

# 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”

AKS004MP

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.

### Wiring Diagrams and Trouble Diagnosis

AKS004MR

When You Read Wiring Diagrams, Refer to the Following:

- Refer to [GI-14, "How to Read Wiring Diagrams"](#) .
- Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) for power distribution circuit.

When You Perform Trouble Diagnosis, Refer to the Following:

- Refer to [GI-10, "How to Follow Trouble Diagnoses"](#) .
- Refer to [GI-26, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

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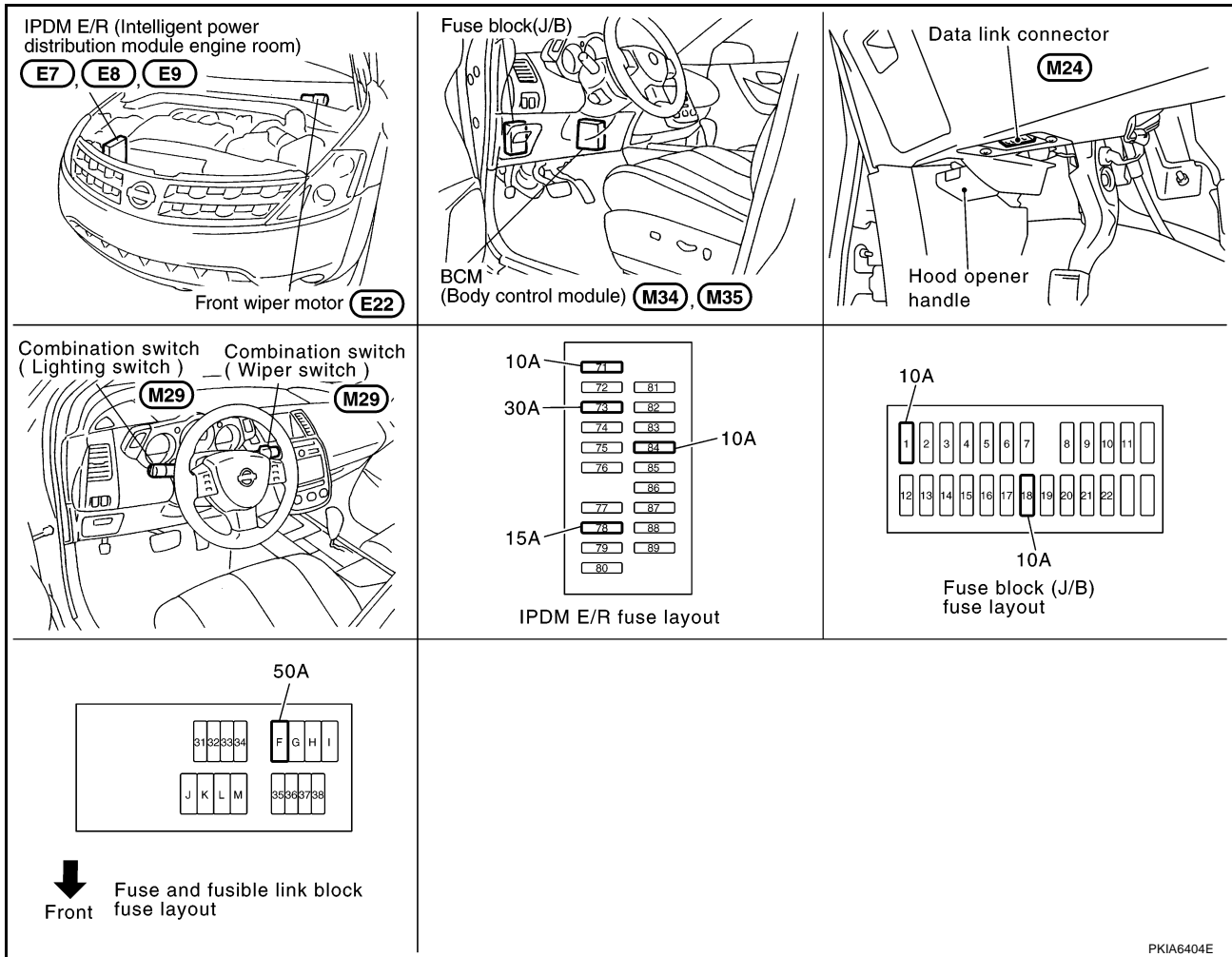
# FRONT WIPER AND WASHER SYSTEM

## FRONT WIPER AND WASHER SYSTEM

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### Components Parts and Harness Connector Location

AKS004MS



## System Description

AKS004MT

- All front wiper relays (HI, LO) are included in IPDM E/R.
- 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 (body control module) controls front wiper LO, HI, and INT (intermittent) operation.
- IPDM E/R (intelligent power distribution module engine room) operates wiper motor according to CAN communication signals from BCM (body control module).

Power is supplied at all times

- to ignition relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 50 A fusible link (letter F, located in fusible link block)
- to BCM (body control module) terminal 55
- through 10 A fuse [No. 18 located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 30 A fuse [No. 73 located in IPDM E/R (intelligent power distribution module engine room)]
- to front wiper relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15 A fuse [No. 78 located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].
- through 10 A fuse [No. 71, located in IPDM E/R (intelligent power distribution module engine room)]

# FRONT WIPER AND WASHER SYSTEM

- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

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

- through 10 A fuse [No. 1 located in fuse block (J/B)]
- to BCM (body control module) terminal 38
- through 10 A fuse [No. 84 located in IPDM E/R (intelligent power distribution module engine room)]
- through IPDM E/R (intelligent power distribution module engine room) terminal 44
- to combination switch terminal 14.

Ground is supplied

- to BCM (body control module) terminals 49 and 52
- through grounds M14 and M78
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E13, E26 and E28
- to combination switch (wiper switch) terminal 12
- through grounds M14 and M78.

## LOW SPEED WIPER OPERATION

When front wiper switch is in LO position, BCM detects the LO position of the wiper switch by BCM wiper switch reading function.

BCM sent front wiper request signal (LO) to IPDM E/R by CAN communication line

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

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

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

Ground is supplied

- to front wiper motor terminal 1
- through grounds E13, E26 and E28.

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

## HI SPEED WIPER OPERATION

When front wiper switch is in HI position, BCM detects the HI position of the wiper switch by BCM wiper switch reading function.

BCM sent front wiper request signal (HI) to IPDM E/R by CAN communication line

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

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

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

Ground is supplied

- to front wiper motor terminal 1
- through grounds E13, E26 and E28.

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

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# FRONT WIPER AND WASHER SYSTEM

## INTERMITTENT OPERATION

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

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

### 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 |
| Wiper dial position 1 | Small                           | ON                                     | ON                                     | ON                                     |
| Wiper dial position 2 |                                 | ON                                     | ON                                     | OFF                                    |
| Wiper dial position 3 |                                 | ON                                     | OFF                                    | OFF                                    |
| Wiper dial position 4 | ↓                               | OFF                                    | OFF                                    | OFF                                    |
| Wiper dial position 5 |                                 | OFF                                    | OFF                                    | ON                                     |
| Wiper dial position 6 |                                 | OFF                                    | ON                                     | ON                                     |
| Wiper dial position 7 |                                 | Large                                  | OFF                                    | ON                                     |

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 (Combination switch output 3 and input 1 are performing.)
- Intermittent operation dial position 2: ON (Combination switch output 5 and input 1 are performing.)
- Intermittent operation dial position 3: ON (Combination switch output 4 and output 2 are performing.)

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.

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

When 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.

## AUTO STOP OPERATION

With wiper switch turned OFF, wiper motor will continue to operate until wiper arms reach windshield base.

When wiper arms are not located at base of windshield with wiper switch OFF, power is provided

- from IPDM E/R terminal 21
- to front wiper motor terminal 3, in order to continue wiper motor operation at low speed.

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

- to IPDM E/R terminal 32
- through front wiper motor terminal 4
- through front wiper motor terminal 1
- through grounds E13, E26 and E28.

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

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

Power is supplied

- through 10 A fuse (No. 84 located in IPDM E/R)
- to combination switch terminal 14

# FRONT WIPER AND WASHER SYSTEM

- through combination switch (wiper switch) terminal 13
- to front and rear washer motor terminal 1
- to front and rear washer motor terminal 2
- through combination switch (wiper switch) terminal 11
- to combination switch terminal 12
- through grounds M14 and M78.

With ground is supplied, front and rear washer motor is operated.

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

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

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

## FAIL-SAFE FUNCTION

IPDM E/R includes a fail-safe function to prevent malfunction of electrical components controlled by CAN communications in CAN communications occurs.

When fail-safe status is initiated, IPDM E/R remains in steady unit signals are received.

## COMBINATION SWITCH READING FUNCTION

### Description

- BCM reads combination switch (wiper) status, and controls related systems such as head lamps 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, 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.

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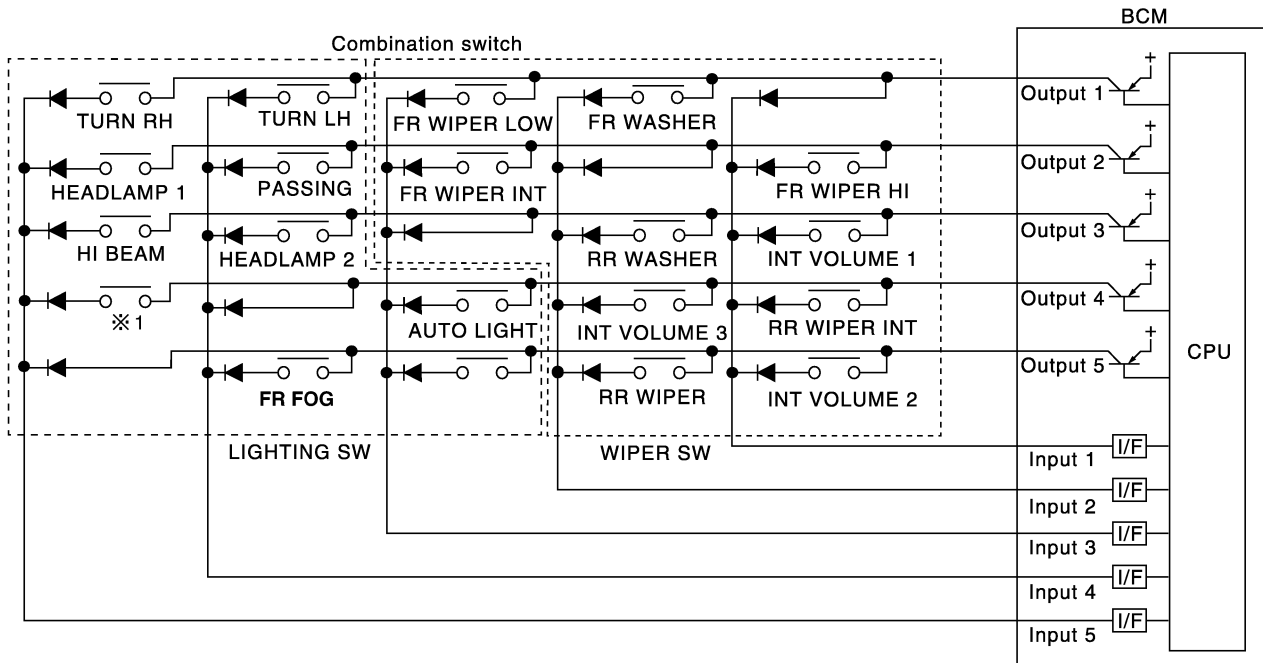
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# FRONT WIPER AND WASHER SYSTEM

- 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

SKIA4958E

## 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 | —                | —                | AUTO LIGHT ON        | AUTO LIGHT OFF        | —                | —                |
| COMB SW INPUT 4 | TURN LH ON       | TURN LH OFF      | PASSING ON       | PASSING OFF      | HEAD-LAMP 2 ON   | HEAD-LAMP 2 OFF  | —                    | —                     | FR FOG ON        | FR FOG 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 | —                | —                |

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## Sample Operation: (When Wiper Switch Turned ON)

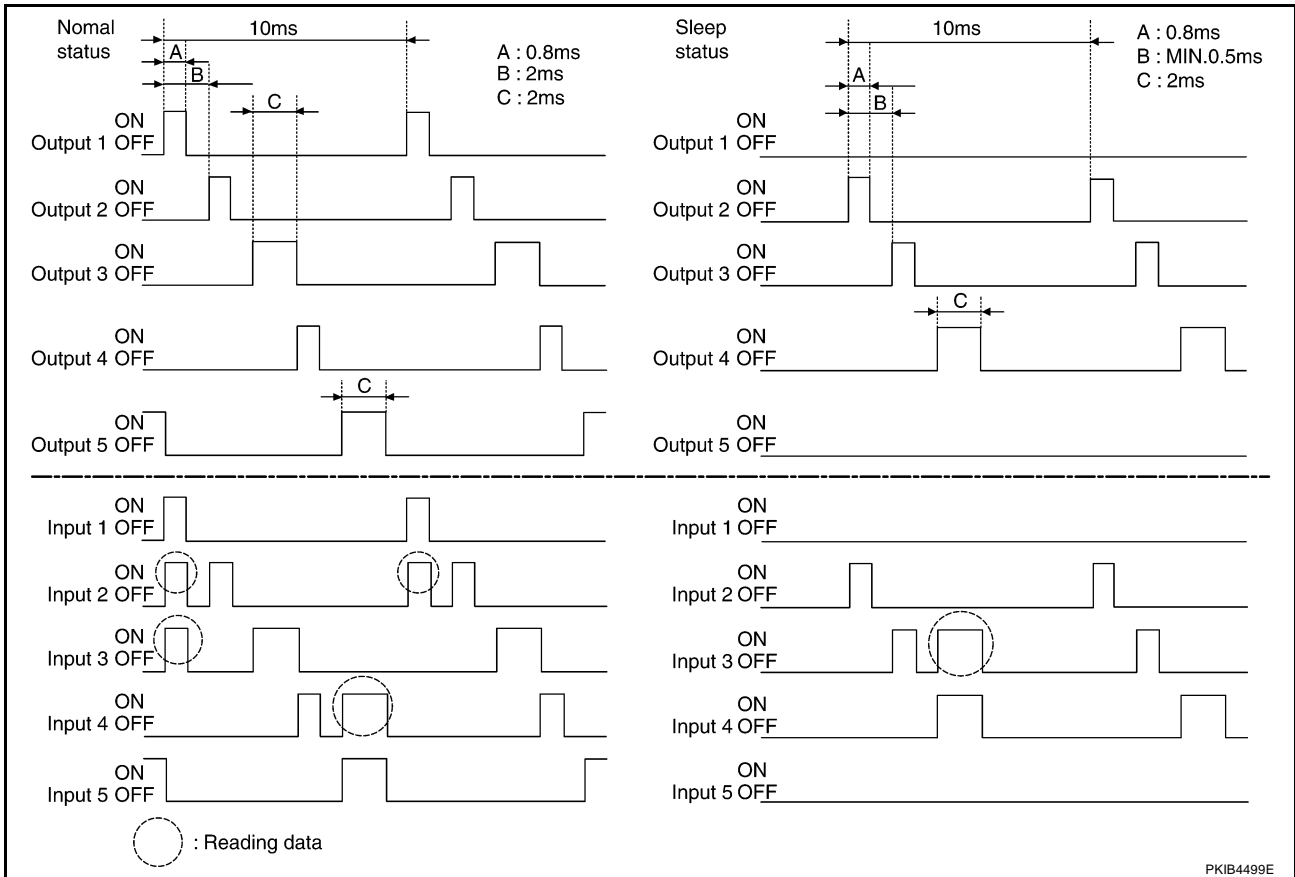
- When wiper switch is turned ON, contact in combination switch turns ON. At this time if OUTPUT 1 transistor is activated, BCM detects that voltage changes in INPUT 3.





# FRONT WIPER AND WASHER SYSTEM

- 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 10 ms, and only input from light switch system is accepted.



## CAN Communication System Description

AKS005MC

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

AKS007R1

Refer to [LAN-8, "CAN Communication Unit"](#) .

