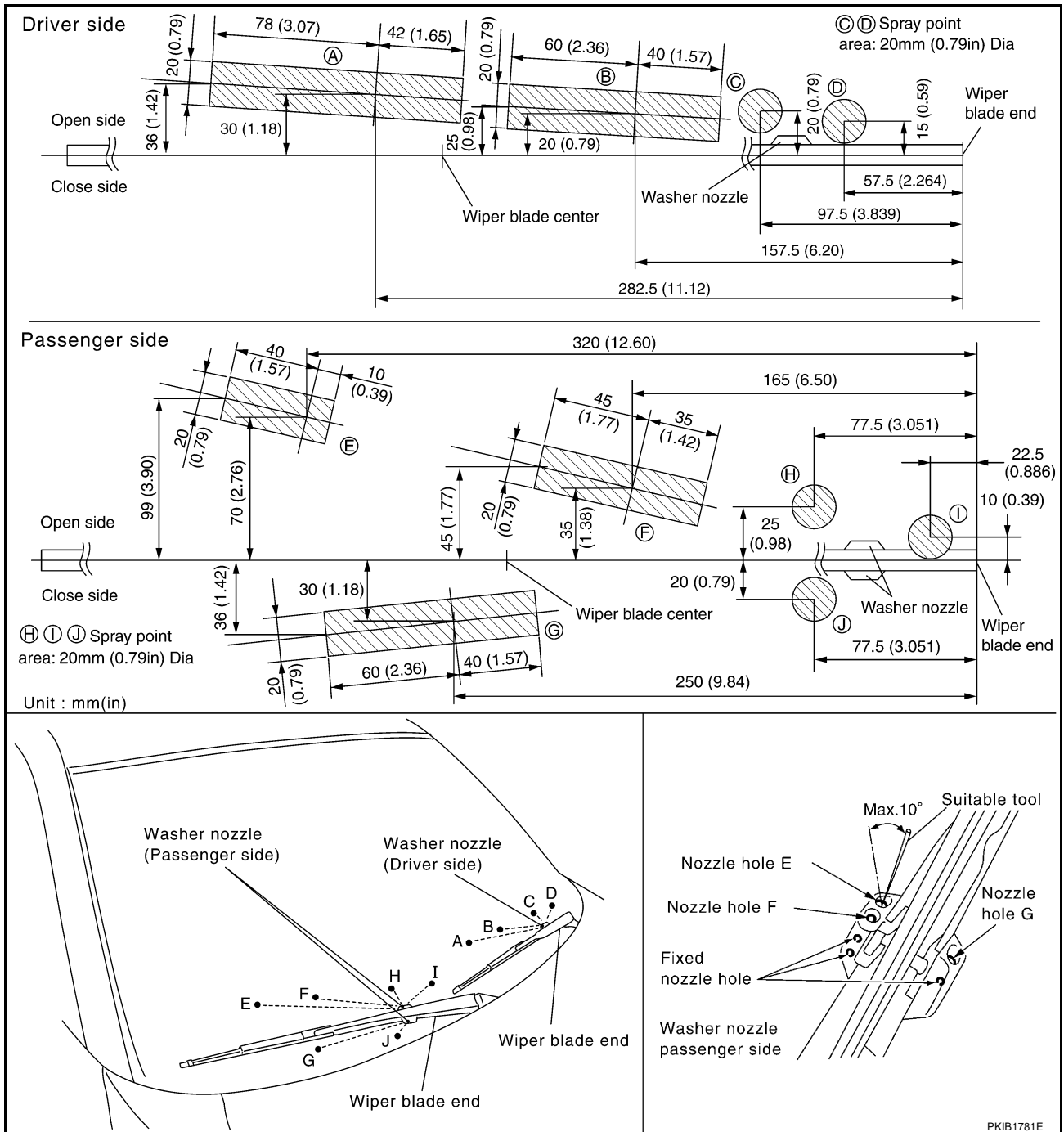
AKS00APZ

Washer Nozzle Adjustment

1. When wiper blade position is in auto stop condition, remove front wiper motor connector to ensure front wiper arms do not move.
2. Adjust each nozzle position (A, B, E, F, and G) so that spray positions are in the range of shaded parts.

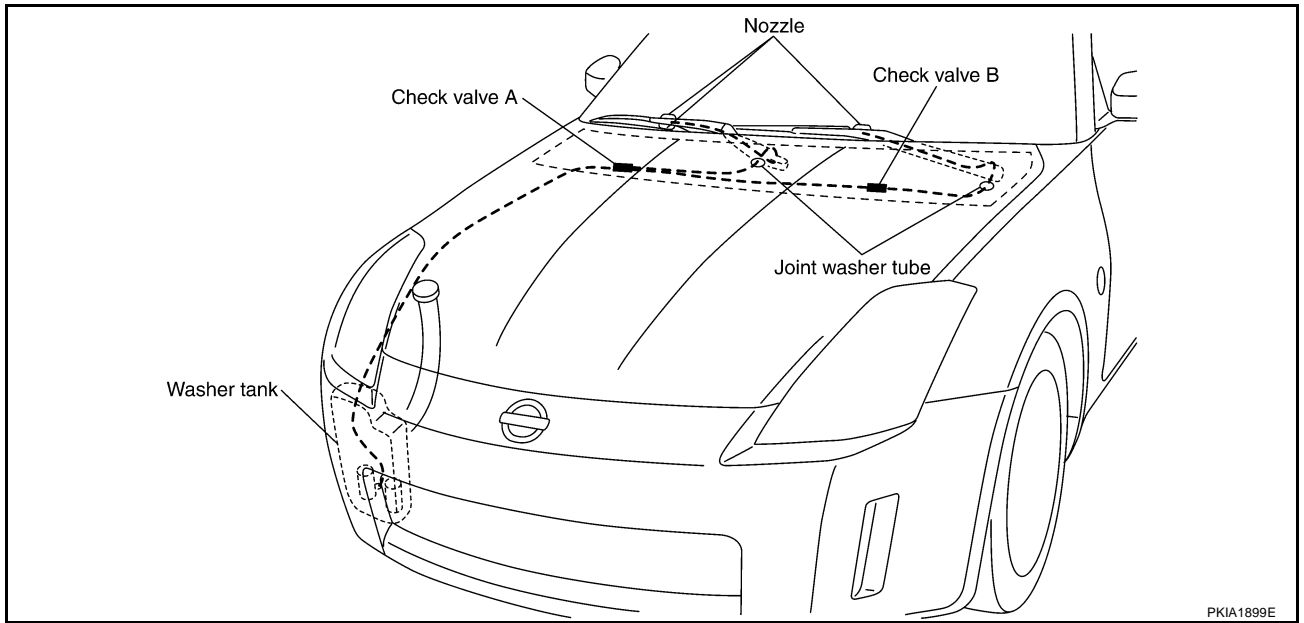
CAUTION:

Only washer nozzles (A, B, E, F, and G) can be adjusted. Washer nozzles (C, D, H, I, and J) cannot be adjusted because of fixed nozzles.



FRONT WIPER AND WASHER SYSTEM

Washer Tube Layout



Removal and Installation of Front Washer Nozzle

AKS00AQ1

Replace wiper arm assembly. Refer to [WW-31, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location"](#) .

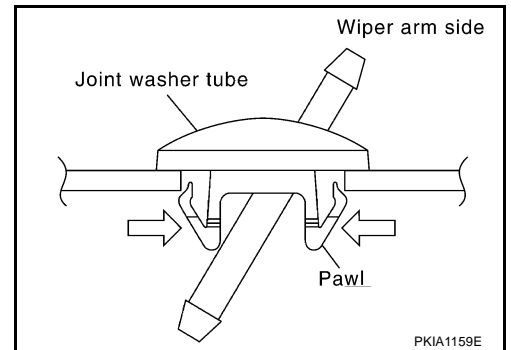
CAUTION:

Removal/installation of washer nozzle as a unit must not be done.

Removal and Installation of Front Washer Tube Joint

AKS00AQ2

- REMOVAL**
1. Remove upwards while pressing pawls on reverse side.
 2. Remove washer tube.



INSTALLATION

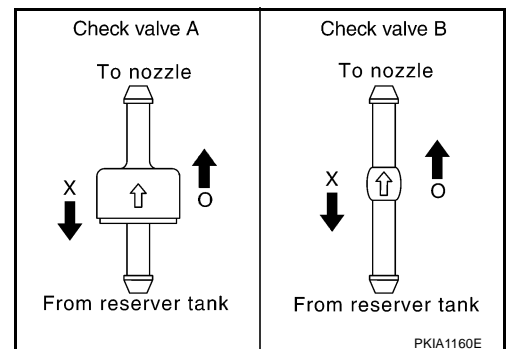
Installation is the reverse order of removal.

Inspection of Washer Nozzle

AKS00AQ3

CHECK VALVE

Blow air in the injection direction, and check that air flows only one way. Make sure that the reverse direction (inhale) is not possible.