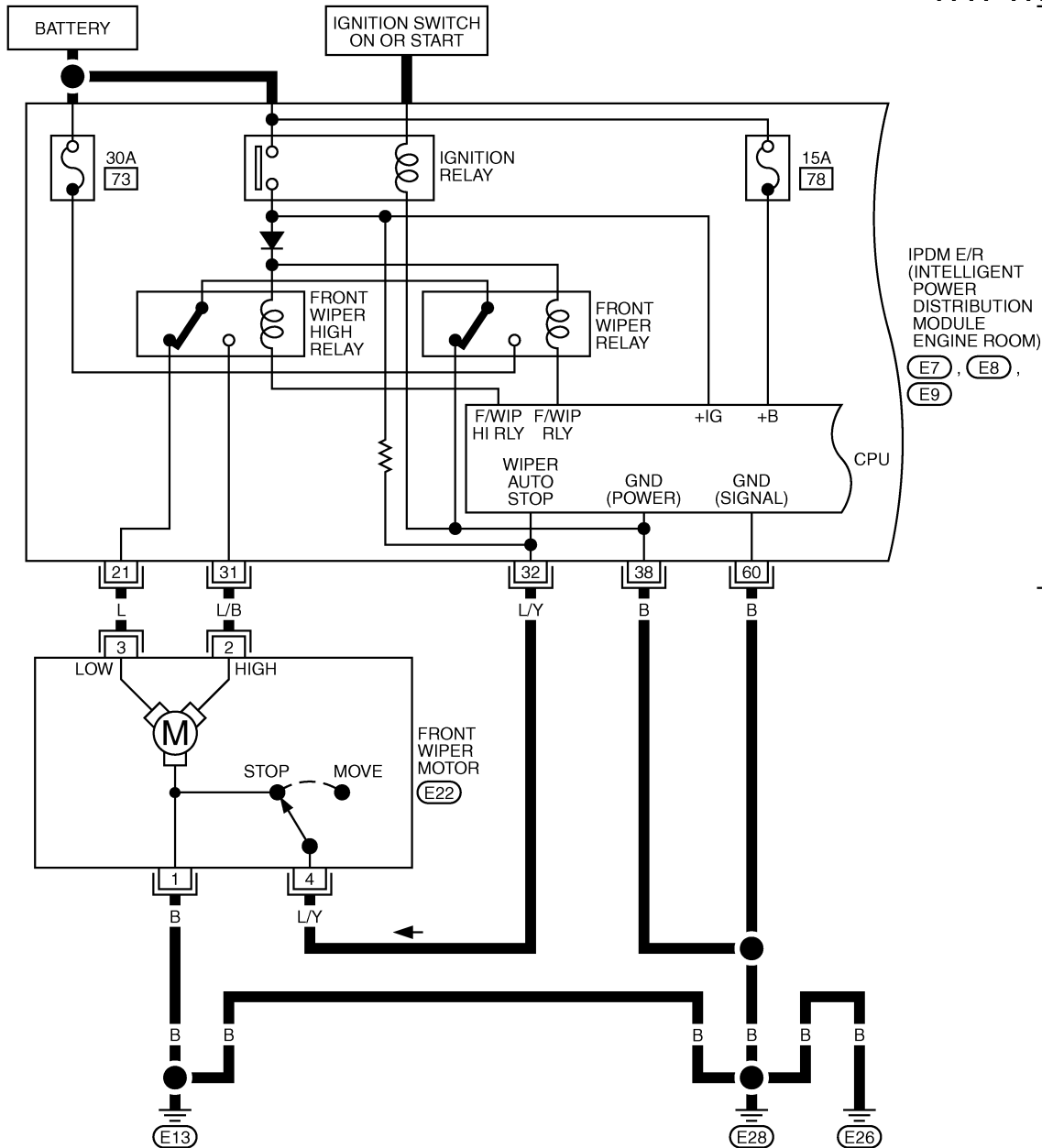


# FRONT WIPER AND WASHER SYSTEM

## Wiring Diagram — WIPER —

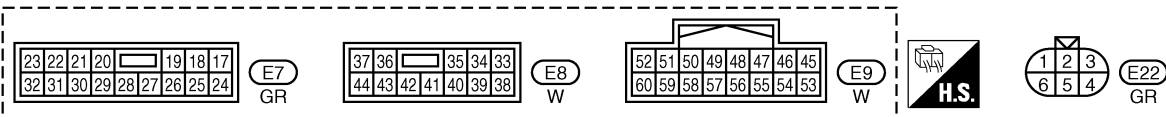
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WW-WIPER-01



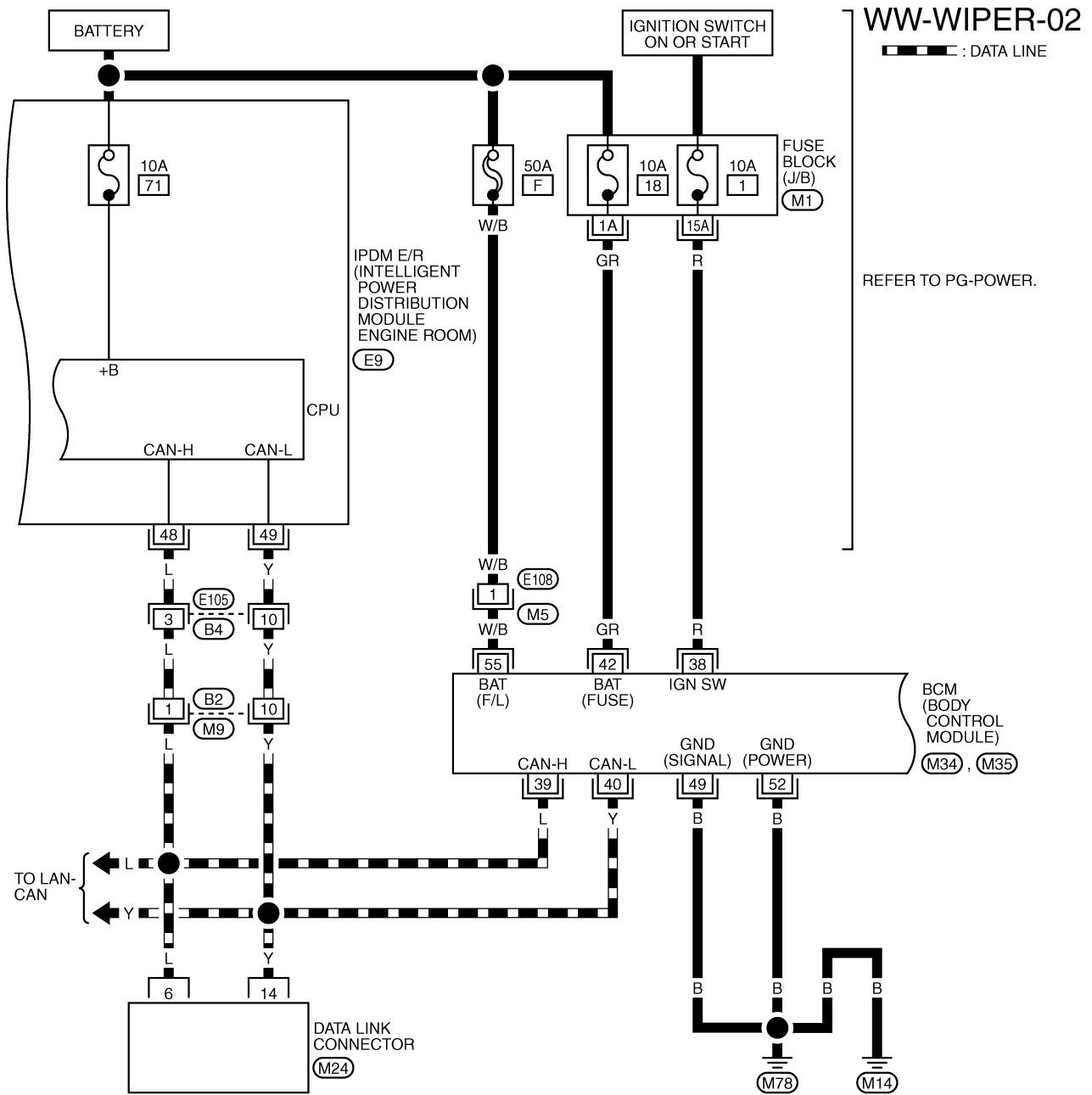
IPDM E/R  
(INTELLIGENT  
POWER  
DISTRIBUTION  
MODULE  
ENGINE ROOM)  
E7, E8,  
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REFER TO  
PG-POWER.



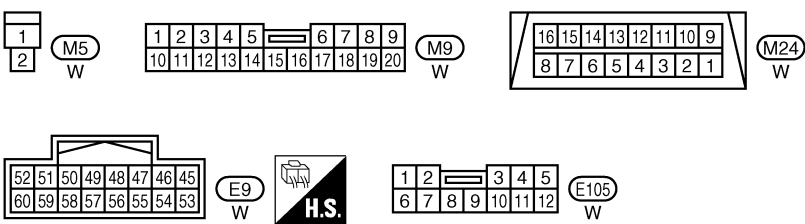
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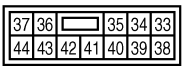
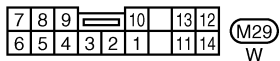
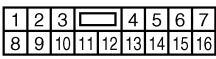
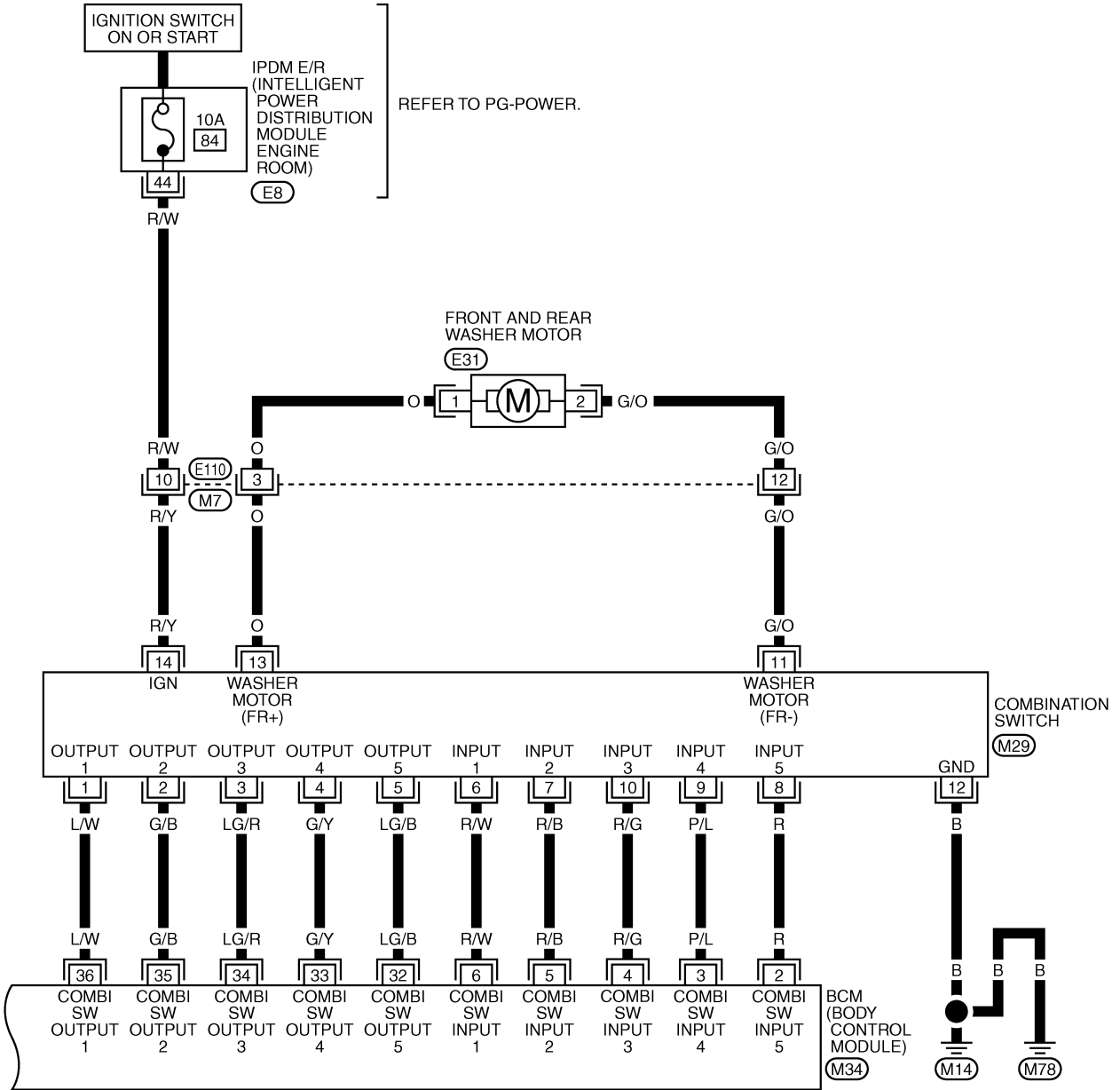


REFER TO THE FOLLOWING.  
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B)  
 (M34), (M35) - ELECTRICAL UNITS

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# FRONT WIPER AND WASHER SYSTEM

WW-WIPER-03



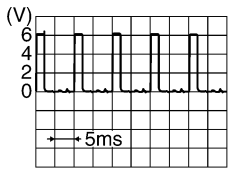
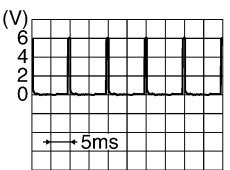
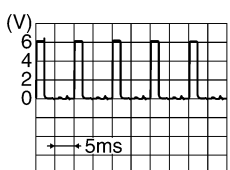
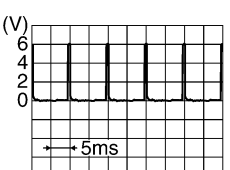

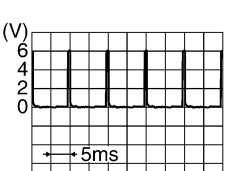
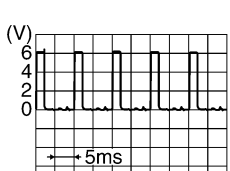
REFER TO THE FOLLOWING.  
(M34) -ELECTRICAL UNITS

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# FRONT WIPER AND WASHER SYSTEM

## Terminals and Reference Values for BCM

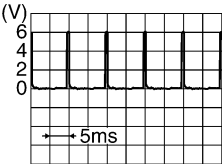
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| Terminal No.<br>(Wire color) | Signal name                 | Measuring condition |   | Reference value   |
|------------------------------|-----------------------------|---------------------|---|---|
|                              |                             | Ignition switch     | Operation or condition  |   |
| 2 (R)                        | Combination switch input 5  | ON                  | <ul style="list-style-type: none"> <li>Lighting switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5291E</p>   |
| 3 (P/L)                      | Combination switch input 4  | ON                  | <ul style="list-style-type: none"> <li>Lighting switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5292E</p>   |
| 4 (R/G)                      | Combination switch input 3  | ON                  | <ul style="list-style-type: none"> <li>Lighting switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5291E</p>   |
| 5 (R/B)                      | Combination switch input 2  | ON                  | <ul style="list-style-type: none"> <li>Lighting switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5292E</p> |
| 6 (R/W)                      | Combination switch input 1  | ON                  |   |   |
| 32 (LG/B)                    | Combination switch output 5 | ON                  | <ul style="list-style-type: none"> <li>Lighting switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5291E</p> |
| 33 (G/Y)                     | Combination switch output 4 | ON                  | <ul style="list-style-type: none"> <li>Lighting switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5292E</p> |
| 34 (LG/R)                    | Combination switch output 3 | ON                  | <ul style="list-style-type: none"> <li>Lighting switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5291E</p> |

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# FRONT WIPER AND WASHER SYSTEM

| Terminal No.<br>(Wire color) | Signal name                 | Measuring condition |   | Reference value   |
|------------------------------|-----------------------------|---------------------|---|---|
|                              |                             | Ignition switch     | Operation or condition  |   |
| 35 (G/B)                     | Combination switch output 2 | ON                  | <ul style="list-style-type: none"> <li>● Lighting switch and wiper switch OFF</li> <li>● Wiper dial position 4</li> </ul> |  |
| 36 (L/W)                     | Combination switch output 1 |                     |   |   |
| 38 (R)                       | Ignition switch (ON)        | ON                  | —   | Battery voltage   |
| 39 (L)                       | CAN H                       | —                   | —   | —   |
| 40 (Y)                       | CAN L                       | —                   | —   | —   |
| 42 (GR)                      | Battery power supply        | OFF                 | —   | Battery voltage   |
| 49 (B)                       | Ground                      | ON                  | —   | Approx. 0 V   |
| 52 (B)                       | Ground                      | ON                  | —   | Approx. 0 V   |
| 55 (W/B)                     | Battery power supply        | OFF                 | —   | Battery voltage   |

## Terminals and Reference Values for IPDM E/R

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| Terminal No.<br>(Wire color) | Signal name                       | Measuring condition |                        | Reference value |                 |
|------------------------------|-----------------------------------|---------------------|------------------------|-----------------|-----------------|
|                              |                                   | Ignition switch     | Operation or condition |                 |                 |
| 21 (L)                       | Low speed signal                  | ON                  | Wiper switch           | OFF             | Approx. 0 V     |
|                              |                                   |                     |                        | LO              | Battery voltage |
| 31 (L/B)                     | High speed signal                 | ON                  | Wiper switch           | OFF             | Approx. 0 V     |
|                              |                                   |                     |                        | HI              | Battery voltage |
| 32 (L/Y)                     | Wiper auto - stop signal          | ON                  | Wiper operating        |                 | Battery voltage |
|                              |                                   |                     | Wiper stopped          |                 | Approx. 0 V     |
| 38 (B)                       | Ground                            | ON                  | —                      | Approx. 0 V     |                 |
| 44 (R/W)                     | Combination switch (washer motor) | ON                  | —                      | Battery voltage |                 |
| 48 (L)                       | CAN H                             | —                   | —                      | —               |                 |
| 49 (Y)                       | CAN L                             | —                   | —                      | —               |                 |
| 60 (B)                       | Ground                            | ON                  | —                      | Approx. 0 V     |                 |

## How to Proceed With Trouble Diagnosis

AKS00AMU

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-4, "System Description"](#) .
3. Perform the preliminary check. Refer to [WW-17, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END



# FRONT WIPER AND WASHER SYSTEM

AKS00AMV

## Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

Inspection Procedure

### 1. CHECK FUSE

- Check if wiper and washer fuse is blown.

| Unit   | Power source         | Fuse and fusible link No. |
|--|----------------------|---------------------------|
| Front wiper motor, front wiper relay, front wiper high relay | Battery              | 73                        |
| BCM  | Battery              | F                         |
|  |                      | 18                        |
|  | Ignition ON or START | 1                         |
| Combination switch   | Ignition ON or START | 84                        |

Refer to [WW-12, "Wiring Diagram — WIPER —"](#).

OK or NG

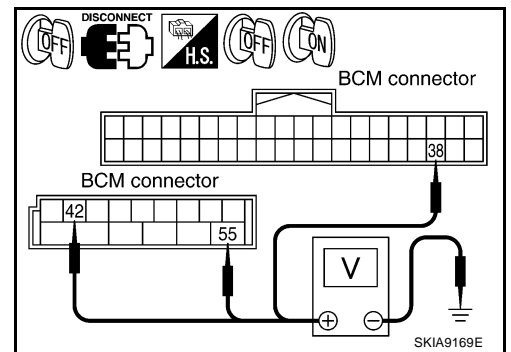
OK >> GO TO 2.

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.

| Terminals                           |          | (-)    | Ignition switch position |                 |
|-------------------------------------|----------|--------|--------------------------|-----------------|
| (+) Connector Terminal (Wire color) |          |        | OFF                      | ON              |
| M35                                 | 42 (GR)  | Ground | Battery voltage          | Battery voltage |
| M35                                 | 55 (W/B) |        | Battery voltage          | Battery voltage |
| M34                                 | 38 (R)   |        | 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

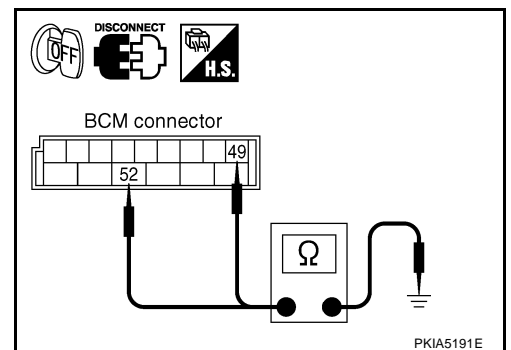
Check continuity between BCM harness connector and ground.

| Terminals |                       | Ground | Continuity |
|-----------|-----------------------|--------|------------|
| Connector | Terminal (Wire color) |        | Yes        |
| M35       | 49 (B)                | Ground | Yes        |
|           | 52 (B)                |        |            |

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



# FRONT WIPER AND WASHER SYSTEM

## CONSULT-II Functions (BCM)

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CONSULT-II can display each diagnostic item using the following diagnostic test modes: self-diagnostic results, data monitor and active test through data reception and command transmission via the BCM CAN communication line.

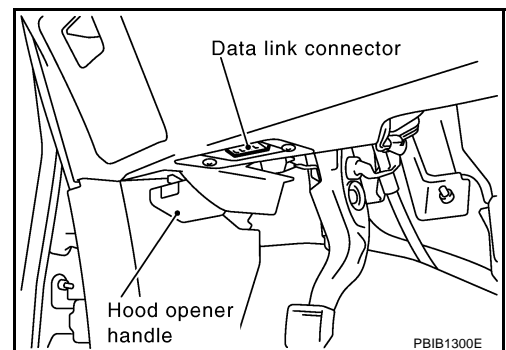
| BCM diagnosis position | Check item, Diagnosis mode | Description  |
|------------------------|----------------------------|--|
| Wiper                  | WORK SUPPORT               | Changes the setting for wiper speed at intermittent.                       |
|                        | DATA MONITOR               | Displays BCM input data in real time.                                      |
|                        | ACTIVE TEST                | Device operation can be checked by applying a drive signal to device.      |
| BCM                    | CAN DIAG SUPPORT MNTR      | The result of transmit/receive diagnosis of CAN communication can be read. |

## CONSULT-II OPERATION

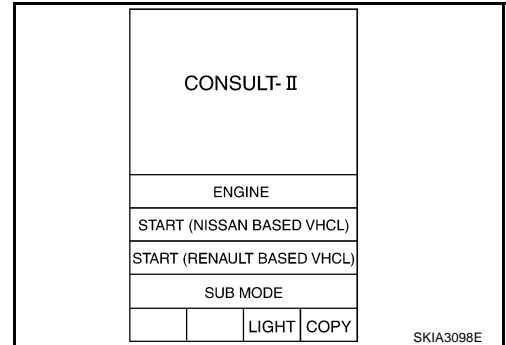
### CAUTION:

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.

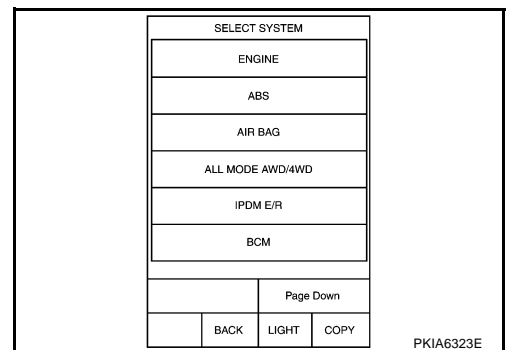
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



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

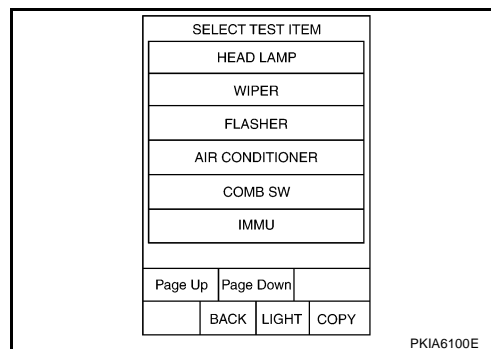


3. Touch "BCM" on "SELECT SYSTEM" screen.  
If "BCM" is not indicated, refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



# FRONT WIPER AND WASHER SYSTEM

4. Touch "WIPER".



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## 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 sensing type wiper control mode can be changed in this mode. Selects vehicle speed sensing type wiper control mode between two ON/OFF. | ON         | ×               |
|                     |  | OFF        | —               |

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## 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 "DATA MONITOR" screen.

|                     |  |
|---------------------|--|
| ALL SIGNALS         | Monitors all the signals.                |
| SELECTION FROM MENU | Selects and monitors individual signals. |

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touched items to be monitored. If "ALL SIGNALS" is selected, all items will be monitored.
6. Touch "RECORDING START" while monitoring to record the status of the item being monitored. To stop recording, touch "RECORDING STOP".

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### Display Item List

| Monitor item [operation or unit] | Display content   |
|----------------------------------|---|
| 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.         |

# FRONT WIPER AND WASHER SYSTEM

| Monitor item [operation or unit]    | Display content   |
|-------------------------------------|---|
| FR WIPER STOP [ON/OFF]              | Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto-stop signal.       |
| VEHICLE SPEED [km/h]                | Displays vehicle speed status as judged from vehicle speed signal.                        |
| RR WIPER ON [ON/OFF]                | Displays "Rear Wiper ON (ON)/Other (OFF)" status as judged from wiper switch signal.      |
| RR WIPER INT [ON/OFF]               | Displays "Rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.     |
| RR WASHER SW [ON/OFF]               | Displays "Rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal. |
| RR WIPER STOP [ON/OFF]              | Displays "Rear Wiper Stop (ON)/Other (OFF)" status, as judged from wiper switch signal.   |
| RR WIPER STP2 <sup>NOTE</sup> [OFF] | —   |

## NOTE:

This item is displayed, but cannot monitor it.

## ACTIVE TEST

### Operation Procedure

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

### Display Item List

| Test item          | Indication on CONSULT-II display | Description   |
|--------------------|----------------------------------|---|
| Front wiper output | FR WIPER                         | With a certain operation (OFF, HI, LO, INT), the front wiper can be operated. |
| Rear wiper output  | RR WIPER                         | Rear wiper can be operated by any ON-OFF operation.                           |

## CONSULT-II Functions (IPDM E/R)

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CONSULT-II can display each diagnostic item using the following diagnostic test modes: self-diagnostic results, data monitor and active test through data reception and command transmission via the IPDM E/R CAN communication line.

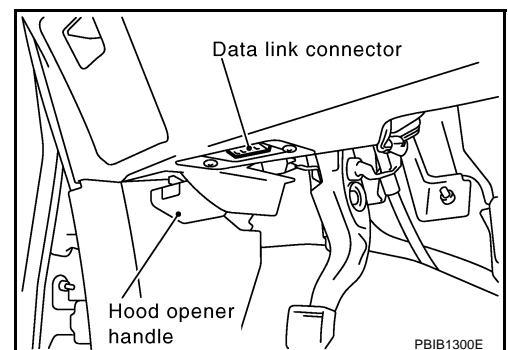
| Inspection Item, Diagnosis Mode | Description  |
|---------------------------------|--|
| SELF-DIAG RESULTS               | The IPDM E/R performs diagnosis of the CAN communication and self-diagnosis.         |
| DATA MONITOR                    | The input/output data of the IPDM E/R is displayed in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

## CONSULT-II OPERATION

### CAUTION:

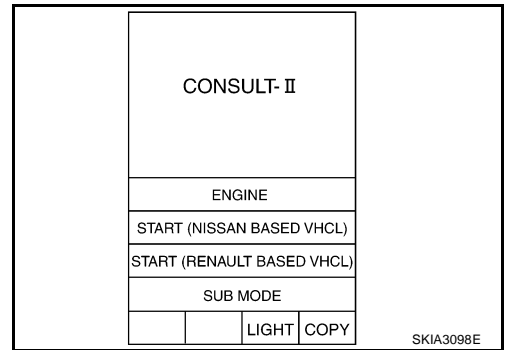
If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

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



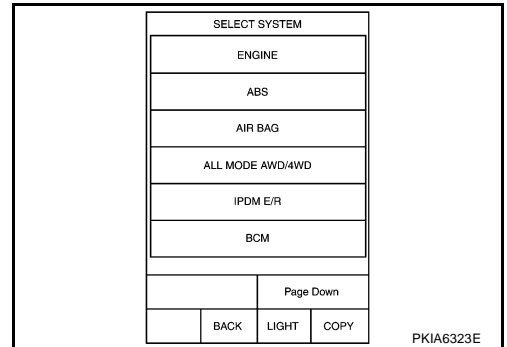
# FRONT WIPER AND WASHER SYSTEM

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

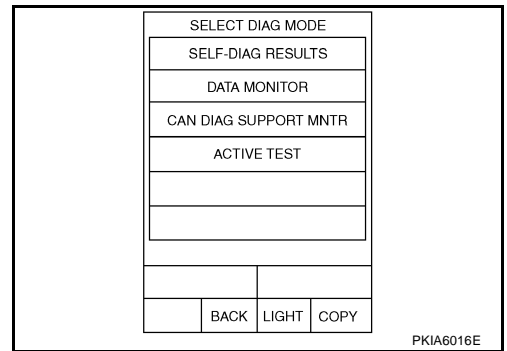


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3. Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, print "SELECT SYSTEM" screen, then refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



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



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## SELF-DIAG RESULTS

Refer to [PG-20, "SELF-DIAG RESULTS"](#).

## DATA MONITOR

### Operation Procedure

1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
2. Touch "ALL SIGNALS", "MAIN SIGNALS", or "SELECTION FROM MENU" on the "DATA MONITOR" screen.

|                     |                                 |
|---------------------|---------------------------------|
| ALL SIGNALS         | All items will be monitored.    |
| MAIN SIGNALS        | Monitor the predetermined item. |
| SELECTION FROM MENU | Select any item for monitoring. |

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

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# FRONT WIPER AND WASHER SYSTEM

## 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 the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

### ACTIVE TEST

#### Operation Procedure

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

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

## Front Wiper Does Not Operate

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### CAUTION:

- During IPDM E/R fail-safe control, front wipers may not operate. Refer to [PG-17, "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

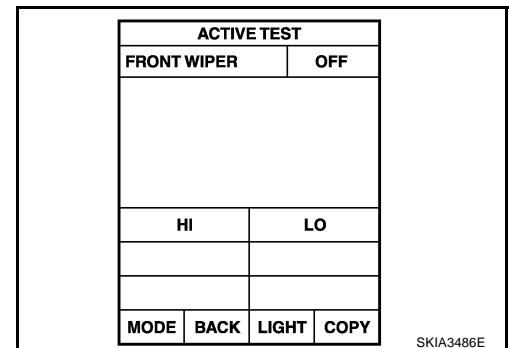
1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "LO" or "HI" screen.

 Without CONSULT-II

Start up auto active test. Refer to [PG-23, "Auto Active Test"](#) .

Does the front wiper operate normally?

- YES >> GO TO 6.  
NO >> GO TO 2.



### 2. CHECK FUSE

1. Turn ignition switch OFF.
2. Check fuse No.73 of IPDM E/R.

OK or NG

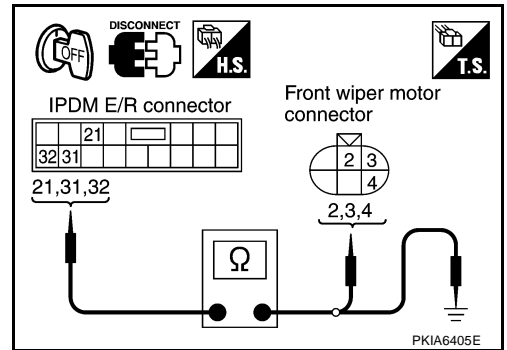
- OK >> GO TO 3.  
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse, Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

# FRONT WIPER AND WASHER SYSTEM

## 3. CHECK FRONT WIPER CIRCUIT

1. Disconnect IPDM E/R connector and front wiper motor connector.
2. Check continuity between IPDM E/R harness connector and front wiper motor harness connector terminal.

| Terminals |                       |                   |                       | Continuity |
|-----------|-----------------------|-------------------|-----------------------|------------|
| IPDM E/R  |                       | Front wiper motor |                       |            |
| Connector | Terminal (Wire color) | Connector         | Terminal (Wire color) |            |
| E7        | 21 (L)                | E22               | 3 (L)                 | Yes        |
|           | 31 (L/B)              |                   | 2 (L/B)               |            |
|           | 32 (L/Y)              |                   | 4 (L/Y)               |            |



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

| Terminals |                       |        | Continuity |
|-----------|-----------------------|--------|------------|
| IPDM E/R  |                       |        |            |
| Connector | Terminal (Wire color) |        |            |
| E7        | 21 (L)                | Ground | No         |
|           | 31 (L/B)              |        |            |
|           | 32 (L/Y)              |        |            |

### OK or NG

- OK >> GO TO 4.  
 NG >> Repair harness or connector.

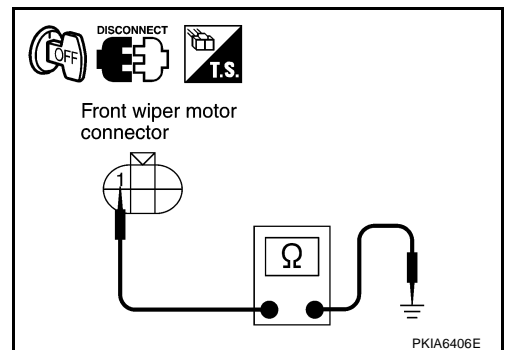
## 4. CHECK GROUND CIRCUIT

Check continuity between front wiper motor harness connector E22 terminal 1 (B) and ground.

**1 (B) – Ground : Continuity should exist.**

### OK or NG

- OK >> GO TO 5.  
 NG >> Repair harness or connector.



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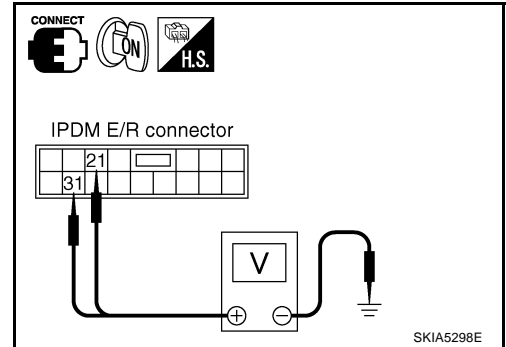
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# FRONT WIPER AND WASHER SYSTEM

## 5. CHECK IPDM E/R

④ With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" on 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 E7 terminal 21 (L) or 31 (L/B) and ground while front wiper (HI, LO) is operating.



| Terminals    |                       | (-)    | Condition    | Voltage         |
|--------------|-----------------------|--------|--------------|-----------------|
| IPDM E/R (+) |                       |        |              |                 |
| Connector    | Terminal (Wire color) |        |              |                 |
| E7           | 21 (L)                | Ground | 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-23, "Auto Active Test"](#).
3. Check voltage between IPDM E/R harness connector E7 terminal 21 (L) or 31 (L/B) and ground while front wiper (HI, LO) is operating.

| Terminals    |                       | (-)    | Condition    | Voltage         |
|--------------|-----------------------|--------|--------------|-----------------|
| IPDM E/R (+) |                       |        |              |                 |
| Connector    | Terminal (Wire color) |        |              |                 |
| E7           | 21 (L)                | Ground | 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.

## 6. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

④ With CONSULT-II

Select "BCM" on CONSULT-II. With "WIPER" on "DATA MONITOR", confirm that "FRONT WIPER INT", "FRONT WIPER LOW", and "FRONT WIPER HI" turn ON-OFF according to wiper switch operation.

⊗ Without CONSULT-II

Refer to [LT-140, "Combination Switch Inspection"](#).

OK or NG

- OK >> GO TO 7.  
 NG >> Check wiper Switch. Refer to [LT-140, "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 COPY |

SKIA5300E



# FRONT WIPER AND WASHER SYSTEM

## 7. 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-14, "Removal and Installation of BCM"](#) .

CAN COMM CIRCUIT>>Check CAN communication line of BCM.  
GO TO [BCS-14, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

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

SKIA1039E

## Front Wiper Does Not Return to Stop Position

### 1. CHECK CIRCUIT BETWEEN IPDM E/R AND WIPER MOTOR

Ⓟ With CONSULT-II

Select "IPDM E/R" on CONSULT-II. With data monitor, confirm 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       |        |
| MOTOR FAN REQ | 1      |
| AC COMP REQ   | OFF    |
| TAIL&CLR REQ  | OFF    |
| HL LO REQ     | OFF    |
| HL HI REQ     | OFF    |
| FR FOG REQ    | OFF    |
| FR WIP REQ    | STOP   |
| WIP AUTO STOP | STOP P |
| WIP PROT      | OFF    |
| Page DOWN     |        |
| RECORD        |        |
| MODE          | BACK   |
| LIGHT         | COPY   |

SKIA5301E

### 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 E22 terminal 4 (L/Y).

**32 (L/Y) – 4 (L/Y) : Continuity should exist.**

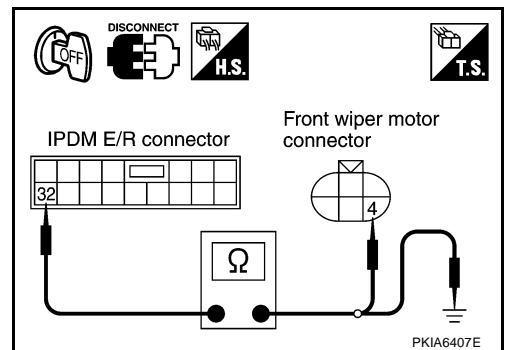
4. Check continuity between IPDM E/R harness connector E7 terminal 32 (L/Y) and Ground.