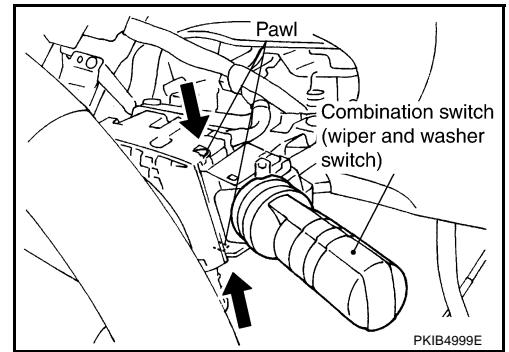
FRONT WIPER AND WASHER SYSTEM

Removal and Installation of Front Wiper and Washer Switch

AKS00A04

REMOVAL

1. Remove steering column lower cover and combination meter. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Disconnect wiper and washer switch connector.
3. Pull wiper and washer switch toward the passenger door while pressing pawls in direction shown by the arrow in the figure, and remove it from the base.



INSTALLATION

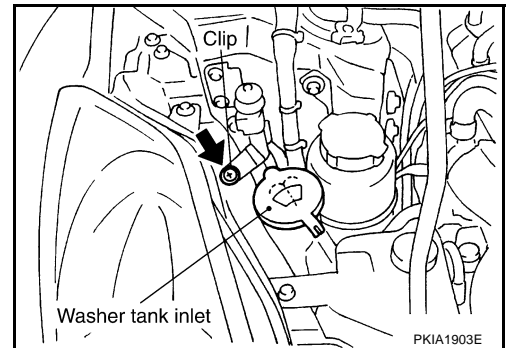
Installation is the reverse order of removal.

Removal and Installation of Washer Tank

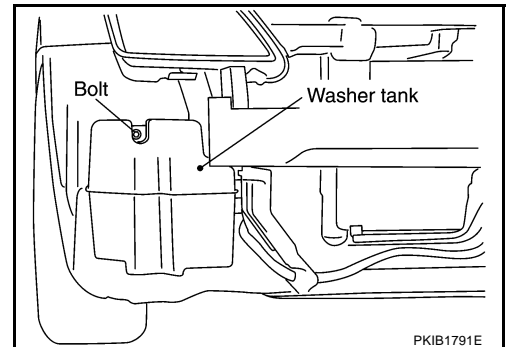
AKS00A05

REMOVAL

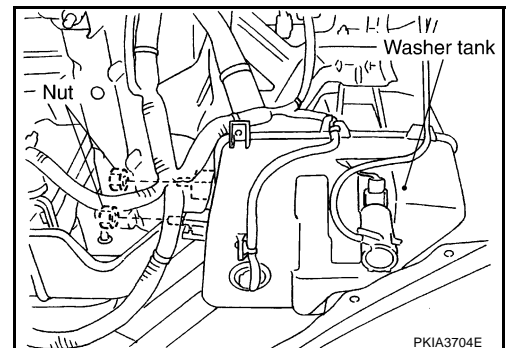
1. Remove clip and pull out washer tank inlet.



2. Remove under cover.
3. Remove fender protector. Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section.
4. Remove front bumper fascia. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
5. Disconnect washer pump connector.
6. Remove washer tank mounting bolt and nuts.



7. Remove washer tube, and remove washer tank from the vehicle.



FRONT WIPER AND WASHER SYSTEM

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

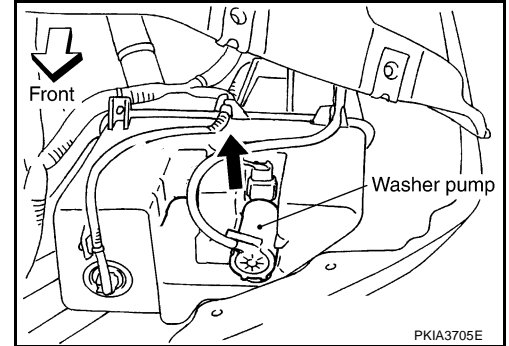
After installation, add water up to the upper level of washer tank inlet, and check for water leaks.

Washer tank mounting bolt and nuts  : 5.7 N-m (0.58 kg-m, 50 in-lb)

Removal and Installation of Washer Pump

REMOVAL

1. Remove fender protector. Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section.
2. Disconnect washer pump connector and tube.
3. Pull out washer pump in direction shown by the arrow in the figure. Remove washer pump from washer tank.



INSTALLATION

Installation is the reverse order of removal.

CAUTION:

When installing washer pump, there should be no packing twists, etc.

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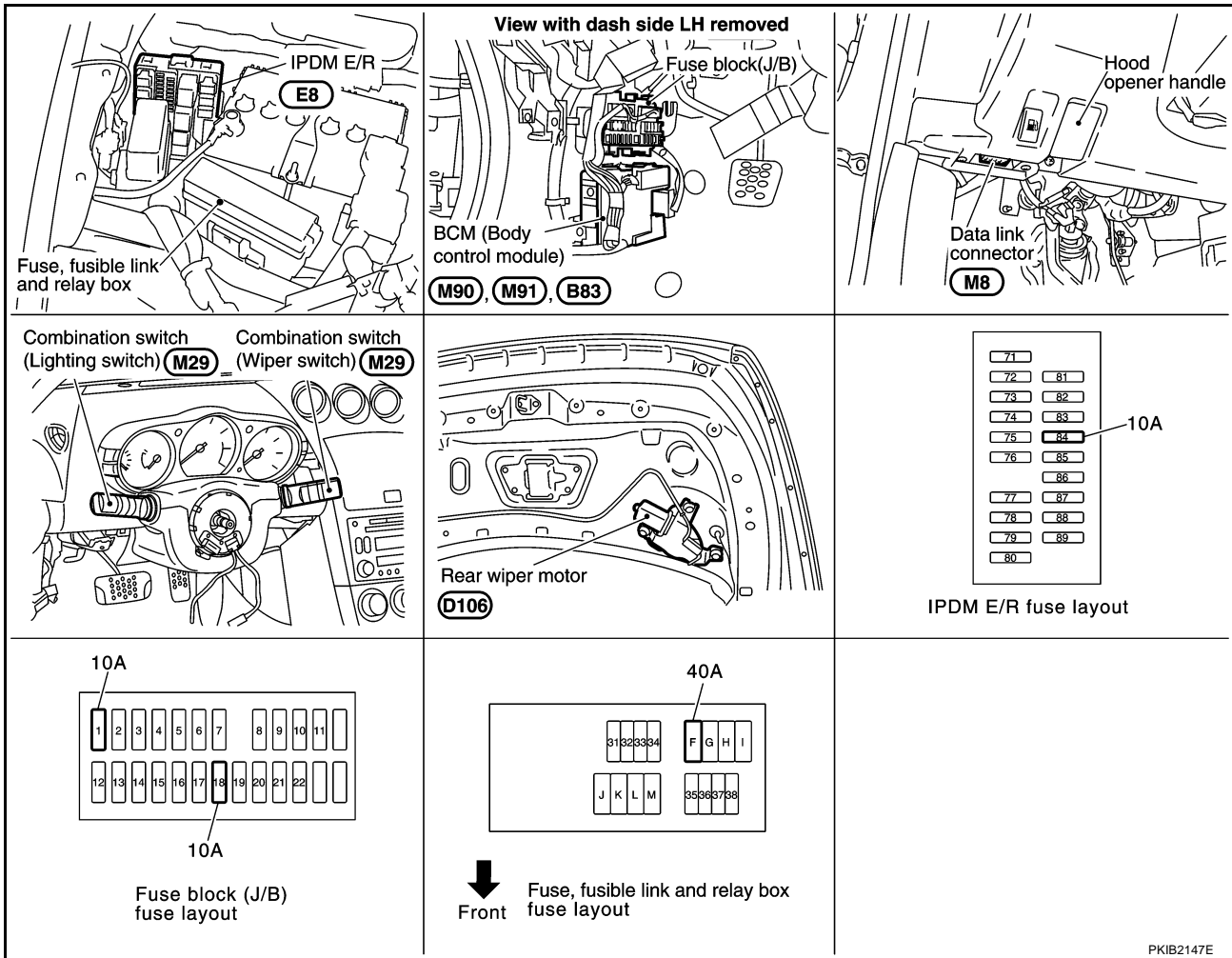
REAR WIPER AND WASHER SYSTEM

REAR WIPER AND WASHER SYSTEM

PF2:28710

Components Parts and Harness Connector Location

AKS009PS



PKIB2147E

System Description

AKS009PT

- Wiper switch (combination switch) is composed of a combination of 5 output terminals and 5 input terminals. Terminal combination status is read by BCM when switch is turned ON.
- BCM (body control module) controls rear wiper ON and INT (intermittent) operation.

OUT LINE

Power is supplied at all times

- through 40 A fusible link (letter F, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 10 A fuse [No. 18, located in fuse block (J/B)]
- to BCM terminal 42.

When ignition switch is in ON or START position, power is supplied

- through 10 A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 38,
- through 10 A fuse (No. 84, located in IPDM E/R)
- through IPDM E/R terminal 44
- to rear washer motor terminal 2.

Ground is supplied

- to BCM terminal 52
- through grounds M30 and M66,

REAR WIPER AND WASHER SYSTEM

- to combination switch terminal 12
- through grounds M30 and M66.

A

Rear Wiper Operation

When wiper switch is in rear wiper ON position, BCM detect rear wiper ON signal by BCM wiper switch reading function.

B

BCM operate rear wiper motor, power is supplied

- through BCM terminal 70
- to rear wiper motor 4.

C

Ground is supplied

- to rear wiper motor terminal 1
- through body grounds B5, B6, D105 and T14.

D

With power and ground is supplied, rear wiper operates.

E

Intermittent Operation

The rear wiper motor operates wiper arms at low speed approximately every 7 seconds.

When wiper switch is in rear wiper INT position, BCM detect rear wiper INT signal by BCM wiper switch reading function. (Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#))

F

BCM operate rear wiper motor, power is supplied

- through BCM terminal 70
- to rear wiper motor 4.

G

Ground is supplied

- to rear wiper motor terminal 1
- through body grounds B5, B6, D105 and T14.

H

With power and ground is supplied, rear wiper operates at intermittent.

I

Auto Stop Operation

With rear wiper switch turned OFF, rear wiper motor will continue to operate until wiper arm reaches rear wiper stopper.

Then wiper motor turns the other way and wiper arm moves once until wiper arm reaches stopper.

J

Washer Operation

When wiper switch is in rear wiper washer position, BCM detect rear wiper washer signal by BCM wiper switch reading function (Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#)), and combination switch (wiper switch) ground is supplied

WW

- to rear washer motor terminal 1
- through combination switch terminal 13
- to combination switch terminal 12
- through body grounds M30 and M66.

L

With ground is supplied, rear washer motor is operated.

When BCM detects that rear washer motor has operated for 0.4 seconds or longer, BCM operates rear wiper motor low speed.

When BCM detects washer switch is OFF, low speed operation cycles approximately 3 times and then stops.

M

BCM WIPER SWITCH READING FUNCTION

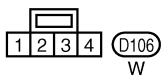
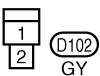
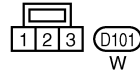
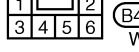
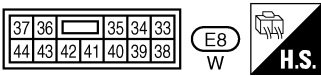
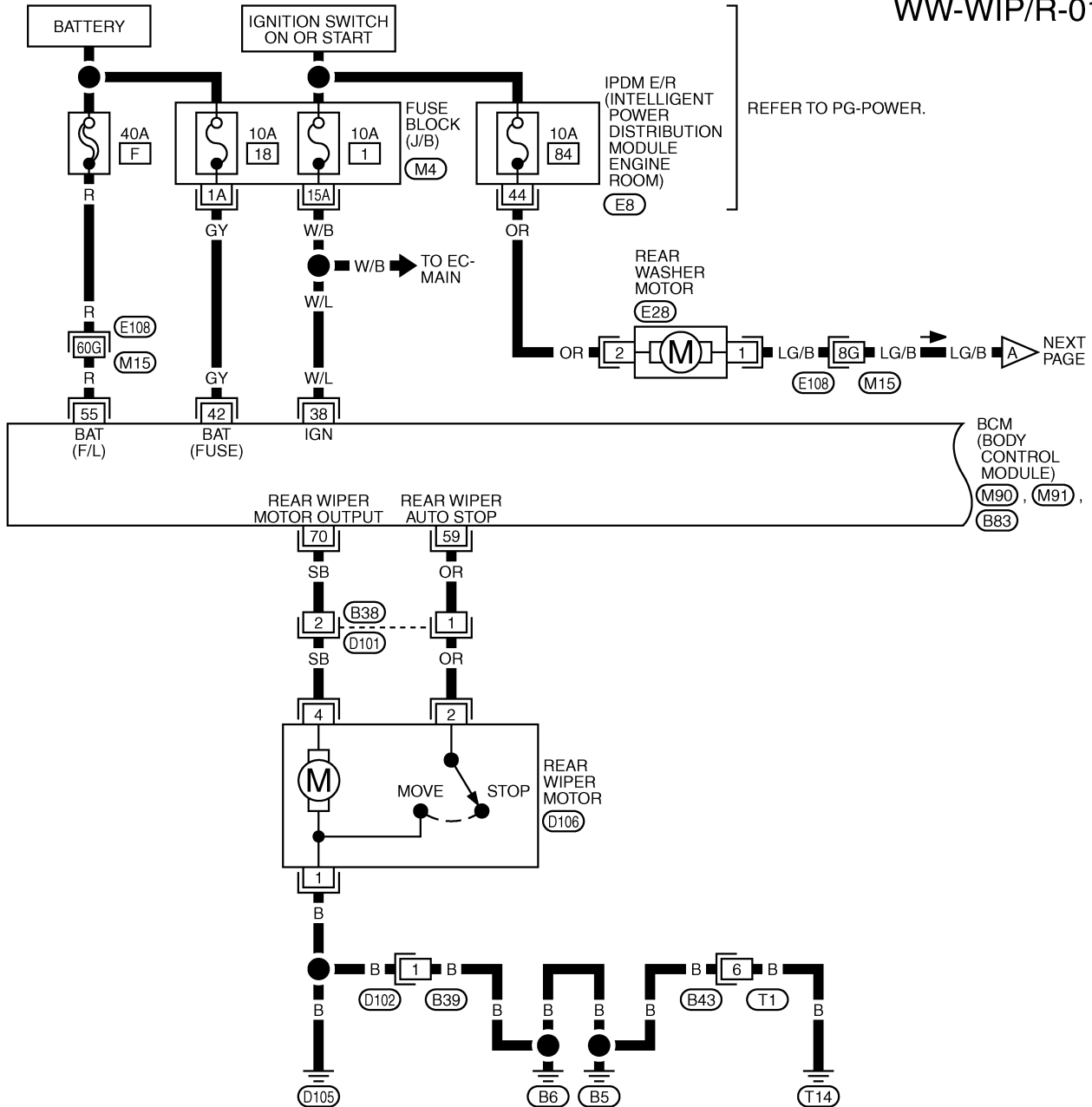
Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#) in FRONT WIPER AND WASHER SYSTEM.

REAR WIPER AND WASHER SYSTEM

AKS009PU

Wiring Diagram — WIP/ R —

WW-WIP/R-01



REFER TO THE FOLLOWING.

(E108) -SUPER MULTIPLE JUNCTION (SMJ)

(M4) -FUSE BLOCK-JUNCTION BOX (J/B)

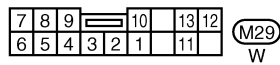
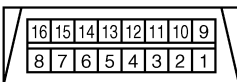
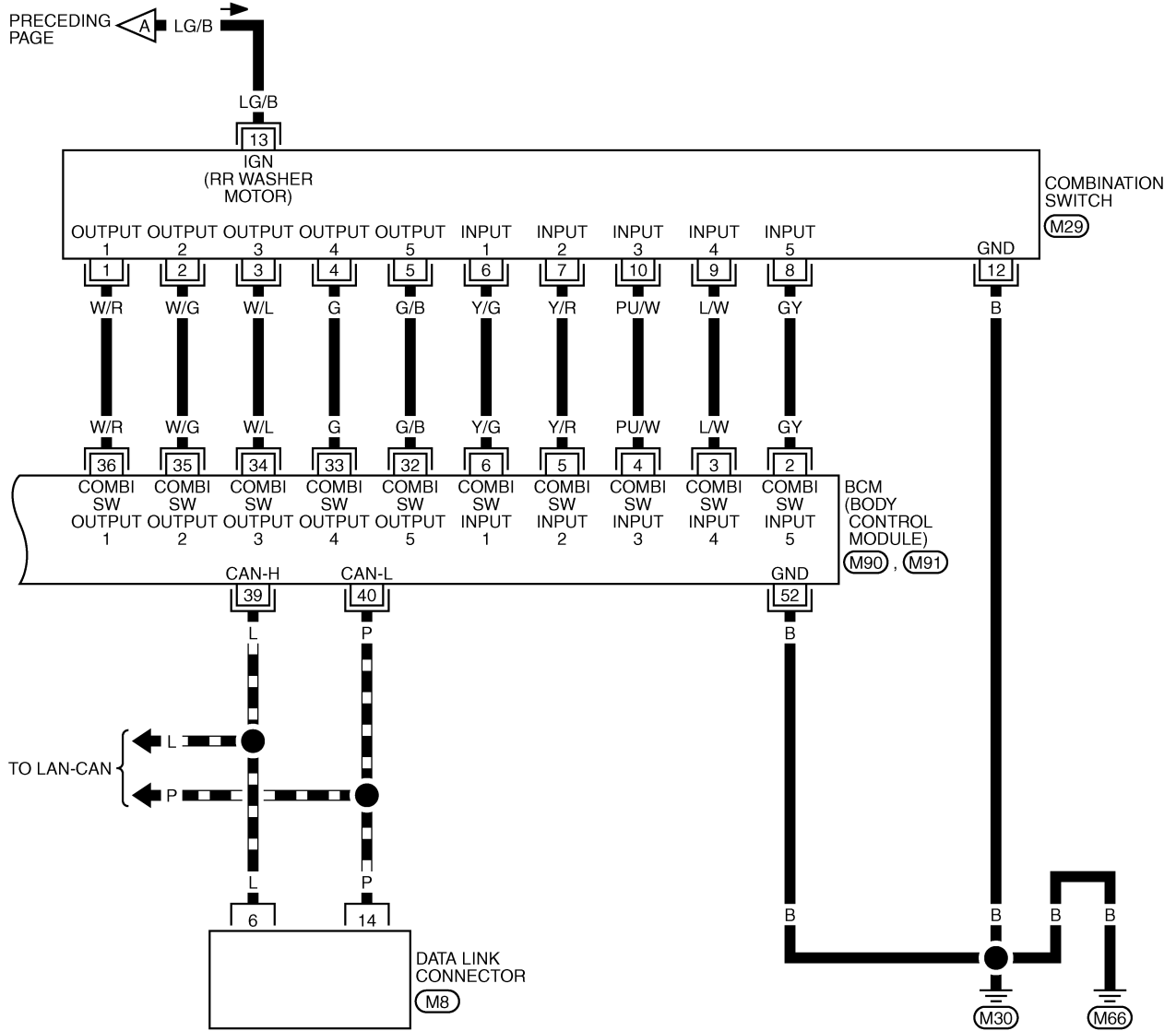
(M90), (M91), (B83) -ELECTRICAL UNITS