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

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

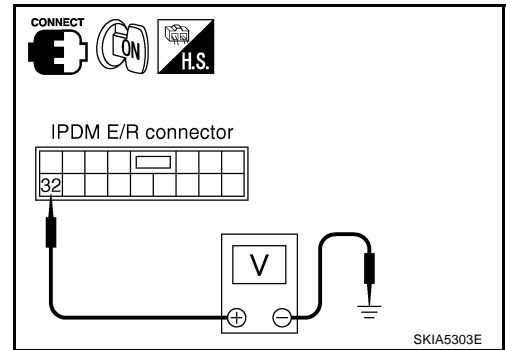


# FRONT WIPER AND WASHER SYSTEM

## 3. CHECK 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 E7 terminal 32 (L/Y) and ground while front wiper motor is stopped and while it is operating.

| Terminals    |                       | 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 LO Does Not Operate

AKS00A00

### 1. ACTIVE TEST

With CONSULT-II

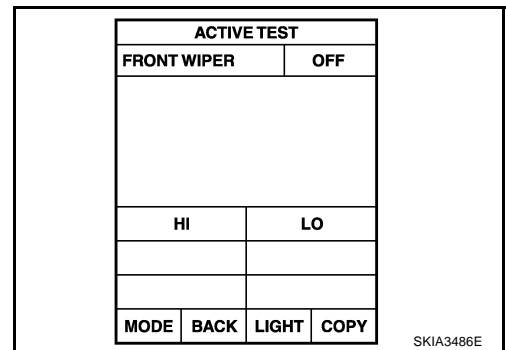
1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Touch "LO" screen.

Without CONSULT-II

Start up auto active test. Refer to [PG-23, "Auto Active Test"](#).

Does the front wiper operate normally?

- YES >> GO TO [LT-140, "Combination Switch Inspection"](#).  
 NO >> GO TO 2.



## 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 (L) and front wiper motor harness E22 connector terminal 3 (L).

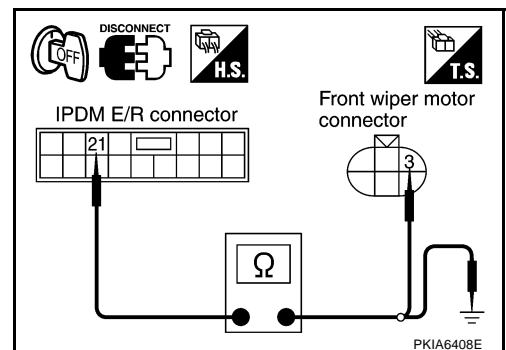
**21 (L) – 3 (L) : Continuity should exist.**

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

**21 (L) – Ground : Continuity should not exist.**

OK or NG

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



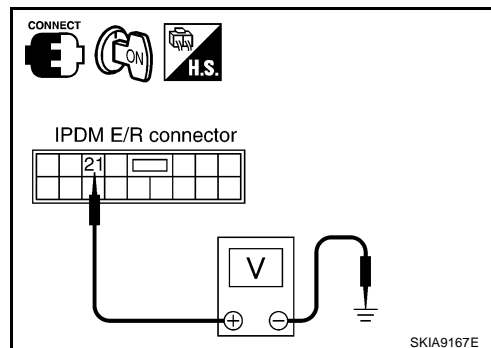
# FRONT WIPER AND WASHER SYSTEM

## 3. CHECK IPDM E/R

☑ With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" on 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 (L) and ground while front wiper LO is operating.

**21 (L) – Ground : Battery voltage should exist.**



☒ Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test. Refer to [PG-23, "Auto Active Test"](#).
3. Check voltage between IPDM E/R harness connector E7 terminal 21 (L) and ground while front wiper LO is operating.

**21 (L) – Ground : Battery voltage should exist.**

OK or NG

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

### Only Front Wiper HI Does Not Operate

AKS00AN1

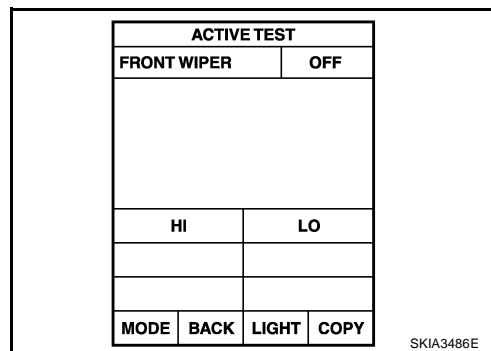
#### 1. ACTIVE TEST

☑ With CONSULT-II

1. Select "IPDM E/R" on 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-23, "Auto Active Test"](#)



Does the front wiper operate normally?

- YES >> GO TO [LT-140, "Combination Switch Inspection"](#).  
 NO >> GO TO 2.

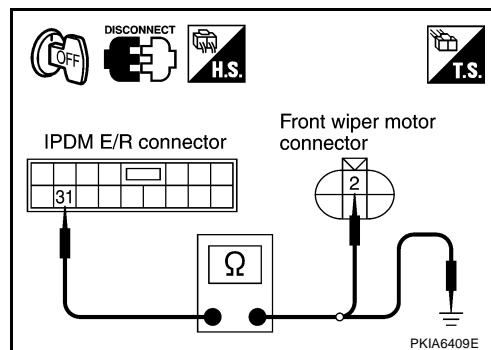
#### 2. CHECK FRONT WIPER MOTOR CIRCUIT

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 E22 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.

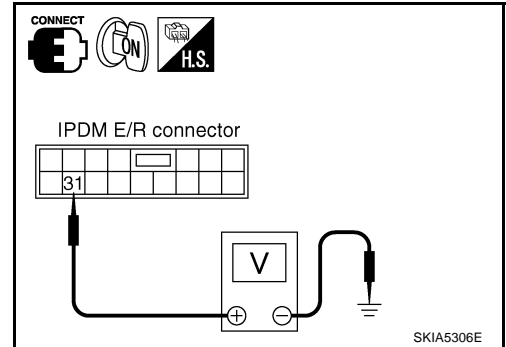
# FRONT WIPER AND WASHER SYSTEM

## 3. CHECK IPDM E/R

④ With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "IPDM E/R" on 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 should exist.**



⊗ Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Start up auto active test. Refer to [PG-23, "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 should exist.**

OK or NG

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

### Only Front Wiper INT Does Not Operate

AKS00AN2

Refer to [LT-140, "Combination Switch Inspection"](#).

### Front Wiper Interval Time Is Not Controlled by Vehicle Speed

AKS00AN3

#### 1. CHECK FUNCTION OF COMBINATION METER

Confirm that speedometer operates normally.

Does the front wiper operate normally?

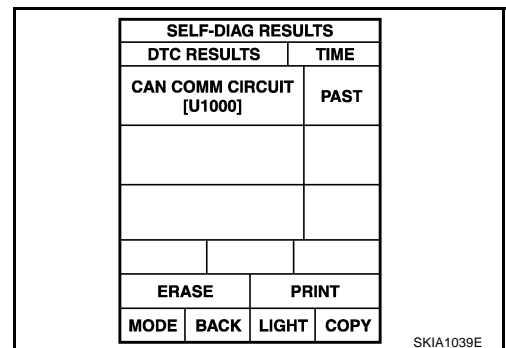
- YES >> GO TO 2.  
 NO >> Combination meter vehicle speed system malfunction. GO TO [DI-19, "Vehicle Speed Signal Inspection"](#).

#### 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-14, "Removal and Installation of BCM"](#).  
 CAN COMM CIRCUIT >> Check CAN communication line of BCM. GO TO [BCS-14, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).



# FRONT WIPER AND WASHER SYSTEM

## Front Wiper Intermittent Operation Switch Position Cannot Be Adjusted

AKS00AN4

### 1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "INT VOLUME" changes in order from 1 to 7 according to operation of the intermittent switch dial position.

#### OK or NG

- OK >> Replace BCM. Refer to [LT-140, "Combination Switch Inspection"](#).
- NG >> Replace wiper switch.

| DATA MONITOR |   |
|--------------|---|
| MONITOR      |   |
| INT VOLUME   | 5 |

SKIA4234E

## Wipers Do Not Wipe When Front Washer Operates

AKS00AN5

### 1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

Select "BCM" on CONSULT-II. With "WIPER" on "DATA MONITOR", make sure "FR WASHER SW" turns ON-OFF according to operation of front washer switch.

**When front wiper switch washer position : FR WASHER SW ON**

#### OK or NG

- OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch.

| DATA MONITOR |    |
|--------------|----|
| MONITOR      |    |
| FR WASHER SW | ON |

PKIA5545E

## After Front Wipers Operate for 10 Seconds, They Stop for 20 Seconds, and after repeating the operations five times, they become inoperative

AKS00AN6

#### 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

① With CONSULT-II

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

② Without CONSULT-II  
GO TO 2.

#### OK or NG

- OK >> Replace IPDM E/R.
- NG >> GO TO 2.

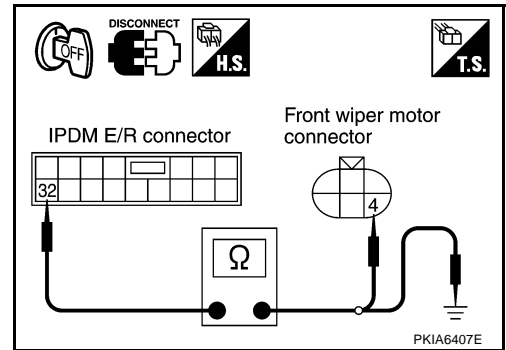
| DATA MONITOR  |        |
|---------------|--------|
| MONITOR       |        |
| WIP AUTO STOP | STOP P |

PKIA5546E

# FRONT WIPER AND WASHER SYSTEM

## 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 E22 terminal 4 (L/Y).  
**32 (L/Y) - 4 (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.**



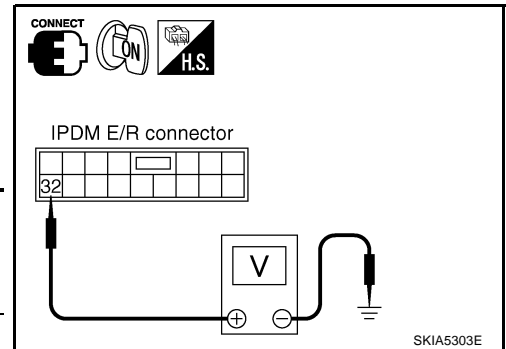
OK or NG

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

## 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.

| Terminals    |                       | 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.

## Front Wipers Do Not Stop

AKS00AN7

### 1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

Ⓛ With CONSULT-II

Select "BCM" on CONSULT-II. With "WIPER" on "DATA MONITOR", confirm that "FRONT WIPER INT", "FRONT WIPER LOW", "FRONT WIPER HI", and "FRONT WASHER SW" turn ON-OFF according to wiper switch operation.

Ⓧ Without CONSULT-II

Refer to [LT-140, "Combination Switch Inspection"](#).

OK or NG

- OK >> Replace IPDM E/R.  
NG >> Check wiper Switch. Refer to [LT-140, "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 COPY |

SKIA5300E

# FRONT WIPER AND WASHER SYSTEM

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

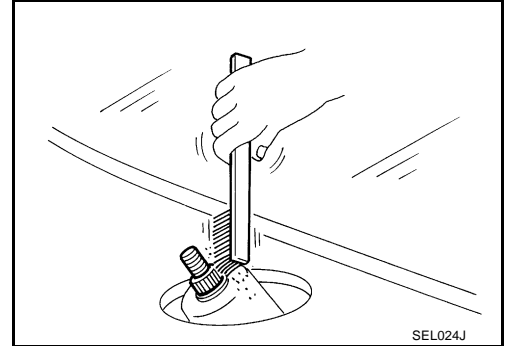
AKS00AN8

### REMOVAL

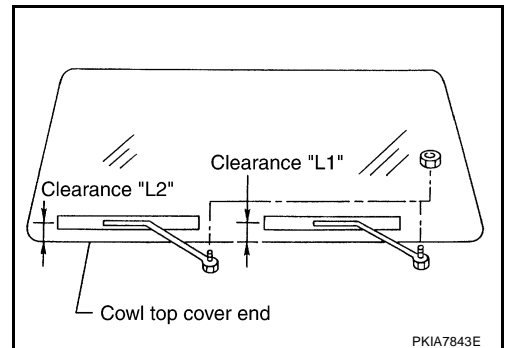
1. Operate wiper motor, and stop it at the auto stop position.
2. Remove wiper arm caps and mounting nuts, and remove wiper arms from vehicle.

### INSTALLATION

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



2. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (auto stop).
3. Push wiper arm onto pivot shaft, paying attention to blind spline.
4. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L1" & "L2" immediately before tightening nut.
5. Eject washer fluid. Turn on wiper switch to operate wiper motor and then turn it "OFF".
6. Ensure that wiper blades stop within clearance "L1" & "L2".



**Clearance "L1" : 47.9 mm (1.886 in)**

**Clearance "L2" : 44.1 mm (1.736 in)**

- Tighten wiper arm nuts to specified torque.

**Front wiper arm nuts  : 23.5 N-m (2.4 kg-m, 17 ft-lb)**

7. Attach wiper arm caps.

### ADJUSTMENT

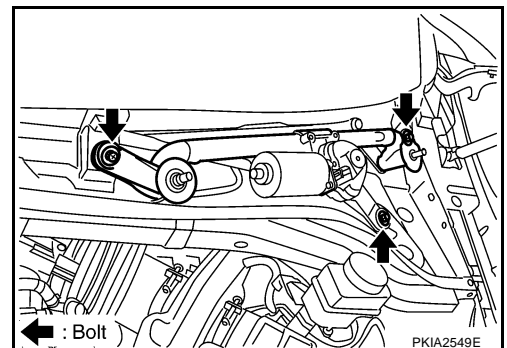
Refer to [WW-31, "INSTALLATION"](#) .

## Removal and Installation of Front Wiper Motor and Linkage

AKS00AN9

### REMOVAL

1. Remove wiper arms. Refer to [WW-31, "REMOVAL"](#) .
2. Remove cowl top cover. Refer to [EI-21, "COWL TOP"](#) in "EI" section.
3. Remove washer tube.
4. Disconnect wiper motor connector.
5. Remove wiper motor and linkage mounting bolts, and remove wiper motor and linkage.



# FRONT WIPER AND WASHER SYSTEM

## INSTALLATION

1. Install wiper motor and linkage to the vehicle.
2. Connect wiper motor assembly to the connector. Turn wiper switch ON to operate 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-21, "COWL TOP"](#) in "EI" section.
5. Install wiper arms. Refer to [WW-31, "Removal and Installation of Front Wiper Arms, Adjustment of Wiper Arms Stop Location"](#)

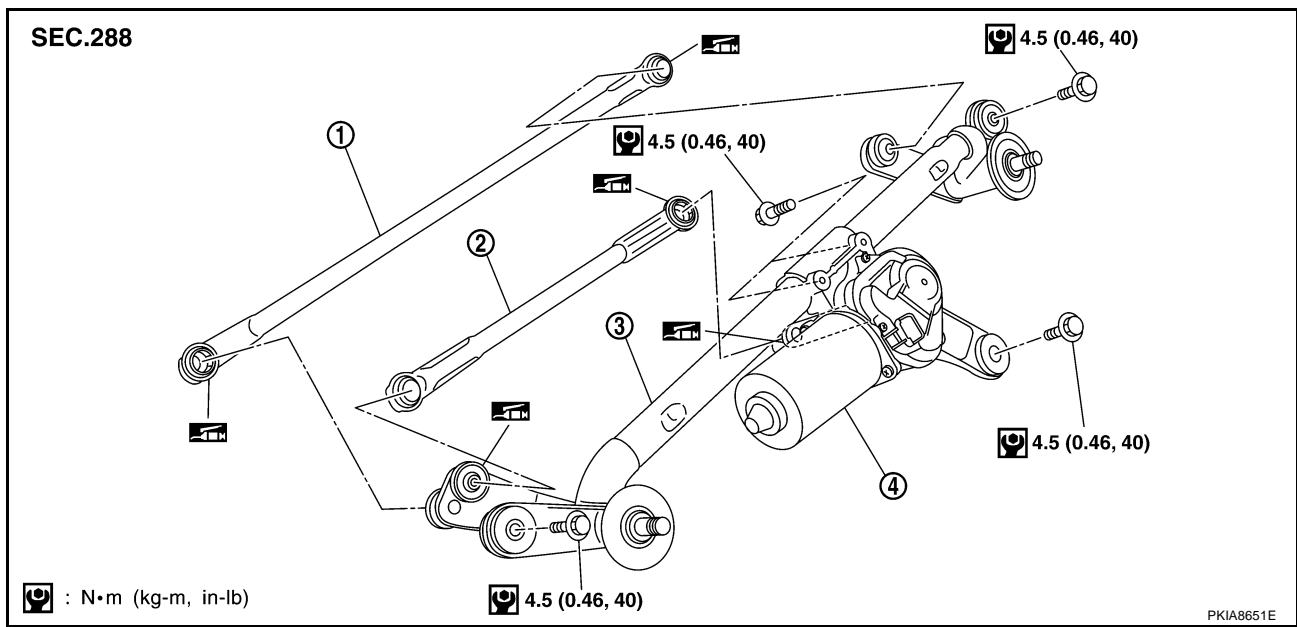
**Wiper motor and linkage mounting bolts**  : 4.5 N·m (0.46 kg·m, 40 in·lb)

### CAUTION:

- Do not drop the wiper motor or cause it to contact other parts.
- Check grease conditions of the motor arm and wiper link joint (at retainer side). Apply grease if necessary.

## Disassembly and Assembly of Front Wiper Motor and Linkage

AKS00ANA



1. Wiper link 1
4. Wiper motor

2. Wiper link 2

3. Wiper frame

## DISASSEMBLY

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

## ASSEMBLY

Paying attention to the work listed below, assemble in reverse order of disassembly.

**Wiper motor mounting bolts**  : 4.5 N·m (0.46 kg·m, 40 in·lb)



# FRONT WIPER AND WASHER SYSTEM

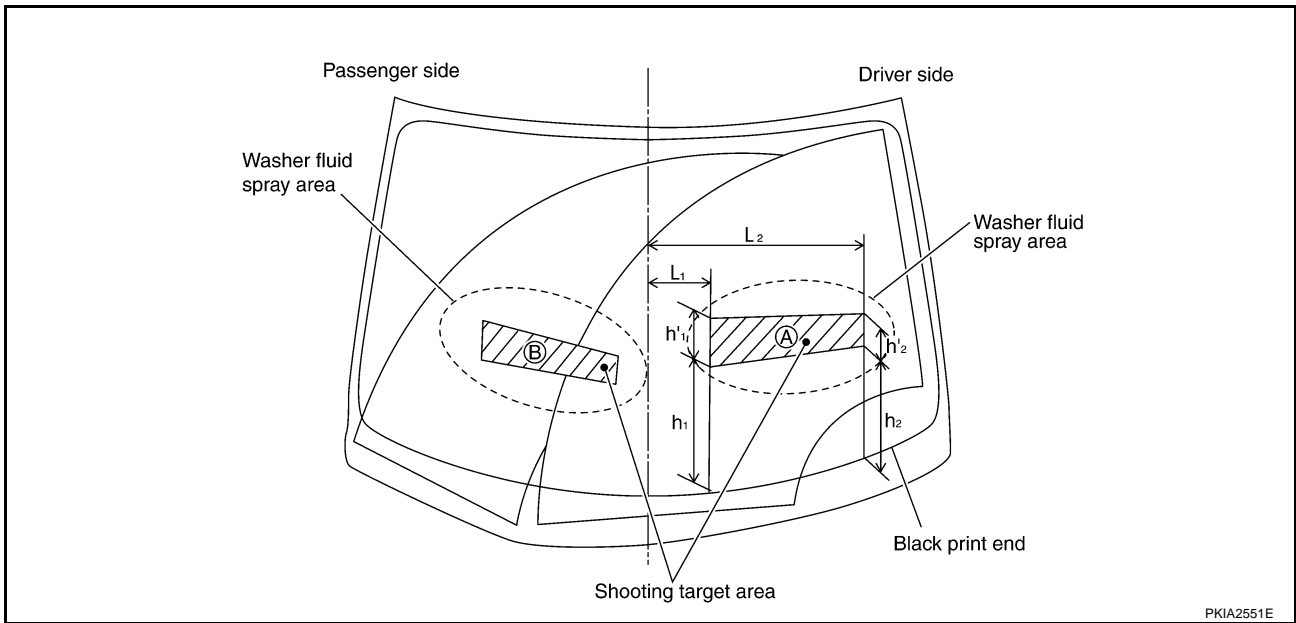
AKS00ANB

## Washer Nozzle Adjustment

- In this model, the washer nozzle has a non-adjustment nozzle and requires no adjusting.
- If necessary, ensure that washer fluid spray covers at least the area "A" and "B" as shown in the figure. (See the illustration)
- If the above is not satisfied, confirm that the washer nozzle is installed correctly on the cowl top cover and/or cowl top cover is installed correctly on the body.
- If they are installed correctly, and the fluid is still spraying out of the shooting target areas, replace them with new washer nozzle and/or cowl top cover.

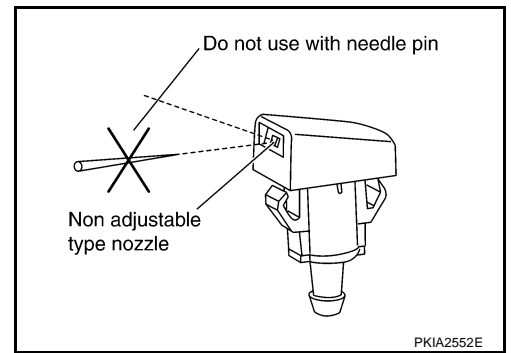
Unit: mm (in)

| Spray position | h1            | h'1          | h2            | h'2          | L1         | L2          |
|----------------|---------------|--------------|---------------|--------------|------------|-------------|
| A              | 288.8 (11.37) | 153.8 (6.06) | 225.5 (8.88)  | 207.4 (8.17) | 200 (7.87) | 490 (19.29) |
| B              | 278 (10.94)   | 115.8 (4.56) | 283.8 (11.17) | 126.5 (4.98) | 80 (3.15)  | 420 (16.54) |



### CAUTION:

**Do not adjust the washer nozzle with needle pin. If attempts are made to adjust the washer nozzle with needle pin, damage may occur.**



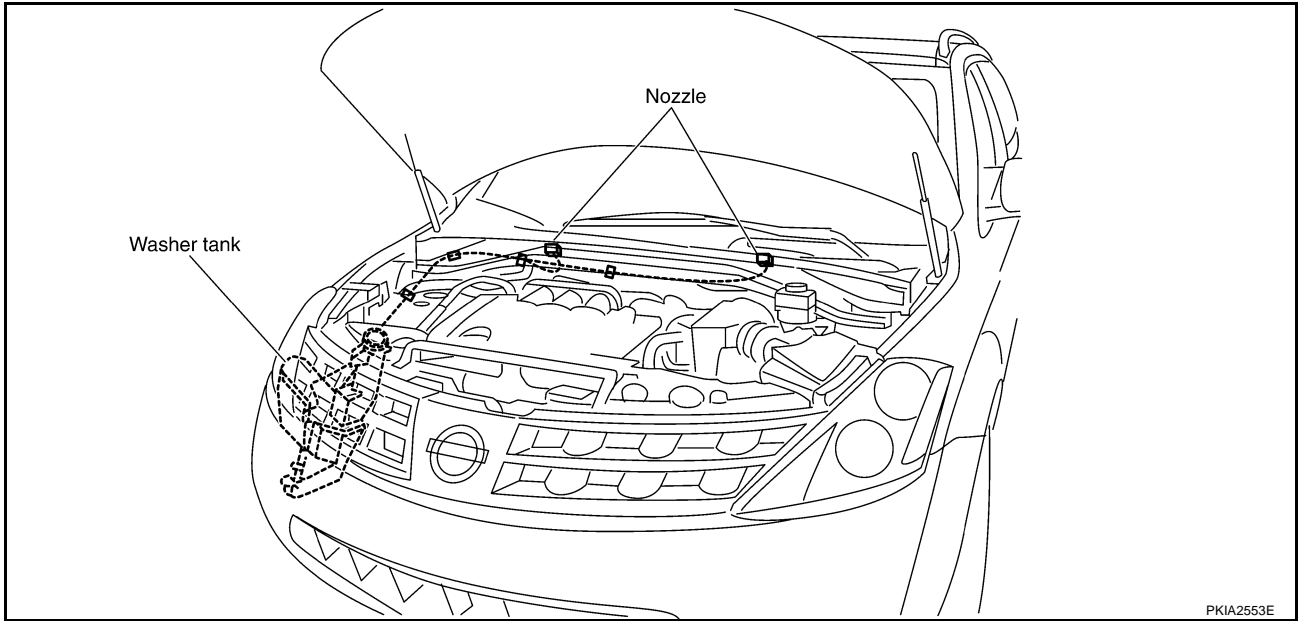
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
L  
M

WW

# FRONT WIPER AND WASHER SYSTEM

## Washer Tube Layout

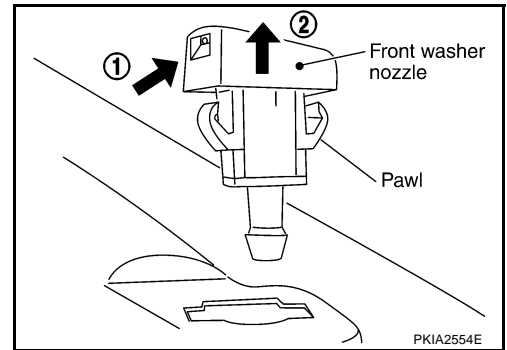
AKS00ANC



## Removal and Installation of Front Washer Nozzle

AKS00AND

1. Push the Washer nozzle in direction by the arrow as shown in the figure and remove it.
2. Remove washer tube.



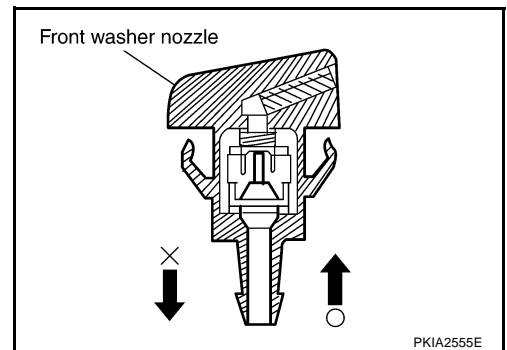
## INSTALLATION

Install in the reverse order of removal.

## Inspection for Washer Nozzle

**CHECK VALVE INSPECTION**  
Blow air in the injection direction, and make sure air flows only one way. Make sure that the reverse direction (inhale) is not possible.

AKS00ANE



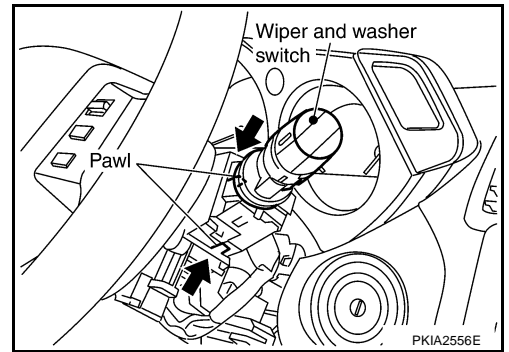
# FRONT WIPER AND WASHER SYSTEM

## Removal and Installation of Front Wiper and Washer Switch

AKS00ANF

### REMOVAL

1. Remove instrument driver lower panel, steering column lower cover and combination meter. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "EI" 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

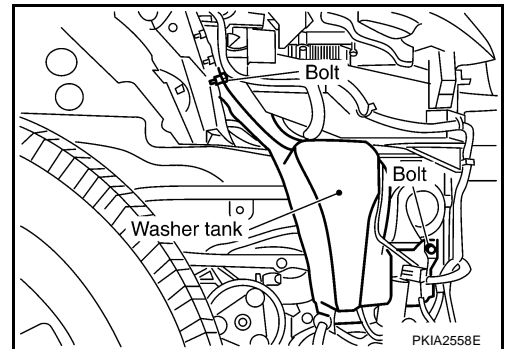
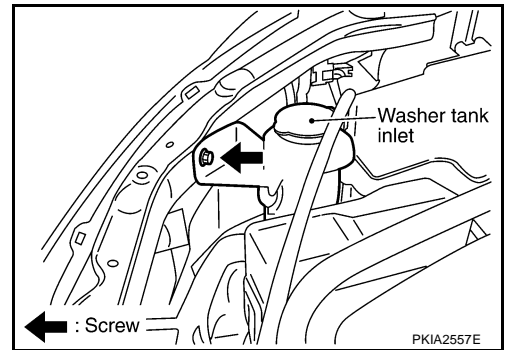
Install in the reverse order of removal.

## Removal and Installation of Washer Tank

AKS00ANG

### REMOVAL

1. Remove the washer tank inlet mounting screw.
2. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
3. Remove front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
4. Disconnect washer pump connector.
5. Remove washer tank mounting bolt.
6. Remove washer tube, and remove washer tank from the vehicle.



### INSTALLATION

Note the following, and install in the reverse order of removal.

#### CAUTION:

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

Washer tank mounting bolt  : 4.5 N·m (0.46 kg·m, 40 in·lb)

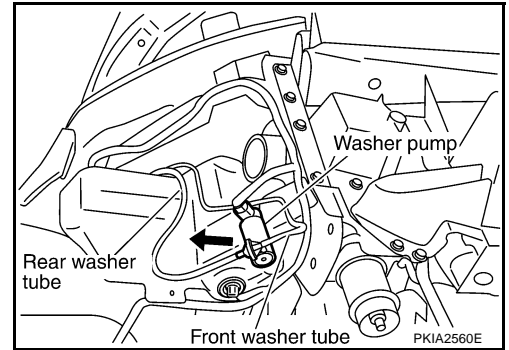
# FRONT WIPER AND WASHER SYSTEM

AKS00ANH

## Removal and Installation of Washer Pump

### REMOVAL

1. Remove fender protector (front). Refer to [EI-22, "FENDER PROTECTOR"](#) in "EI" section.
2. Remove the right side of front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
3. Disconnect washer pump connector and tube.
4. Pull out washer pump in direction shown by the arrow in the figure. Remove washer pump from washer tank.



### INSTALLATION

Note the following, and install in the reverse order of removal.

#### CAUTION:

- When installing washer pump, there should be no packing twists, etc.
- Do not misconnect the front tube and the rear tube to each side when the washer tube is being connected to the washer pump.

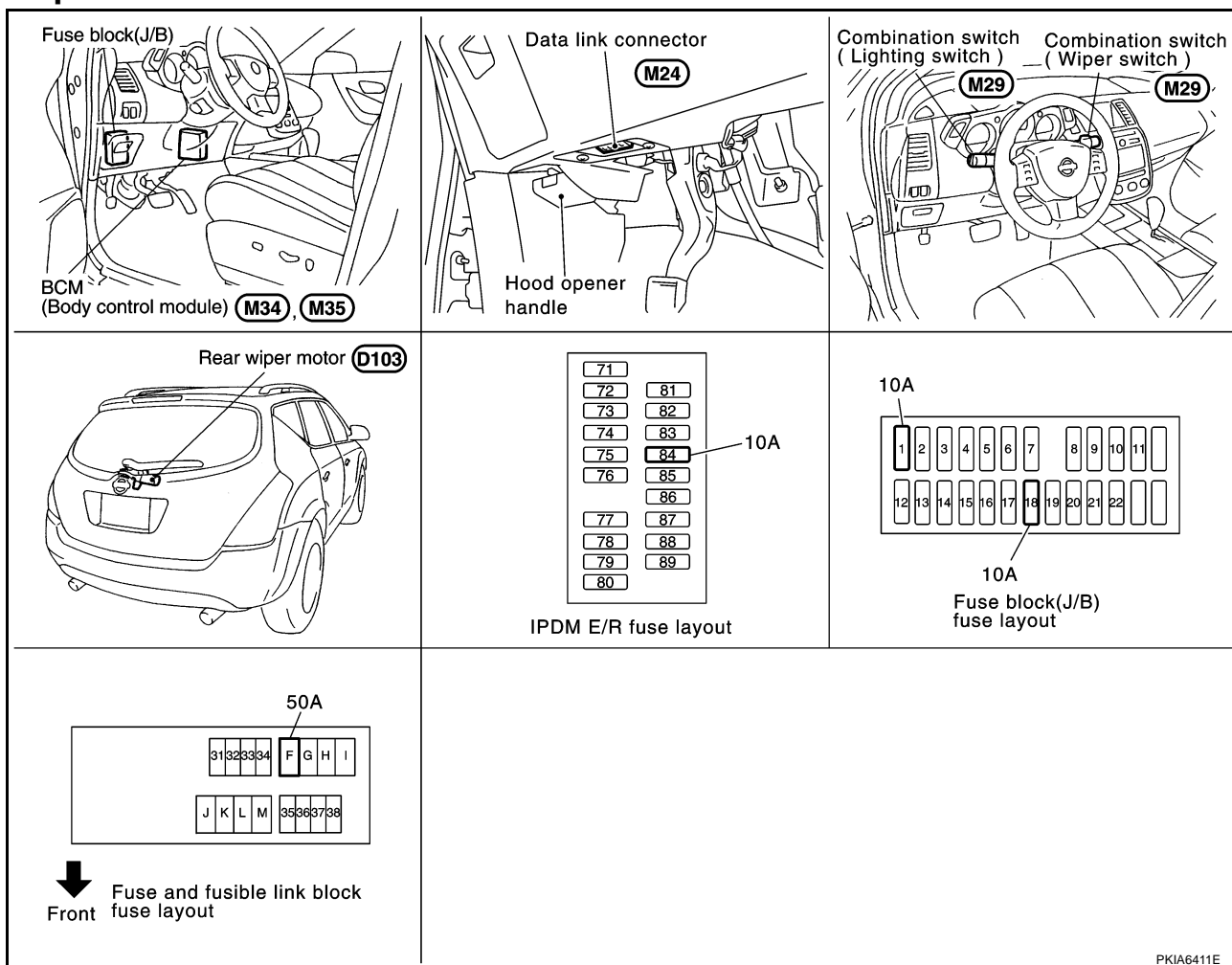
# REAR WIPER AND WASHER SYSTEM

## REAR WIPER AND WASHER SYSTEM

PPF:28710

### Components Parts and Harness Connector Location

AKS004X3



PKIA6411E

## System Description

AKS004X4

- 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 (body control module) controls rear wiper ON and INT (intermittent) operation.

### Power supplied all time

- through 50 A fusible link (letter F, located in fusible link block)
- to BCM (body control module) terminal 55
- through 10 A fuse [No. 18, located in fuse block (J/B)]
- to BCM (body control module) terminal 42.

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

- through 10 A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38
- through 10 A fuse [NO. 84, located in IPDM E/R (intelligent power distribution module engine room)]
- through IPDM E/R (intelligent power distribution module engine room) terminal 44
- to combination switch terminal 14.

### Ground is supplied

- to BCM (body control module) terminals 49 and 52
- through grounds E14 and M78
- to combination switch (wiper switch) terminal 12
- through grounds M14 and M78.

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# REAR WIPER AND WASHER SYSTEM

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## REAR WIPER OPERATION

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

When BCM operates rear wiper motor, power is supplied

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

Ground is supplied

- to rear wiper motor terminal 2
- through grounds B7 and B20.

With power and ground supplied, the rear wiper operates.