TKWT2318E

REAR WIPER AND WASHER SYSTEM

WW-WIP/R-02

▬ : DATA LINE

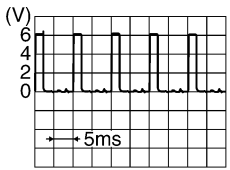
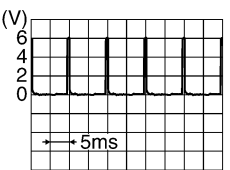
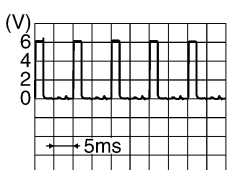
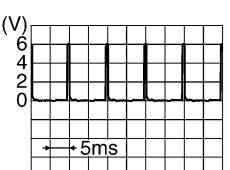





TKWT2319E

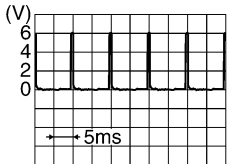
REAR WIPER AND WASHER SYSTEM

Terminals and Reference Values for BCM

AKS00AQ7

| Terminal No. | Wire color | Signal name | Measuring condition | | Reference value |
|--------------|------------|-----------------------------|---------------------|---|---|
| | | | Ignition switch | Operation or condition | |
| 2 | GY | Combination switch input 5 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5291E</p> |
| 3 | L/W | Combination switch input 4 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5292E</p> |
| 4 | PU/W | Combination switch input 3 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5291E</p> |
| 5 | Y/R | Combination switch input 2 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5292E</p> |
| 6 | Y/G | Combination switch input 1 | | | |
| 32 | G/B | Combination switch output 5 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5291E</p> |
| 33 | G | Combination switch output 4 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5292E</p> |
| 34 | W/L | Combination switch output 3 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  <p style="text-align: right;">SKIA5291E</p> |

REAR WIPER AND WASHER SYSTEM

| Terminal No. | Wire color | Signal name | Measuring condition | | Reference value | |
|--------------|------------|--------------------------------|---------------------|---|---|-----------------|
| | | | Ignition switch | Operation or condition | | |
| 35 | W/G | Combination switch output 2 | ON | Lighting switch and wiper switch OFF Wiper dial position 4 |  | |
| 36 | W/R | Combination switch output 1 | | | | |
| 38 | W/L | Ignition switch (ON) | ON | — | Battery voltage | |
| 42 | GY | Battery power supply | OFF | — | Battery voltage | |
| 52 | B | Ground | ON | — | Approx. 0V | |
| 55 | R | Battery power supply | OFF | — | Battery voltage | |
| 59 | OR | Rear wiper auto stop signal | ON | Wiper operating | Approx. 0V | |
| | | | | Wiper stopped | Battery voltage | |
| 70 | SB | Rear wiper motor output signal | ON | Wiper switch | OFF | Approx. 0V |
| | | | | | ON | Battery voltage |

How to Proceed With Trouble Diagnosis

AKS009PW

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-38, "System Description"](#).
3. Perform preliminary check. Refer to [WW-43, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does rear wiper and washer operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

AKS009PX

1. CHECK FUSE

- Check for blown fuses.

| Unit | Power source | Fuse and fusible link No. |
|-------------------|----------------------|---------------------------|
| Rear washer motor | Ignition ON or START | 84 |
| BCM | Ignition ON or START | 1 |
| | Battery | F |
| | | 18 |

Refer to [WW-40, "Wiring Diagram — WIP/ R —"](#).

OK or NG

OK >> GO TO 2.

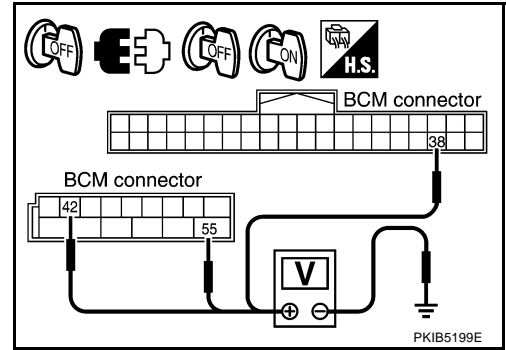
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#).

REAR WIPER AND WASHER SYSTEM

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM connector and ground.

| Terminal | | Ignition switch position | |
|-----------|-----------------------|--------------------------|-----------------|
| (+) | | (-) | |
| Connector | Terminal (Wire color) | OFF | ON |
| M91 | 42 (GY) | Battery voltage | Battery voltage |
| | 55 (R) | Battery voltage | Battery voltage |
| M90 | 38 (W/L) | Approx. 0V | Battery voltage |



OK or NG

OK >> GO TO 3.

NG >> Check harness for open or short between BCM and fuse.

3. CHECK GROUND CIRCUIT

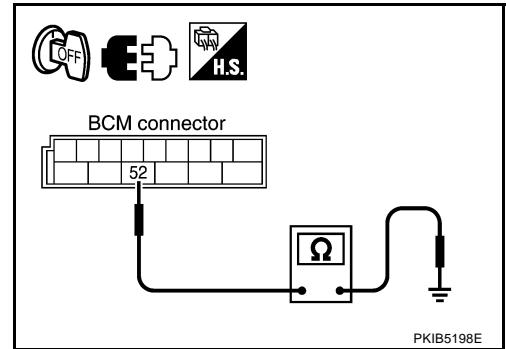
Check continuity between BCM and ground.

| Terminal | | Ground | Continuity |
|-----------|-----------------------|--------|------------|
| Connector | Terminal (Wire color) | | |
| M91 | 52 (B) | | Yes |

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



CONSULT-II Functions (BCM)

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

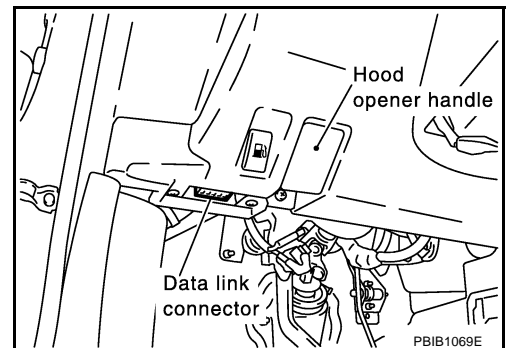
| BCM diagnosis position | Diagnosis mode | Description |
|------------------------|----------------|---|
| WIPER | DATA MONITOR | Displays BCM input data in real time. |
| | ACTIVE TEST | Device operation can be checked by applying a drive signal to device. |

CONSULT-II BASIC OPERATION

CAUTION:

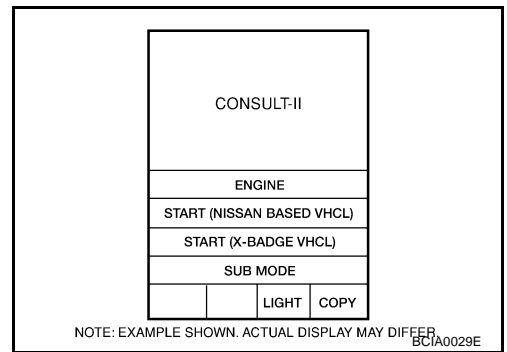
If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.

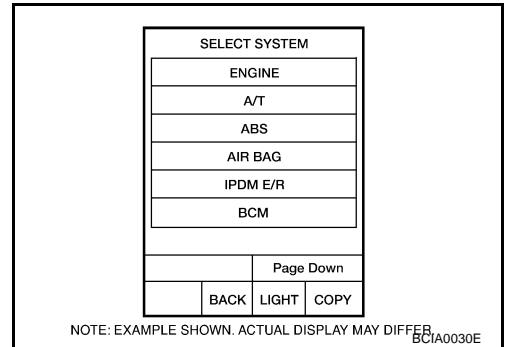


REAR WIPER AND WASHER SYSTEM

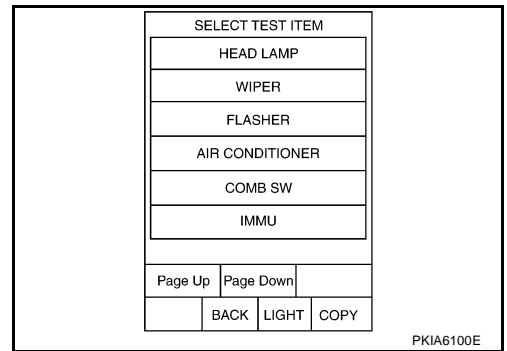
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen
If "BCM" is not displayed, print "SELECT SYSTEM" screen, then refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#)



4. Touch "WIPER" on "SELET TEST ITEM" screen.



DATA MONITOR

Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

| | |
|---------------------|---------------------------------|
| ALL SIGNALS | Monitors all the signals. |
| SELECTION FROM MENU | Selects items and monitor them. |

4. When "SELECTION FROM MENU" is selected, touch items to be monitored. When "ALL SIGNALS" is selected, all the items will be monitored.
5. Touch "START".
6. Touch "RECORD" while monitoring, then the status of the monitored item can be recorded. To stop recording, touch "STOP".

Display Item List

| Monitor item | Contents |
|----------------------|---|
| IGN ON SW "ON/OFF" | Displays "ignition switch ON (ON)/Other OFF or ACC (OFF)" status as judged from ignition switch signal. |
| IGN SW CAN "ON/OFF" | Displays "ignition switch ON (ON)/Other OFF or ACC (OFF)" status as judged from CAN communication signal. |
| FR WIPER HI "ON/OFF" | Displays "FRONT WIPER HI (ON)/Other (OFF)" status as judged from wiper switch signal. |

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REAR WIPER AND WASHER SYSTEM

| Monitor item | Contents |
|---------------------------------|---|
| FR WIPER LOW | "ON/OFF" Displays "FRONT WIPER LOW (ON)/Other (OFF)" status as judged from wiper switch signal. |
| FR WIPER INT | "ON/OFF" Displays "FRONT WIPER INT (ON)/Other (OFF)" status as judged from wiper switch signal. |
| FR WASHER SW | "ON/OFF" Displays "FRONT WASHER Switch (ON)/Other (OFF)" status as judged from wiper switch signal. |
| INT VOLUME | "1 - 7" Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal. |
| FR WIPER STOP | "ON/OFF" Displays "Stopped (ON)/Operating (OFF)" status as judged from auto-stop signal. |
| VEHICLE SPEED | "km/h" Displays vehicle speed status as judged from vehicle speed signal. |
| RR WIPER ON ^{NOTE 1} | "ON/OFF" Displays "Rear Wiper ON (ON)/Other (OFF)" status as judged from wiper switch signal. |
| RR WIPER INT ^{NOTE 1} | "ON/OFF" Displays "Rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal. |
| RR WASHER SW ^{NOTE 1} | "ON/OFF" Displays "Rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal. |
| RR WIPER STOP ^{NOTE 1} | "ON/OFF" Displays "Rear Wiper Stop (ON)/Other (OFF)" status, as judged from wiper switch signal. |
| RR WIPER STP2 ^{NOTE 2} | "OFF" — |

NOTE:

1. Coupe models
2. This item is displayed, but cannot be monitored.

ACTIVE TEST

Operation Procedure

1. Touch "WIPERS" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching "BACK" deactivates the operation.

Display Item List

| Test item | Display on CONSULT-II screen | Description |
|-----------------------------------|------------------------------|---|
| Front wiper output | FR WIPER | With a certain operation (OFF, HI, LO, INT), front wiper can be operated. |
| Rear wiper output ^{NOTE} | RR WIPER | Rear wiper can be operated by any ON-OFF operation |

NOTE:

Coupe models

Rear Wiper Does Not Operate

AKS00AQ8

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

 With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "RR WIPER ON", turn ON-OFF according to front wiper switch operation.

 Without CONSULT-II

Refer to [LT-173, "Combination Switch Inspection"](#).

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (wiper switch). Refer to [LT-173, "Combination Switch Inspection"](#).

| DATA MONITOR | |
|---------------|-----------------|
| MONITOR | |
| FR WASHER SW | OFF |
| INT VOLUME | 7 |
| FR WIPER STOP | ON |
| VEHICLE SPEED | 0.0 km/h |
| RR WIPER ON | OFF |
| RR WIPER INT | OFF |
| RR WASHER SW | OFF |
| RR WIPER STOP | OFF |
| RR WIPER STP2 | OFF |
| Page Up | |
| RECORD | |
| MODE | BACK LIGHT COPY |

PKIB1785E

REAR WIPER AND WASHER SYSTEM

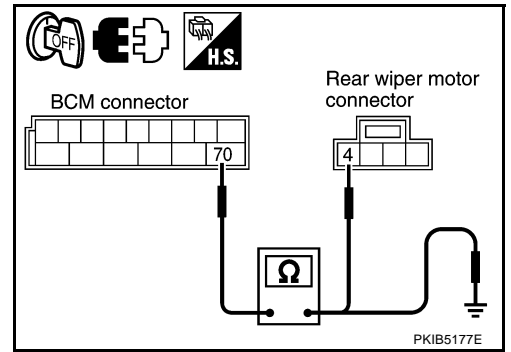
5. CHECK REAR WIPER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector B83 terminals 70 (SB) and rear wiper motor harness connector D106 terminals 4 (SB).

70 (SB) - 4 (SB) : Continuity should exist.

4. Check continuity between BCM harness connector B83 terminals 70 (SB) and ground.

70 (SB) - Ground : Continuity should not exist.



OK or NG

- OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#) .
 NG >> Repair harness or connector.

Rear Wiper Does Not Return to Stop Position

AKS00A09

1. CHECK REAR WIPER MOTOR CIRCUIT

With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "RR WIPER STOP", turn ON-OFF linked with rear wiper switch operation.

Without CONSULT-II

GO TO 2.

OK or NG

- OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#) .
 NG >> GO TO 2.

| DATA MONITOR | |
|---------------|----------|
| MONITOR | |
| FR WASHER SW | OFF |
| INT VOLUME | 7 |
| FR WIPER STOP | ON |
| VEHICLE SPEED | 0.0 km/h |
| RR WIPER ON | OFF |
| RR WIPER INT | OFF |
| RR WASHER SW | OFF |
| RR WIPER STOP | OFF |
| RR WIPER STP2 | OFF |
| Page Up | |
| RECORD | |
| MODE | BACK |
| LIGHT | COPY |

PKIB1785E

REAR WIPER AND WASHER SYSTEM

2. CHECK REAR WIPER AUTO STOP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector B83 terminal 59 (OR) and rear wiper motor harness connector D106 terminal 2 (OR).

59 (OR) - 2 (OR) : Continuity should exist.

4. Check continuity between BCM harness connector B83 terminal 59 (OR) and ground.

59 (OR) - Ground : Continuity should not exist.

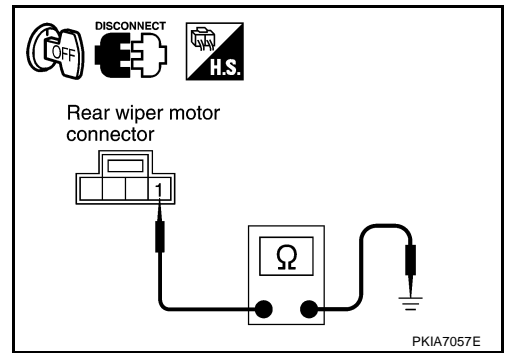
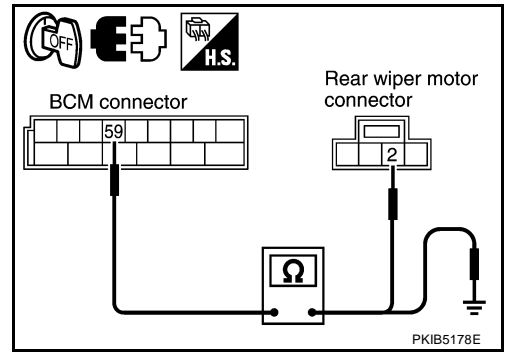
5. Check continuity between rear wiper motor harness connector D106 terminal 1 (B) and ground.

1 (B) - Ground : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK REAR WIPER MOTOR SIGNAL

1. Connect BCM connector and rear wiper motor connector.
2. Turn ignition switch ON.
3. Check voltage between rear wiper motor harness connector terminal and ground while rear wiper motor is stopped and while it is operating.

| Terminal | | (-) | Condition | Voltage |
|----------------------|-----------------------|--------|-----------------|-----------------|
| Rear wiper motor (+) | | | | |
| Connector | Terminal (Wire color) | | | |
| D106 | 2 (OR) | Ground | Wiper stopped | Battery voltage |
| | | | Wiper operating | Approx. 0V |

OK or NG

OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#) .

NG >> Replace rear wiper motor.

Only Rear Wiper ON Does Not Operate

AKS00AQA

Refer to [LT-173, "Combination Switch Inspection"](#) , and inspect it.