## INTERMITTENT OPERATION

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

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

When BCM operates rear wiper motor, power supplied

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

Ground is supplied

- to rear wiper motor terminal 2
- through grounds B7 and B20.

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

## 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.

## WASHER OPERATION

When wiper switch is in rear wiper washer position, BCM detects 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

Power is supplied

- through 10 A fuse [NO. 84, located in IPDM E/R (intelligent power distribution module engine room)]
- to combination switch terminal 14
- through combination switch (wiper switch) terminal 11
- to front and rear washer motor terminal 2
- to front and rear washer motor terminal 1
- through combination switch (wiper switch) terminal 13
- to combination switch (wiper switch) terminal 12
- through grounds M14 and M78.

With ground supplied, front and rear washer motor is operated.

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

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

## BCM WIPER SWITCH READING FUNCTION

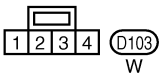
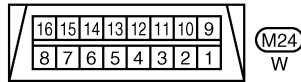
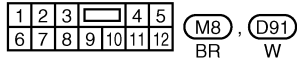
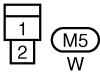
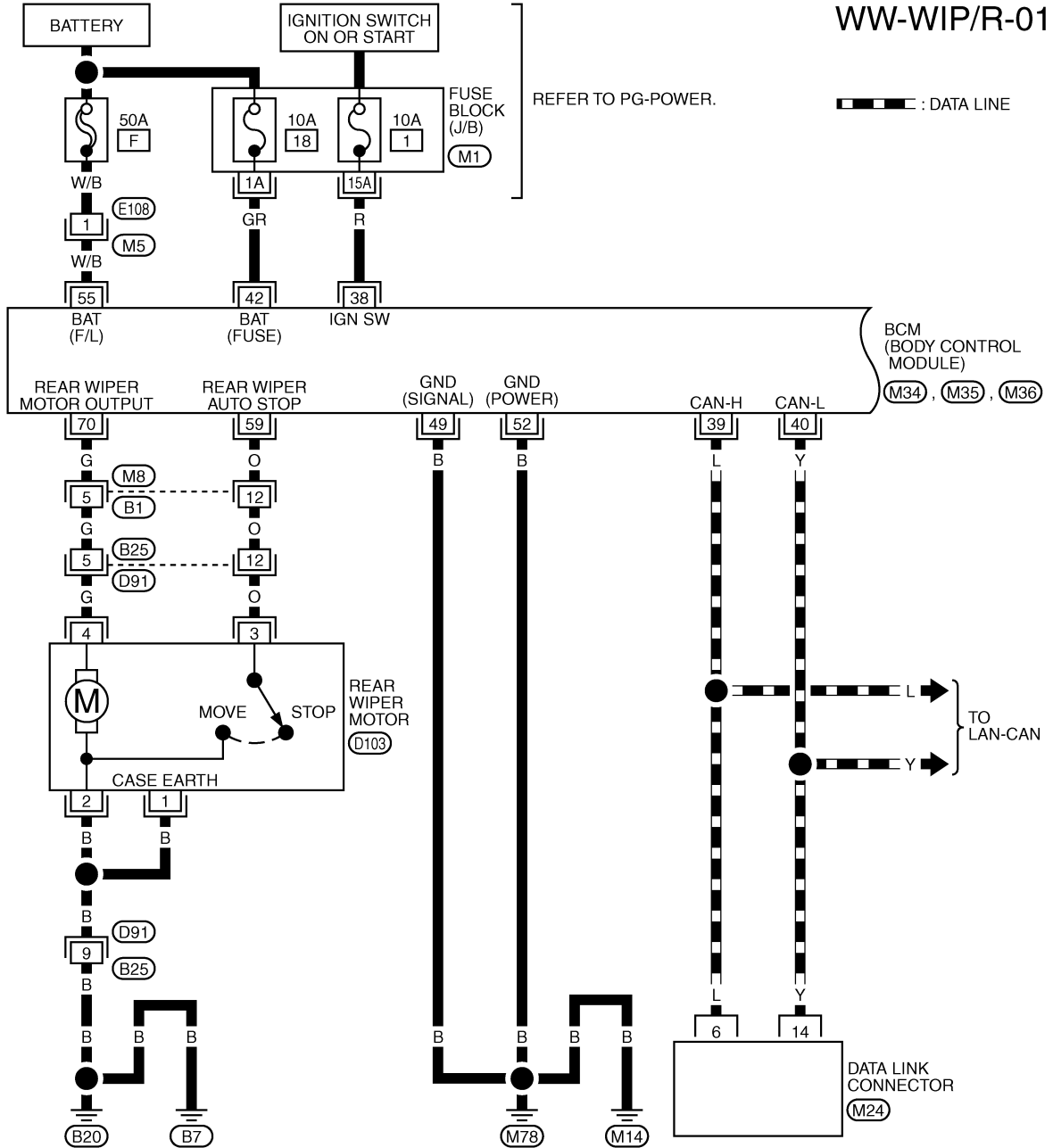
Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#) in FRONT WIPER AND WASHER SYSTEM.

# REAR WIPER AND WASHER SYSTEM

## Wiring Diagram — WIP/ R —

AKS004X5

WW-WIP/R-01



REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

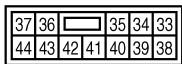
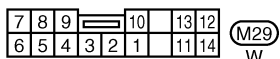
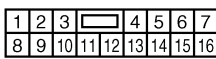
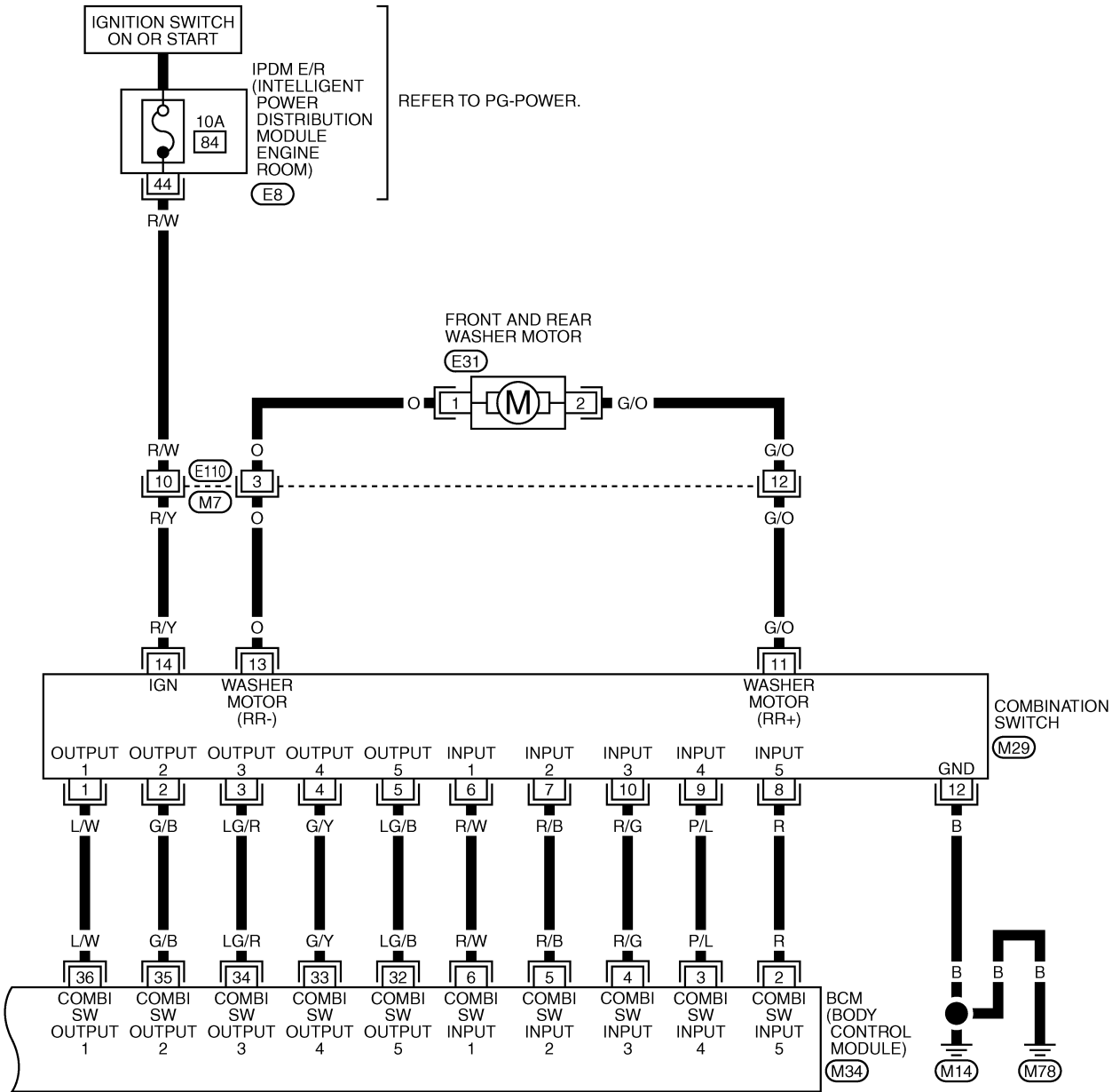
(M34), (M35), (M36) - ELECTRICAL UNITS

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# REAR WIPER AND WASHER SYSTEM

WW-WIP/R-02



REFER TO THE FOLLOWING.  
(M34) -ELECTRICAL UNITS

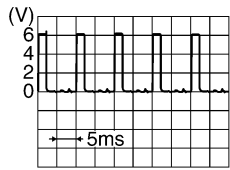
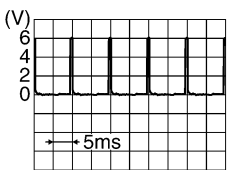
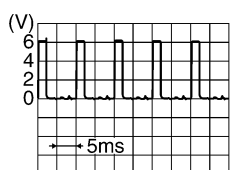
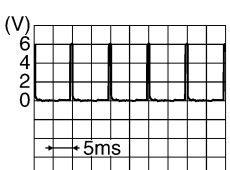


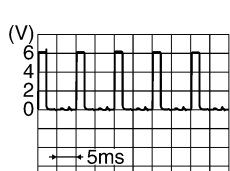
TKWA1719E



# REAR WIPER AND WASHER SYSTEM

## Terminals and Reference Values for BCM

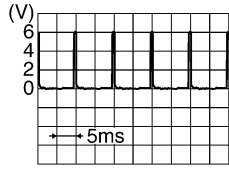
AKS00ANI

| Terminal No.<br>(Wire color) | Signal name                 | Measuring condition |   | Reference value   |
|------------------------------|-----------------------------|---------------------|---|---|
|                              |                             | Ignition switch     | Operation or condition  |   |
| 2 (R)                        | Combination switch input 5  | ON                  | <ul style="list-style-type: none"> <li>● Lighting switch and wiper switch OFF</li> <li>● Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5291E</p>   |
| 3 (P/L)                      | Combination switch input 4  | ON                  | <ul style="list-style-type: none"> <li>● Lighting switch and wiper switch OFF</li> <li>● Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5292E</p>   |
| 4 (R/G)                      | Combination switch input 3  | ON                  | <ul style="list-style-type: none"> <li>● Lighting switch and wiper switch OFF</li> <li>● Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5291E</p>   |
| 5 (R/B)                      | Combination switch input 2  | ON                  | <ul style="list-style-type: none"> <li>● Lighting switch and wiper switch OFF</li> <li>● Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5292E</p> |
| 6 (R/W)                      | Combination switch input 1  |                     |   |   |
| 32 (LG/B)                    | Combination switch output 5 | ON                  | <ul style="list-style-type: none"> <li>● Lighting switch and wiper switch OFF</li> <li>● Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5291E</p> |
| 33 (G/Y)                     | Combination switch output 4 | ON                  | <ul style="list-style-type: none"> <li>● Lighting switch and wiper switch OFF</li> <li>● Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5292E</p> |
| 34 (LG/R)                    | Combination switch output 3 | ON                  | <ul style="list-style-type: none"> <li>● Lighting switch and wiper switch OFF</li> <li>● Wiper dial position 4</li> </ul> |  <p style="text-align: right;">SKIA5291E</p> |

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# REAR WIPER AND WASHER SYSTEM

| Terminal No.<br>(Wire color) | Signal name                    | Measuring condition |   | Reference value   |                 |
|------------------------------|--------------------------------|---------------------|---|---|-----------------|
|                              |                                | Ignition switch     | Operation or condition  |   |                 |
| 35 (G/B)                     | Combination switch output 2    | ON                  | <ul style="list-style-type: none"> <li>Lighting switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> | <br><small>SKIA5292E</small> |                 |
| 36 (L/W)                     | Combination switch output 1    |                     |   |   |                 |
| 38 (R)                       | Ignition switch (ON)           | ON                  | —   | Battery voltage   |                 |
| 39 (L)                       | CAN H                          | —                   | —   | —   |                 |
| 40 (Y)                       | CAN L                          | —                   | —   | —   |                 |
| 42 (GR)                      | Battery power supply           | OFF                 | —   | Battery voltage   |                 |
| 49 (B)                       | Ground                         | ON                  | —   | Approx. 0 V   |                 |
| 52 (B)                       | Ground                         | ON                  | —   | Approx. 0 V   |                 |
| 55 (W/B)                     | Battery power supply           | OFF                 | —   | Battery voltage   |                 |
| 59 (O)                       | Rear wiper auto stop signal    | ON                  | Wiper operating   | Approx. 0 V   |                 |
|                              |                                |                     | Wiper stopped   | Battery voltage   |                 |
| 70 (G)                       | Rear wiper motor output signal | ON                  | Wiper switch  | OFF   | Approx. 0 V     |
|                              |                                |                     |   | ON  | Battery voltage |

## How to Proceed With Trouble Diagnosis

AKS004X7

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-37, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [WW-42, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the warning chime operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

## Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

AKS004X8

Inspection Procedure

### 1. CHECK FUSE

- Check if wiper and washer fuse is blown.

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

Refer to [WW-39, "Wiring Diagram — WIP/ R —"](#) .

OK or NG

OK >> GO TO 2.

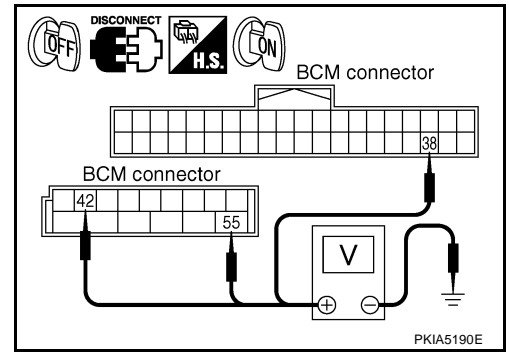
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

# REAR WIPER AND WASHER SYSTEM

## 2. CHECK POWER SUPPLY CIRCUIT

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

| Terminals |                       | Ignition switch position |                 |
|-----------|-----------------------|--------------------------|-----------------|
| (+)       |                       | (-)                      |                 |
| Connector | Terminal (Wire color) | OFF                      | ON              |
| M35       | 42 (GR)               | Ground                   | Battery voltage |
| M35       | 55 (W/B)              |                          | Battery voltage |
| M34       | 38 (R)                |                          | 0V              |



### OK or NG

- OK >> GO TO 3.  
 NG >> Check harness for open or short between fuse, fusible link and BCM.

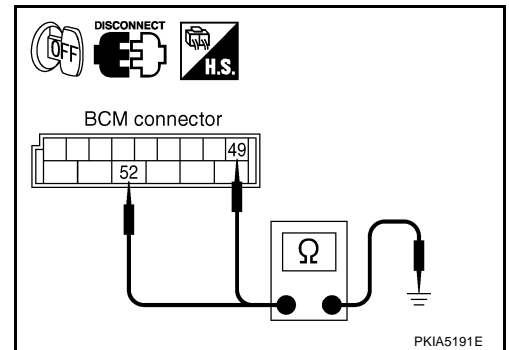
## 3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

| Terminals |                       | Continuity |
|-----------|-----------------------|------------|
| Connector | Terminal (Wire color) |            |
| M35       | 49 (B)                | Ground     |
|           | 52 (B)                |            |
|           |                       | Yes        |

### OK or NG

- OK >> INSPECTION END  
 NG >> Check harness ground circuit.



## CONSULT-II Functions

CONSULT-II can display each diagnostic item using the following diagnostic test modes: work support, self-diagnostic results, data monitor and active test through data reception and command transmission via the BCM CAN communication line.