Only Rear Wiper INT Does Not Operate

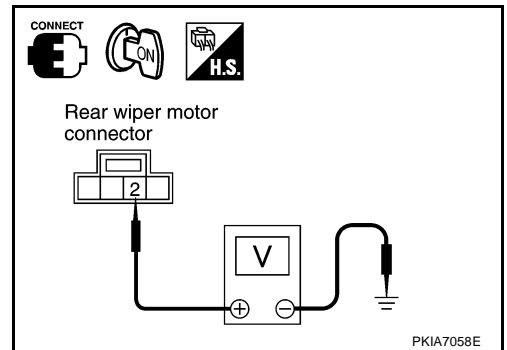
AKS00AQB

Refer to [LT-173, "Combination Switch Inspection"](#) , and inspect it.

Wiper Does Not Wipe When Rear Washer Operates

AKS00AQC

Refer to [LT-173, "Combination Switch Inspection"](#) , and inspect it.



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REAR WIPER AND WASHER SYSTEM

AKS00AQD

Rear Wipers Do Not Stop

1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

① With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR" on "SELECT DIAG MODE" screen. Make sure that "RR WIPER INT", "RR WIPER ON", and "RR WASHER SW" turn ON-OFF according to wiper switch operation.

⊗ Without CONSULT-II

Refer to [LT-173, "Combination Switch Inspection"](#).

OK or NG

OK >> Replace BCM. Refer to [BCS-18, "Removal and Installation of BCM"](#).

NG >> Check combination switch (wiper switch). Refer to [LT-173, "Combination Switch Inspection"](#).

| DATA MONITOR | |
|---------------|----------|
| MONITOR | |
| FR WASHER SW | OFF |
| INT VOLUME | 7 |
| FR WIPER STOP | ON |
| VEHICLE SPEED | 0.0 km/h |
| RR WIPER ON | OFF |
| RR WIPER INT | OFF |
| RR WASHER SW | OFF |
| RR WIPER STOP | OFF |
| RR WIPER STP2 | OFF |
| Page Up | |
| RECORD | |
| MODE | BACK |
| LIGHT | COPY |

PKIB1785E

Removal and Installation of Rear Wiper Arm, Adjustment of Wiper Arms Stop Location

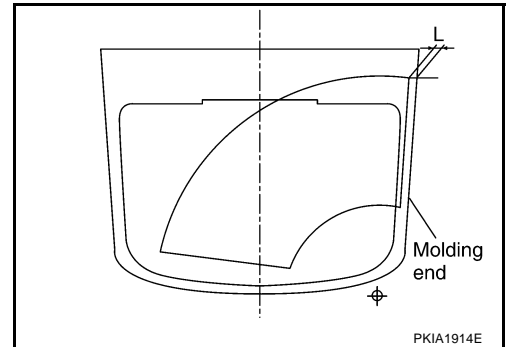
AKS009Q4

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (Auto Stop).
2. Lift blade up and then set it down onto glass surface to set blade center to clearance "L" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
4. Ensure that wiper blades stop within clearance "L".

Clearance "L" : 22.5 - 37.5 mm (0.886 - 1.476 in)

- Tighten wiper arm nuts to specified torque.

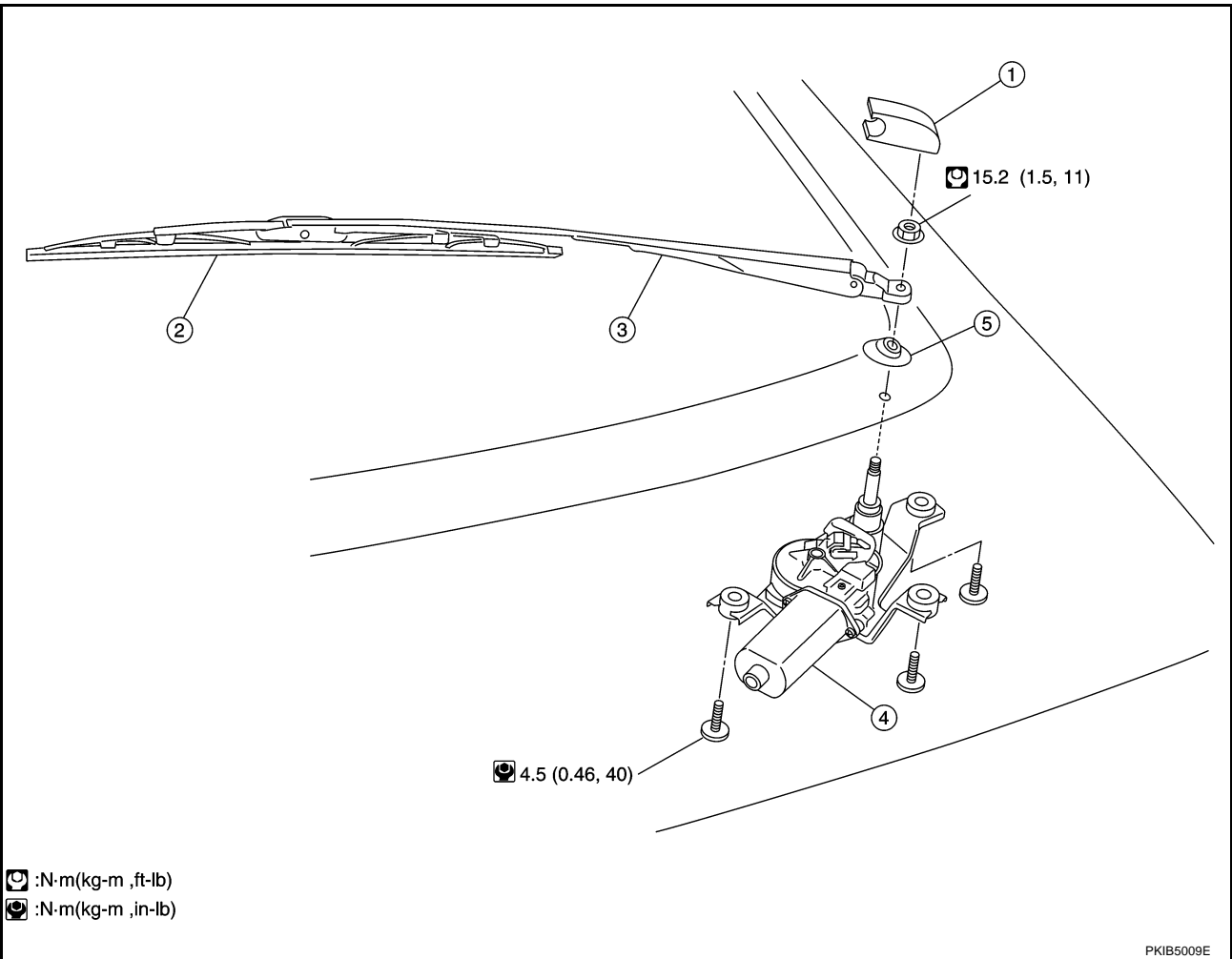
Rear wiper : 15.2 N·m (1.6 kg·m, 11 ft·lb)



REAR WIPER AND WASHER SYSTEM

Removal and Installation of Rear Wiper Motor

AKS009Q5



- | | | |
|---------------------|----------------|--------------|
| 1. Cover wiper arm | 2. Wiper blade | 3. Wiper arm |
| 4. Rear wiper motor | 5. Pivot cap | |

:N-m(kg-m ,ft-lb)
 :N-m(kg-m ,in-lb)

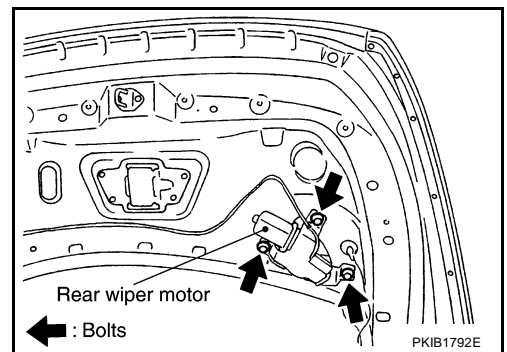
PKIB5009E

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REMOVAL

1. Operate rear wiper motor, and stop it at auto stop position.
2. Remove cover wiper arm.
3. Remove wiper arm nut, and remove wiper arm from vehicle.
4. Remove pivot cap.
5. Remove back door finisher lower. Refer to [EI-47, "BACK DOOR FINISHER"](#) in "EI" section.
6. Remove wiper motor connector.
7. Disconnect rear wiper motor mounting bolts and remove rear wiper motor.

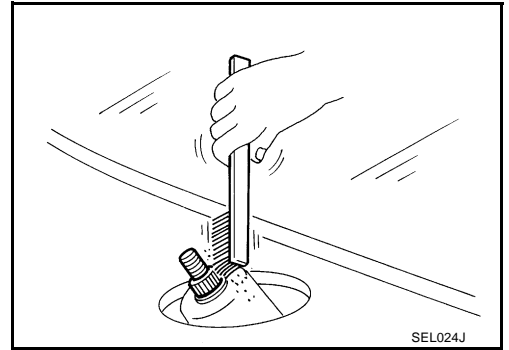


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M

REAR WIPER AND WASHER SYSTEM

INSTALLATION

1. Clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.
2. Attach pivot cap.
3. Install rear wiper motor to the vehicle.
4. Connect rear wiper motor to connector. Turn rear wiper switch ON to operate rear wiper motor, then turn wiper switch OFF (auto stop).
5. Install back door finisher lower. Refer to [EI-47, "BACK DOOR FINISHER"](#) in "EI" section.
6. Attach wiper arm.



Rear wiper motor mounting screw  : 5.5 N-m (0.56 kg-m, 49 in-lb)

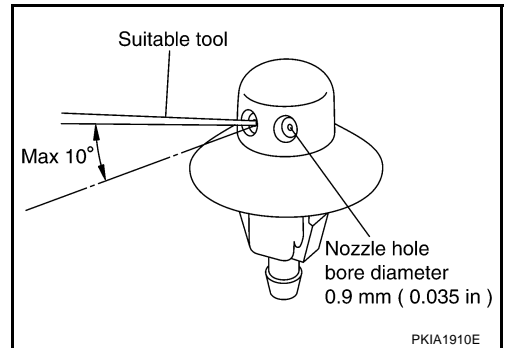
CAUTION:

- Never drop wiper motor or cause it to contact other parts.

Washer Nozzle Adjustment

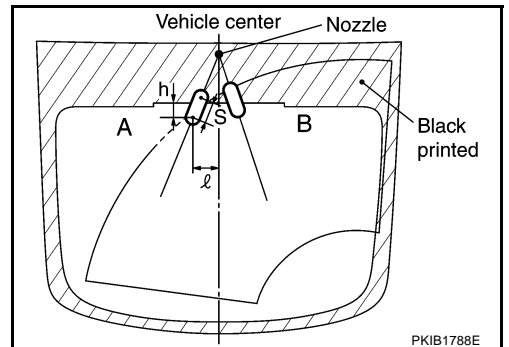
- Adjust washer nozzle with suitable tool as shown in the figure.

Adjustable range : $\pm 10^\circ$ (In any direction)



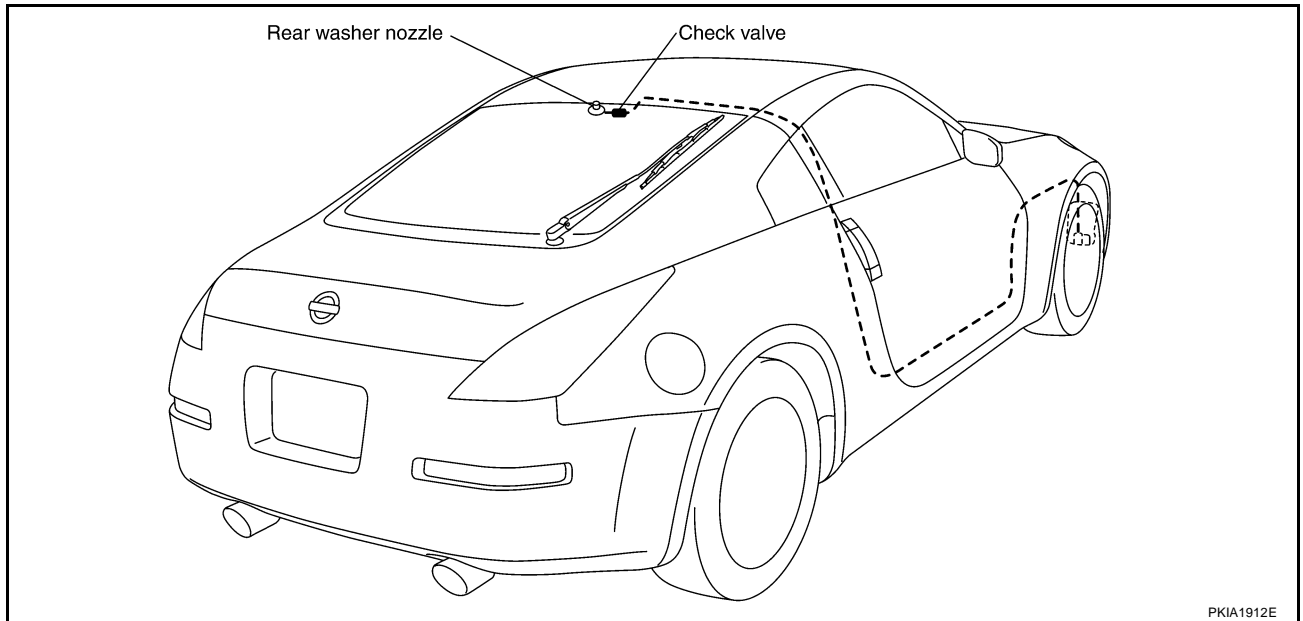
Unit: mm (in)

| Spray position | h (height) | ℓ (width) | S | Spray position range |
|----------------|------------|----------------|-----------|----------------------|
| A | 30 (1.18) | 73 (2.87) | 50 (1.97) | 30 |
| B | 12 (0.47) | 50 (1.97) | 50 (1.97) | 30 |



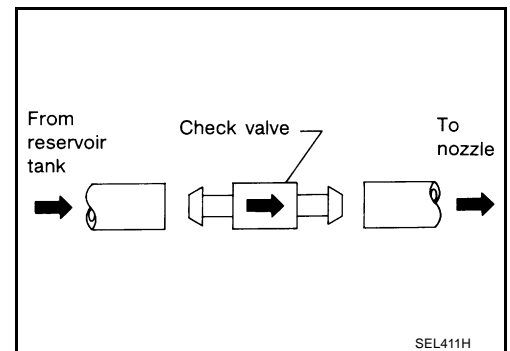
REAR WIPER AND WASHER SYSTEM

Washer Tube Layout



Check Valve

- A check valve is provided in washer fluid line. Be careful not to connect check valve to washer tube in the wrong direction.



Removal and Installation of Rear Wiper and Washer Switch

Refer to [WW-36, "Removal and Installation of Front Wiper and Washer Switch"](#) .

Removal and Installation of Washer Tank

Refer to [WW-36, "Removal and Installation of Washer Tank"](#) .

Removal and Installation of Washer Pump

Refer to [WW-37, "Removal and Installation of Washer Pump"](#) .

POWER SOCKET

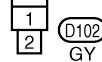
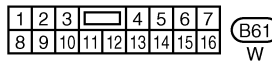
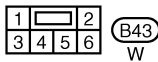
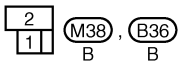
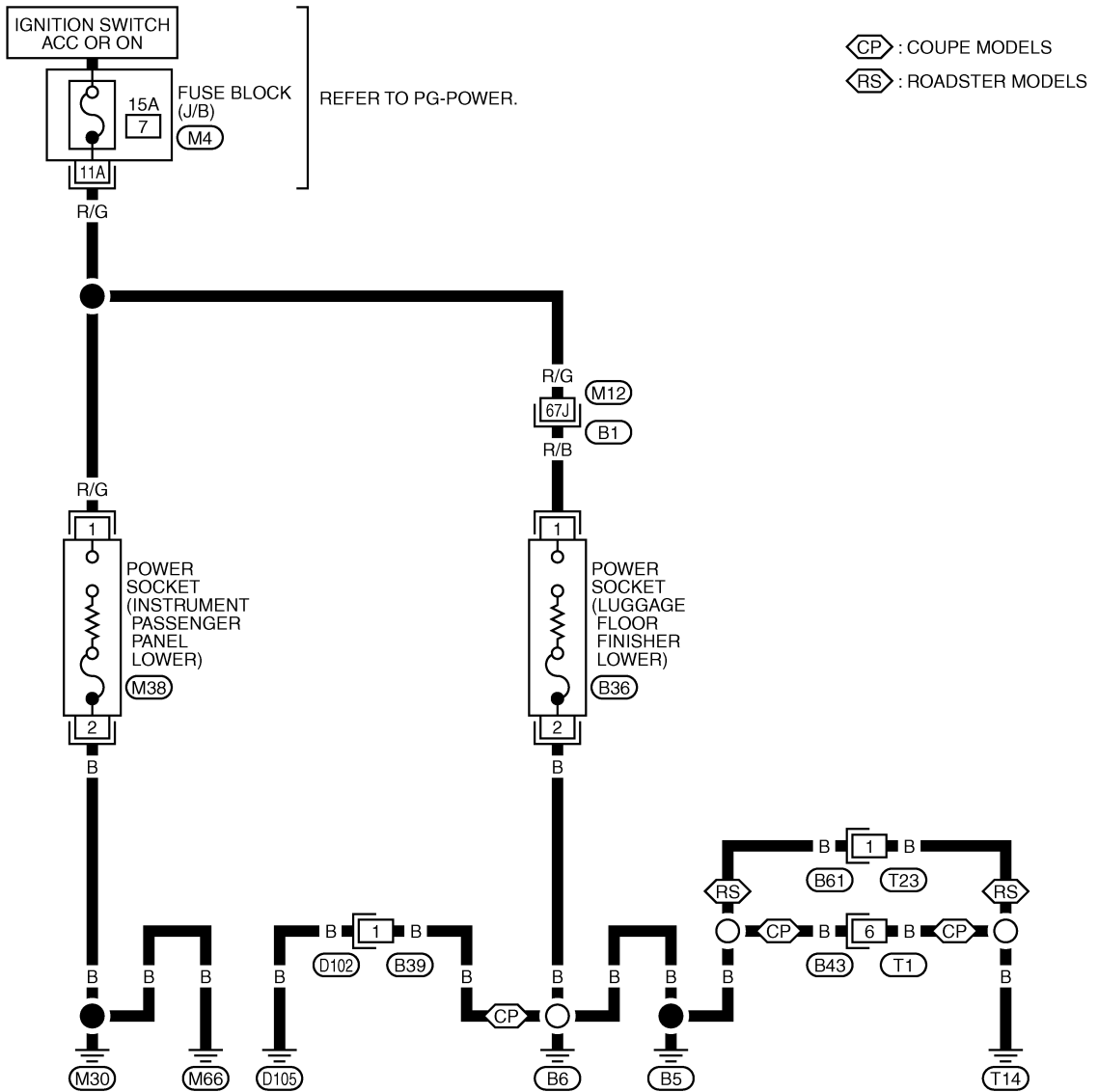
PFP:253A2

POWER SOCKET

Wiring Diagram — P/SCKT —

AKS0033M

WW-P/SCKT-01



REFER TO THE FOLLOWING.