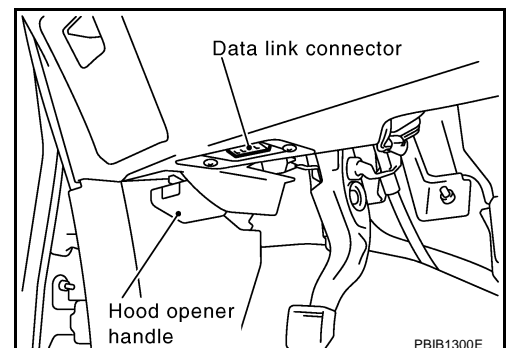
| BCM diagnosis position | Check item, Diagnosis mode | Description  |
|------------------------|----------------------------|--|
| Wiper                  | DATA MONITOR               | Displays BCM input data in real time.                                      |
|                        | ACTIVE TEST                | Device operation can be checked by applying a drive signal to device.      |
| BCM                    | CAN DIAG SUPPORT MNTR      | The result of transmit/receive diagnosis of CAN communication can be read. |

## CONSULT-II OPERATION

### CAUTION:

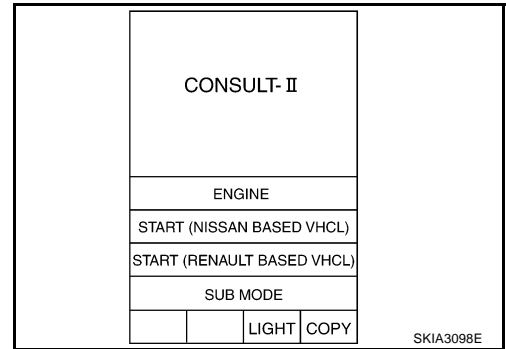
If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

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

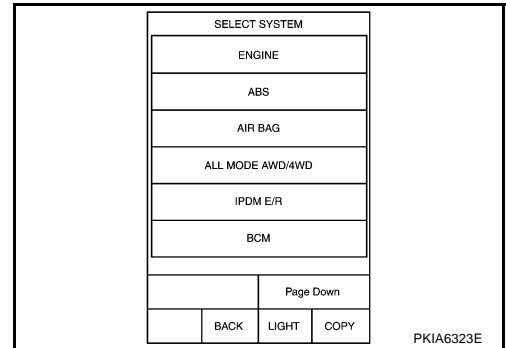


# REAR WIPER AND WASHER SYSTEM

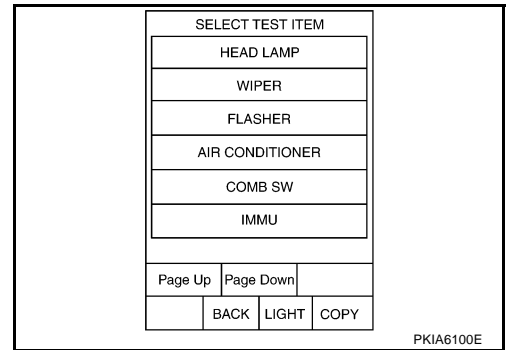
2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM".  
If "BCM" is not indicated, refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



4. Touch "WIPER".



## 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 "DATA MONITOR" screen.

|                     |  |
|---------------------|--|
| ALL SIGNALS         | Monitors all the signal.                 |
| SELECTION FROM MENU | Selects and monitors individual signals. |

4. Touch "START".
5. When "SELECTION FROM MENU" is selected, touched items to be monitored. If "ALL SIGNALS" is selected, all items will be monitored.
6. Touch "RECORDING START" while monitoring to record the status of the item being monitored. To stop recording, touch "RECORDING STOP".

### Display Item List

| Monitor item [operation or unit] | Display content   |
|----------------------------------|---|
| 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.                     |

# REAR WIPER AND WASHER SYSTEM

| Monitor item [operation or unit]    | Display content   |
|-------------------------------------|---|
| 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 the auto-stop signal.               |
| VEHICLE SPEED [km/h]                | Displays vehicle speed status as judged from vehicle speed signal.                                |
| RR WIPER ON [ON/OFF]                | Displays "Rear Wiper ON (ON)/Other (OFF)" status as judged from wiper switch signal.              |
| RR WIPER INT [ON/OFF]               | Displays "Rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.             |
| RR WASHER SW [ON/OFF]               | Displays "Rear Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.         |
| RR WIPER STOP [ON/OFF]              | Displays "Rear Wiper Stop (ON)/Other (OFF)" status, as judged from wiper switch signal.           |
| RR WIPER STP2 <sup>NOTE</sup> [OFF] | —   |

**NOTE:**

This item is displayed, but cannot monitor it.

## ACTIVE TEST

### Operation Procedure

1. Touch "WIPER" on "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Touch items to be tested, and check operation.
4. During operation check, touching "STOP" deactivates operation.

### Display Item List

| Test item             | Indication on CONSULT-II display | Description   |
|-----------------------|----------------------------------|---|
| Front wiper HI output | FRONT WIPER                      | With a certain operation (OFF, HI, LO, INT), the front wiper can be operated. |
| Rear wiper output     | RR WIPER                         | Rear wiper can be operated by any ON-OFF operation.                           |

## Rear Wiper Does Not Operate

AKS004XA

### 1. CHECK FUSE AND FUSIBLE LINK

Check fuse No.1, 84 and fusible link No. F.

#### OK or NG

OK >> GO TO 2.

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

### 2. REAR WIPER ACTIVE TEST

 With CONSULT-II

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT SYSTEM" screen.
2. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "REAR WIPER" on "SELECT TEST ITEM" screen.
4. Confirm that rear wiper operates normally.

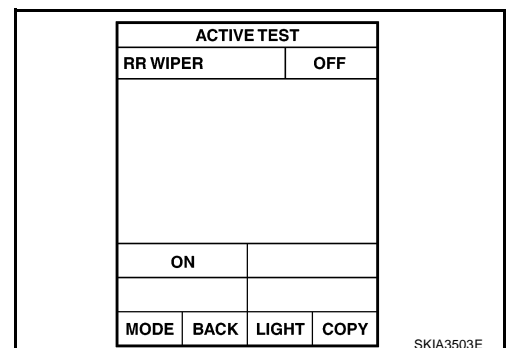
 Without CONSULT-II

GO TO 3.

Does rear wiper operate normally?

YES >> GO TO [LT-140, "Combination Switch Inspection"](#).

NO >> GO TO 3.



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# REAR WIPER AND WASHER SYSTEM

## 3. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER

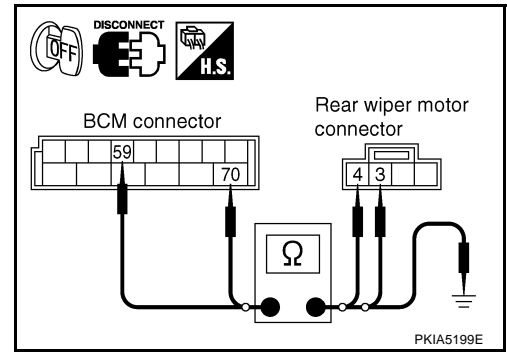
1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector M36 terminals 59 (O), 70 (G) and rear wiper motor harness connector D103 terminals 3 (O), 4 (G).

**59 (O) - 3 (O) : Continuity should exist.**

**70 (G) - 4 (G) : Continuity should exist.**

4. Check continuity between BCM harness connector M36 terminals 59 (O), 70 (G) and ground.

**59 (O), 70 (G) - Ground : Continuity should not exist.**



OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

## 4. CHECK REAR WIPER TO GROUND

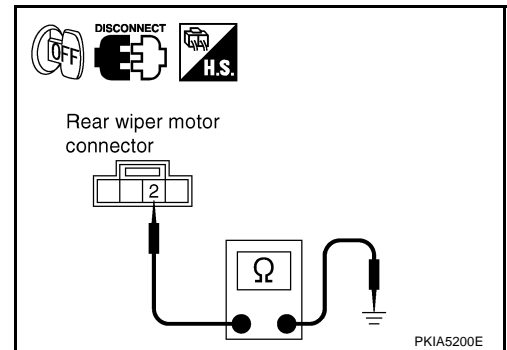
Check continuity between rear wiper motor harness connector D103 terminal 2 (B) and ground.

**2 (B) - Ground : Continuity should exist.**

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



## 5. CHECK BCM

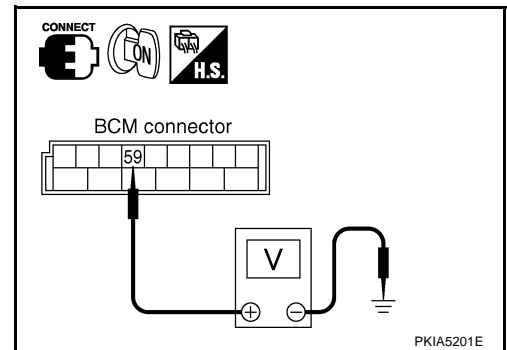
1. Connect BCM connector and rear wiper motor connector.
2. Turn ignition switch ON.
3. With rear wiper switch ON, check voltage between BCM harness connector B14 terminal 59 (Y) and ground.

| Terminals |                       | (-)    | Condition       | Voltage         |
|-----------|-----------------------|--------|-----------------|-----------------|
| BCM(+)    |                       |        |                 |                 |
| Connector | Terminal (Wire color) |        |                 |                 |
| M36       | 59 (O)                | Ground | Wiper stopped   | Approx. 0V      |
|           |                       |        | Wiper operating | Battery voltage |

OK or NG

OK >> Replace rear wiper motor.

NG >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .



# REAR WIPER AND WASHER SYSTEM

AKS00ANK

## Rear Wiper Does Not Return to Stop Position

### 1. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (1)

① With CONSULT-II

Select "BCM" on CONSULT-II. With "WIPER" on "DATA MONITOR", confirm that "RR WIPER STOP" turns ON-OFF linked with wiper operation.

② Without CONSULT-II

GO TO 2.

OK or NG

OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).

NG >> GO TO 2.

| DATA MONITOR  |                 |
|---------------|-----------------|
| MONITOR       |                 |
| FR WIPER INT  | OFF             |
| 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             |
| Page Up       |                 |
| RECORD        |                 |
| MODE          | BACK LIGHT COPY |

SKIA5322E

### 2. CHECK REAR WIPER AUTO STOP CIRCUIT

- Turn ignition switch OFF.
- Disconnect BCM connector and rear wiper motor connector.
- Check continuity between BCM harness connector M36 terminal 59 (O) and rear wiper motor harness connector D103 terminal 3 (O).

**59 (O) - 3 (O) : Continuity should exist.**

- Check continuity between BCM harness connector M36 terminal 59 (O) and ground.

**59 (O) - Ground : Continuity should not exist.**

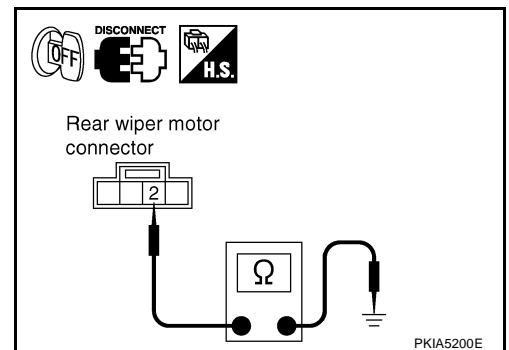
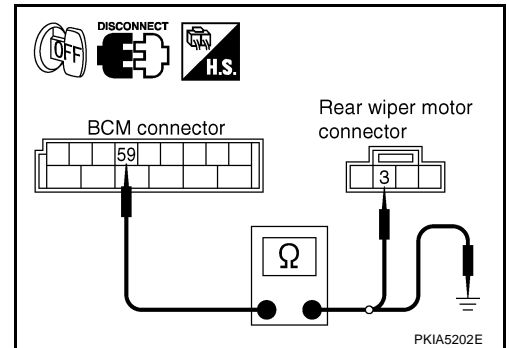
- Check continuity between rear wiper motor harness connector D103 terminal 2 (B) and ground.

**2 (B) - Ground : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



A  
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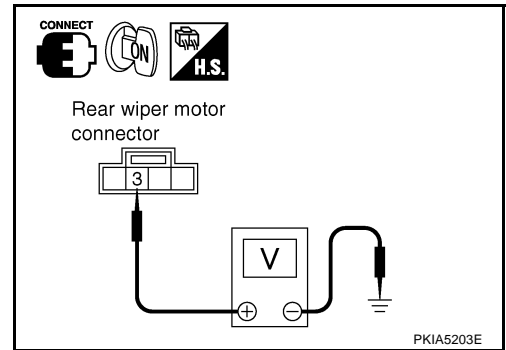
WW

# REAR WIPER AND WASHER SYSTEM

## 3. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (2)

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.

| Terminals            |                       | (-)    | Condition       | Voltage         |
|----------------------|-----------------------|--------|-----------------|-----------------|
| Rear wiper motor (+) |                       |        |                 |                 |
| Connector            | Terminal (Wire color) |        |                 |                 |
| D103                 | 3 (O)                 | Ground | Wiper stopped   | Approx. 0V      |
|                      |                       |        | Wiper operating | Battery voltage |



OK or NG

- OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> Replace rear wiper motor.

### Only Rear Wiper ON Does Not Operate

AKS00ANL

Refer to [LT-140, "Combination Switch Inspection"](#), and inspect it.

### Only Rear Wiper INT Does Not Operate

AKS00ANM

Refer to [LT-140, "Combination Switch Inspection"](#), and inspect it.

### Wiper Does Not Wipe When Rear Washer Operates

AKS00ANN

Refer to [LT-140, "Combination Switch Inspection"](#), and inspect it.

### Rear Wipers Do Not Stop

AKS00ANO

## 1. CHECK CIRCUIT BETWEEN COMBINATION SWITCH AND BCM

Ⓜ With CONSULT-II

Select "BCM" on CONSULT-II. With "WIPER" on "DATA MONITOR", confirm 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-140, "Combination Switch Inspection"](#).

OK or NG

- OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> Check wiper Switch. Refer to [LT-140, "Combination Switch Inspection"](#).

| DATA MONITOR  |          |        |      |
|---------------|----------|--------|------|
| MONITOR       |          |        |      |
| FR WIPER INT  | OFF      |        |      |
| 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      |        |      |
| Page Up       |          |        |      |
|               |          | RECORD |      |
| MODE          | BACK     | LIGHT  | COPY |

SKIA5322E



# REAR WIPER AND WASHER SYSTEM

## 2. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (2), AND BETWEEN REAR WIPER AND GROUND

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM connector M36 terminal 59 (O) and rear wiper motor connector D103 terminal 3 (O).

**59 (O) - 3 (O) : Continuity should exist.**

4. Check continuity between BCM connector M36 terminals 59(Y) and Ground.

**59 (O) - Ground : Continuity should not exist.**

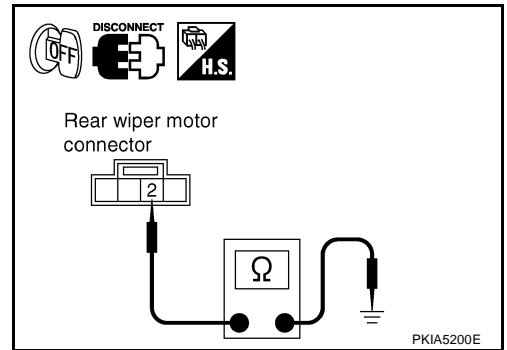
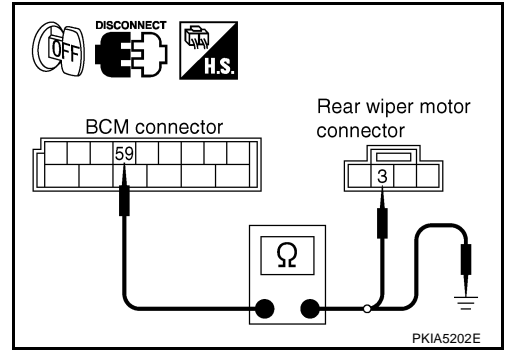
5. Check continuity between rear wiper motor connector D103 terminal 2 (B) and ground.

**2 (B) - Ground : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



## 3. CHECK CIRCUIT BETWEEN BCM AND REAR WIPER (3)

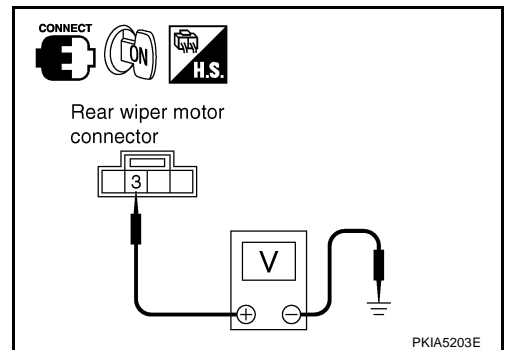
1. Connect BCM connector and rear wiper motor connector.
2. Turn ignition switch ON.
3. Check voltage between rear wiper motor harness connector terminal and ground while rear wiper motor is stopped and while it is operating.

| Terminals |                       | (-)    | Condition       | Voltage         |
|-----------|-----------------------|--------|-----------------|-----------------|
| Connector | Terminal (Wire color) |        |                 |                 |
| D103      | 3 (O)                 | Ground | Wiper stopped   | Approx. 0V      |
|           |                       |        | Wiper operating | Battery voltage |

OK or NG

OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .

NG >> Replace rear wiper motor.



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

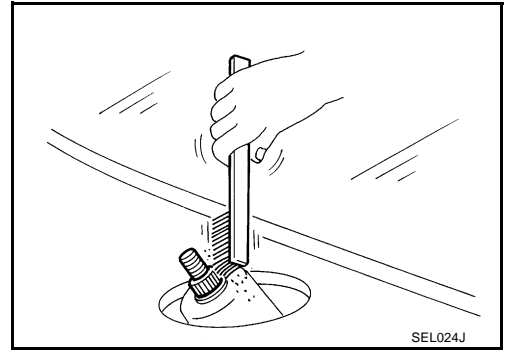
AKS00ANP

1. Operate wiper motor, and stop it at the auto stop position.
2. Remove wiper arm cover and mounting nut, and then remove wiper arm from vehicle.

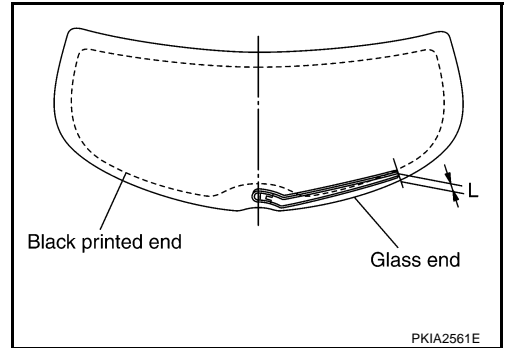
# REAR WIPER AND WASHER SYSTEM

## INSTALLATION

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




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



**Clearance "L" : 20.5 - 35.5 mm (0.807 - 1.398 in)**

- Tighten wiper arm nut to specified torque.