(B1) -SUPER MULTIPLE JUNCTION (SMJ)

(M4) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT2320E

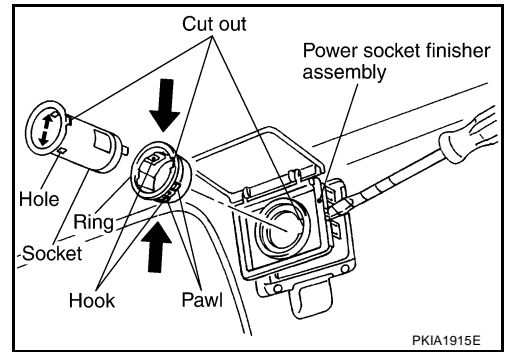
POWER SOCKET

Removal and Installation (Luggage Floor Finisher Lower)

AKS0033N

REMOVAL

1. Remove power socket finisher assembly using a clip driver or a suitable tool.
2. Disconnect power socket connector.
3. Remove inner socket from ring. While pressing hook on ring out from square hole.
4. Remove ring from power socket finisher while pressing pawls.



INSTALLATION

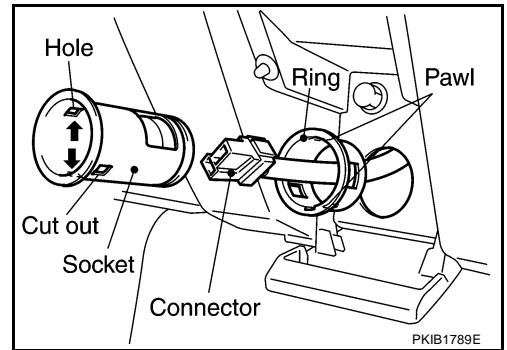
Installation is the reverse order of removal.

Removal and Installation (Instrument Passenger Panel Lower)

AKS00A2A

REMOVAL

1. Remove socket using a clip driver or a suitable tool that pressing pawls in socket hole.
2. Disconnect power socket connector.
3. Remove ring from instrument passenger panel lower.



INSTALLATION

Installation is the reverse order of removal.

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

WW

HORN

PF:25610

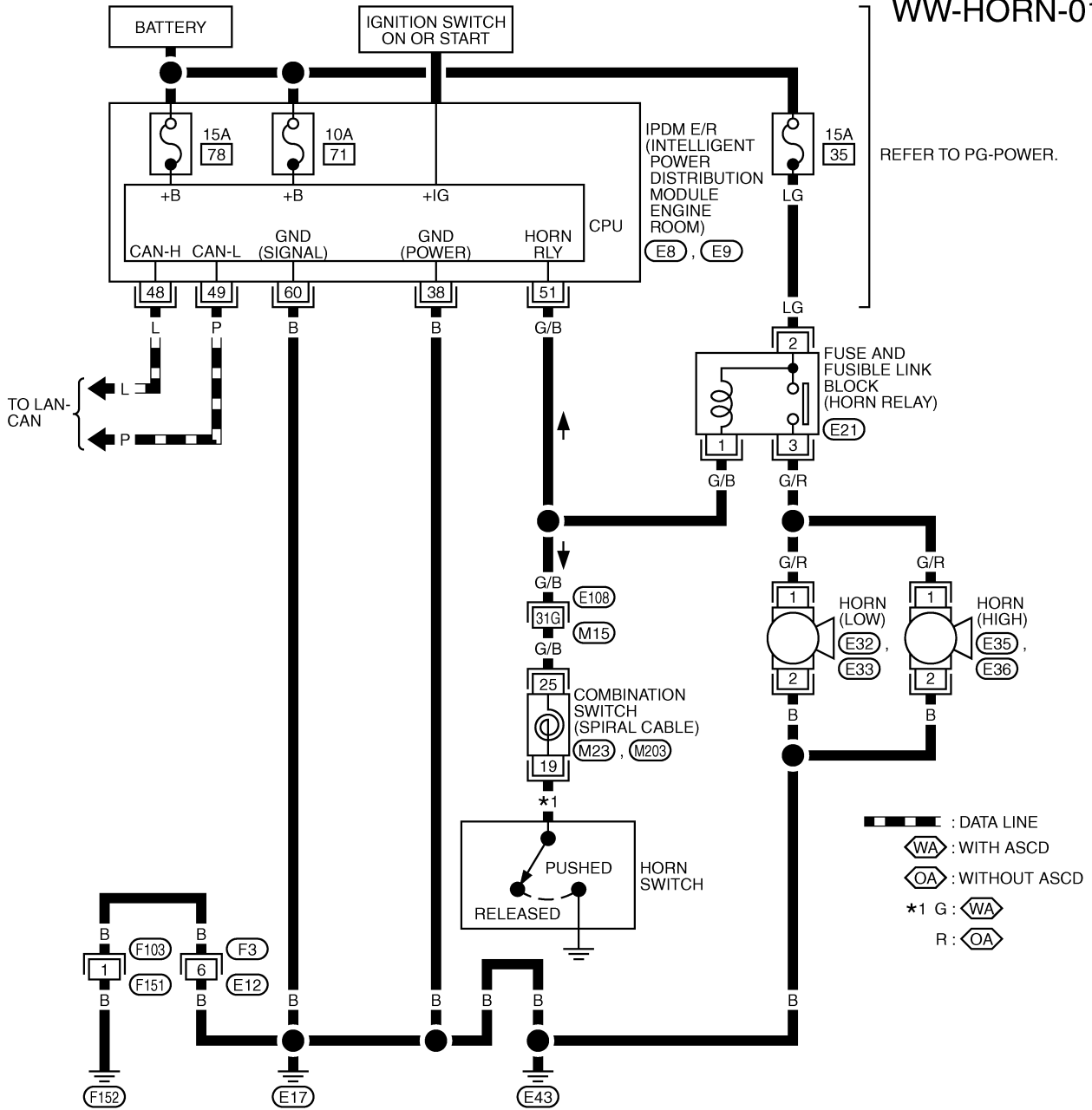
AKS00020

HORN

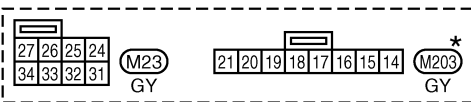
Wiring Diagram — HORN —

WW-HORN-01

REFER TO PG-POWER.

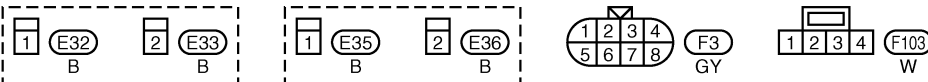
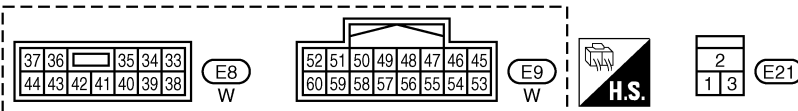


- : DATA LINE
- ⬠WA : WITH ASCD
- ⬠OA : WITHOUT ASCD
- *1 G : ⬠WA
- R : ⬠OA



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

REFER TO THE FOLLOWING.
 ⬠E108 -SUPER MULTIPLE JUNCTION (SMJ)



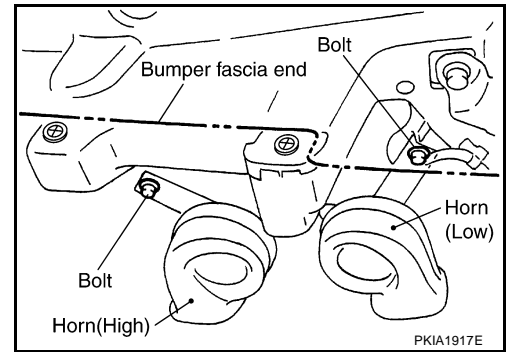
TKWT1858E

HORN

Removal and Installation

REMOVAL

1. Disconnect all horn connectors.
2. Remove horn mounting bolt and remove horn from vehicle.



INSTALLATION

Tighten horn bolt to specified torque.

Horn mounting bolt  : 5.7 N-m (0.58 kg-m, 50 in-lb)

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

WW

HORN