**Rear wiper arm mounting nut  : 8.8 N·m (0.90 kg-m, 78 in-lb)**

## ADJUSTMENT

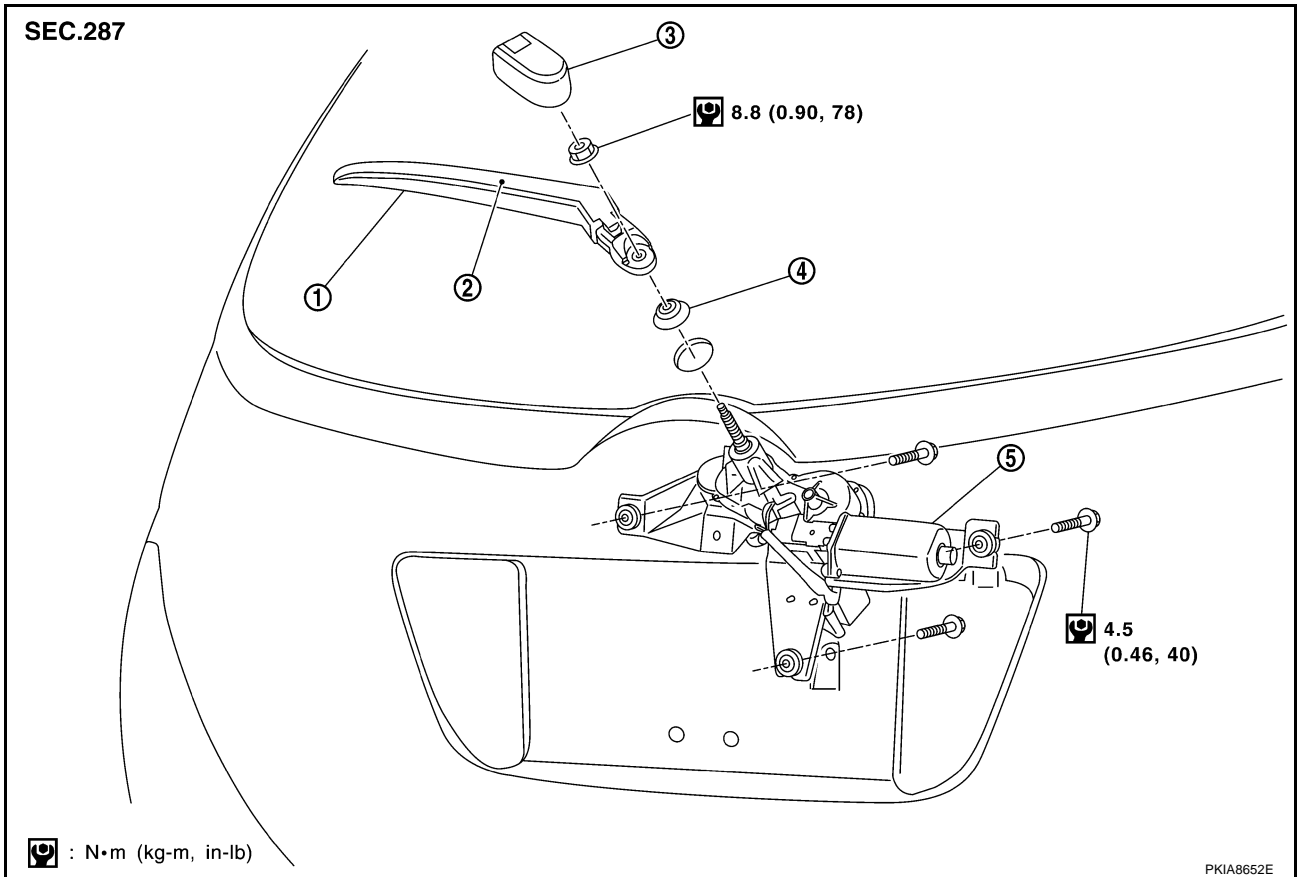
Refer to [WW-50, "INSTALLATION"](#) .

# REAR WIPER AND WASHER SYSTEM

## Removal and Installation of Rear Wiper Motor

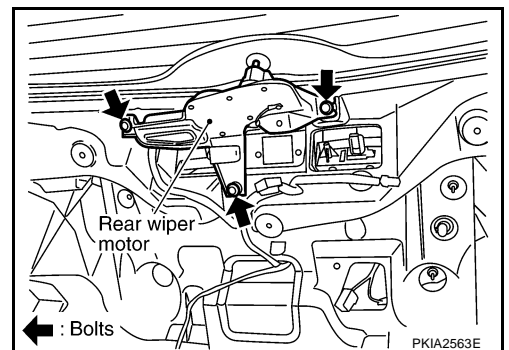
AKS00ANQ

A  
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I  
J



### REMOVAL

1. Remove wiper arm. Refer to [WW-49, "Removal and Installation of Rear Wiper Arm, Adjustment of Wiper Arms Stop Location"](#).
2. Remove pivot cap.
3. Remove back door finisher. Refer to [EI-40, "BACK DOOR TRIM"](#) in "EI" section.
4. Disconnect rear wiper motor connector.
5. Remove rear wiper motor mounting bolts and remove rear wiper motor.



WW  
L  
M

### INSTALLATION

1. Attach pivot cap.
2. Install rear wiper motor to the vehicle.

**Rear wiper motor mounting bolts** ⊙ : 4.5 N-m (0.46 kg-m, 40 in-lb)

3. Connect rear wiper motor to the connector. Turn rear wiper switch ON to operate rear wiper motor, then turn wiper switch OFF (auto stop).
4. Install back door finisher. Refer to [EI-40, "BACK DOOR TRIM"](#) in "EI" section.
5. Attach wiper arm. Refer to [WW-49, "Removal and Installation of Rear Wiper Arm, Adjustment of Wiper Arms Stop Location"](#).

### CAUTION:

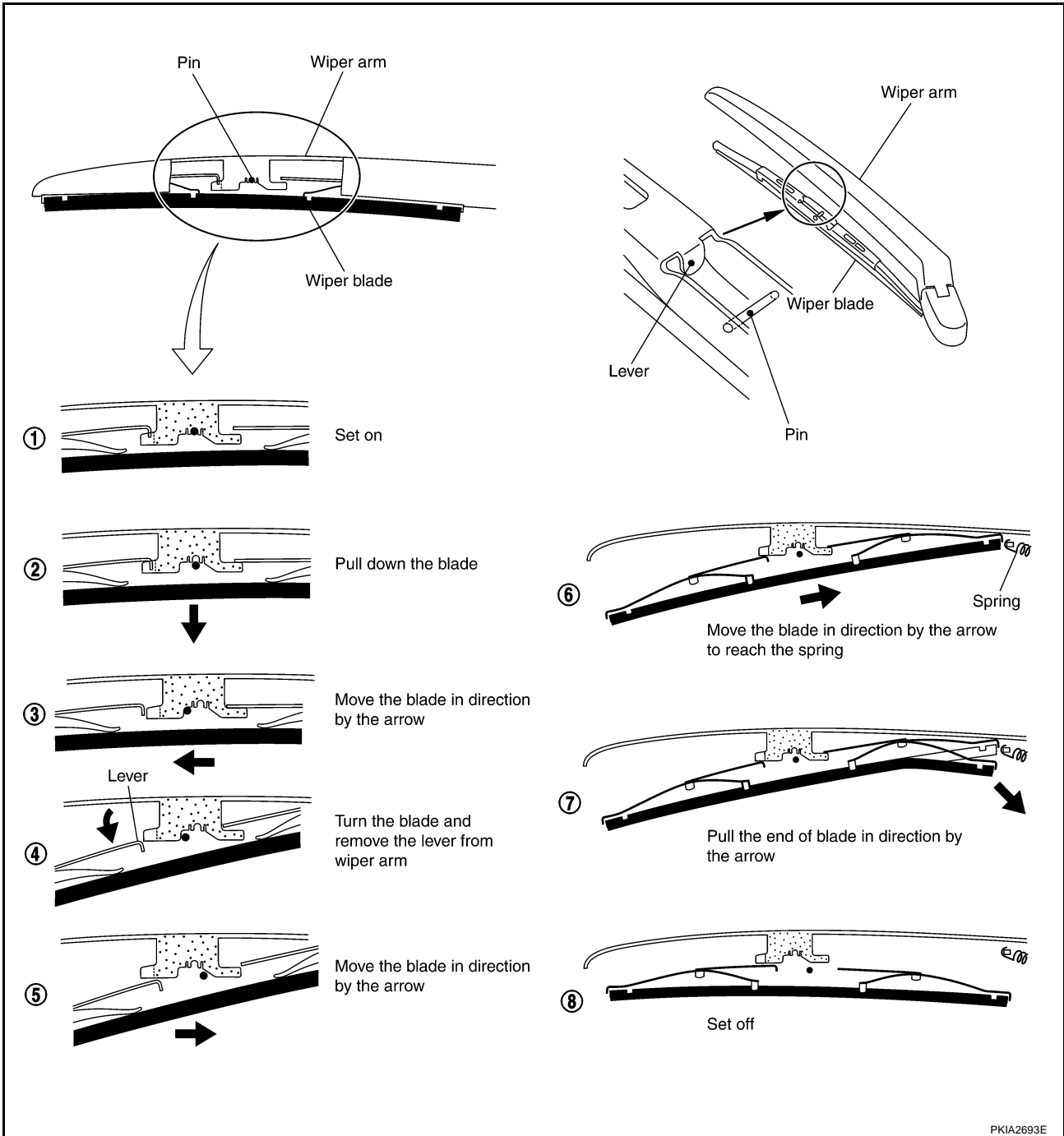
- Do not drop the wiper motor or cause it to contact other parts.

# REAR WIPER AND WASHER SYSTEM

AKS00ANR

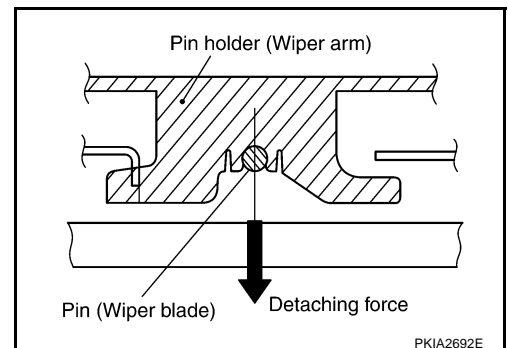
## Removal and Installation of Rear Wiper Blade REMOVAL

Remove the wiper blade as following the procedure below (as shown No.1 to 8 in the illustration).



### CAUTION:

- If the detaching force in the arrowed direction (see the illustration) is less than 68.6N (7.0kg, 15.4lb), replace rear wiper blade and rear wiper arm with new ones.
- When replacing the rear wiper blade, blow air and remove shaving of plastic or dust.



# REAR WIPER AND WASHER SYSTEM

## INSTALLATION

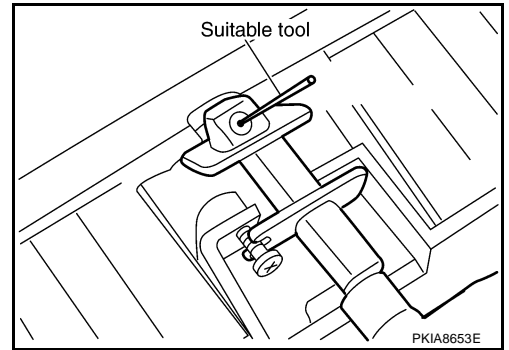
Install in the reverse order of removal.

### Washer Nozzle Adjustment

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

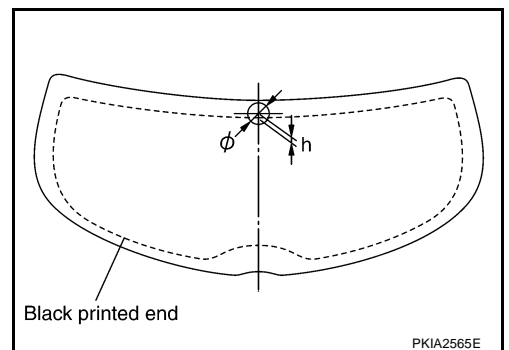
**Adjustable range** :  $\pm 0.7^\circ$  (vertical direction)  
 :  $+7^\circ, -3^\circ$  (horizontal direction)

AKS00ANS



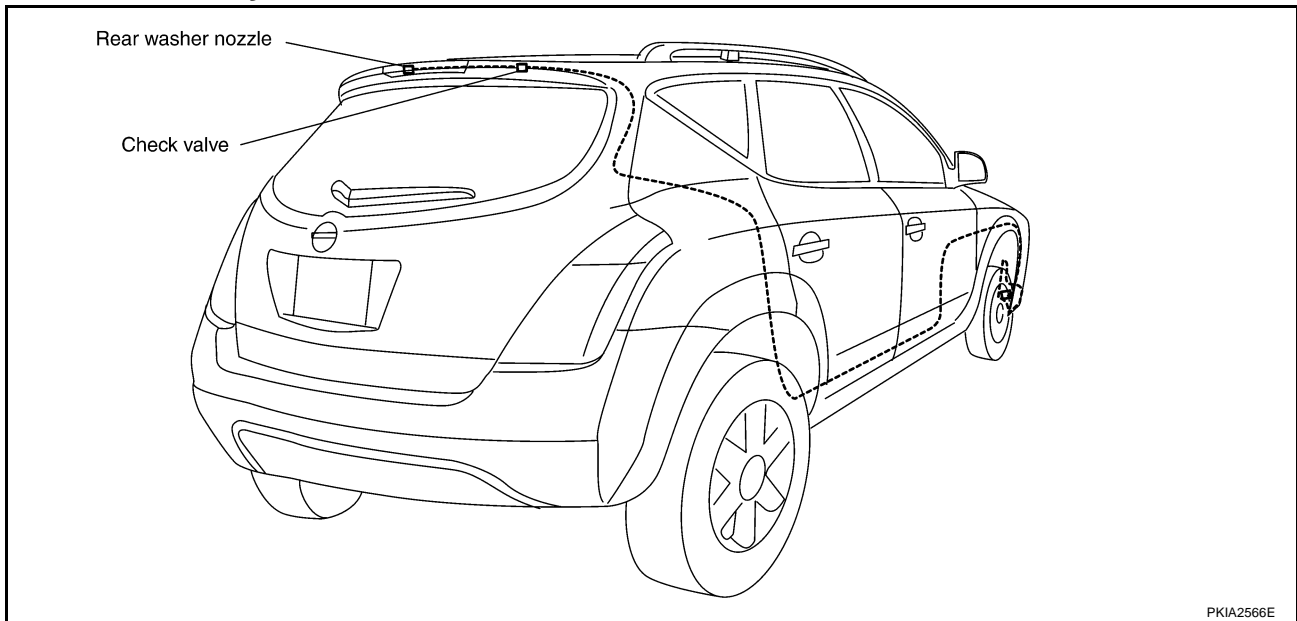
Unit : mm (in)

|                               |             |
|-------------------------------|-------------|
| h (height)                    | 23.3 (0.91) |
| $\phi$ (spray position range) | 30 (1.18)   |



### Washer Tube Layout

AKS00ANT



A  
B  
C  
D  
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WW  
L  
M

# REAR WIPER AND WASHER SYSTEM

## Removal and Installation of Rear Washer Nozzle

AKS00ANU

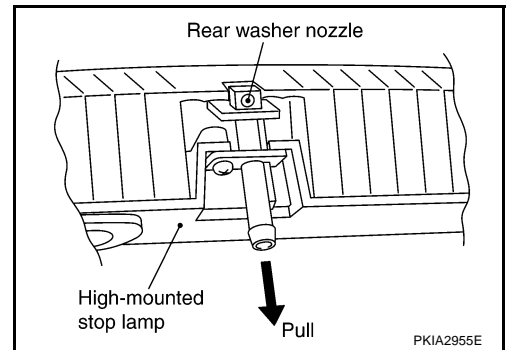
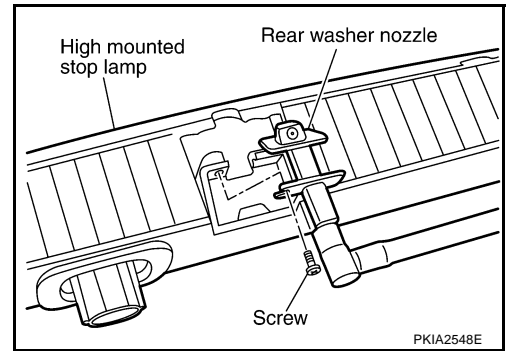
1. Remove high-mounted stop lamp. Refer to [LT-144, "High-Mounted Stop Lamp"](#) in "LT" section.
2. Remove the rear washer nozzle mounting screw and remove it.
3. Note the following, and install in the reverse order of removal.
  - Tighten rear washer nozzle mounting screw to specified torque.

### Rear washer nozzle mounting screw

: 0.4 N·m (0.04 kg·m, 4 in-lb)

### CAUTION:

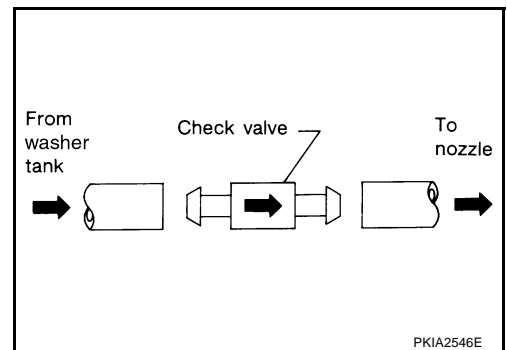
- After tightened rear washer nozzle mounting screw, make sure that the rear washer nozzle does not come off when it is pulled downward at 49N (5kg, 11lb) as shown in the figure. If the washer nozzle come off, replace it together with a new high-mounted stop lamp assembly.



## Check Valve Inspection

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

AKS00ANU



## Removal and Installation of Rear Wiper and Washer Switch

AKS00ANU

Refer to [WW-35, "Removal and Installation of Front Wiper and Washer Switch"](#) .

## Removal and Installation of Washer Tank

AKS00ANX

Refer to [WW-35, "Removal and Installation of Washer Tank"](#) .

## Removal and Installation of Washer Pump

AKS00ANY

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

# POWER SOCKET

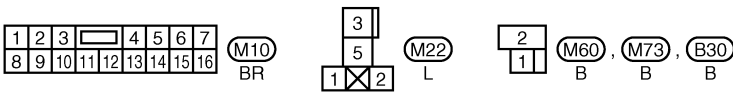
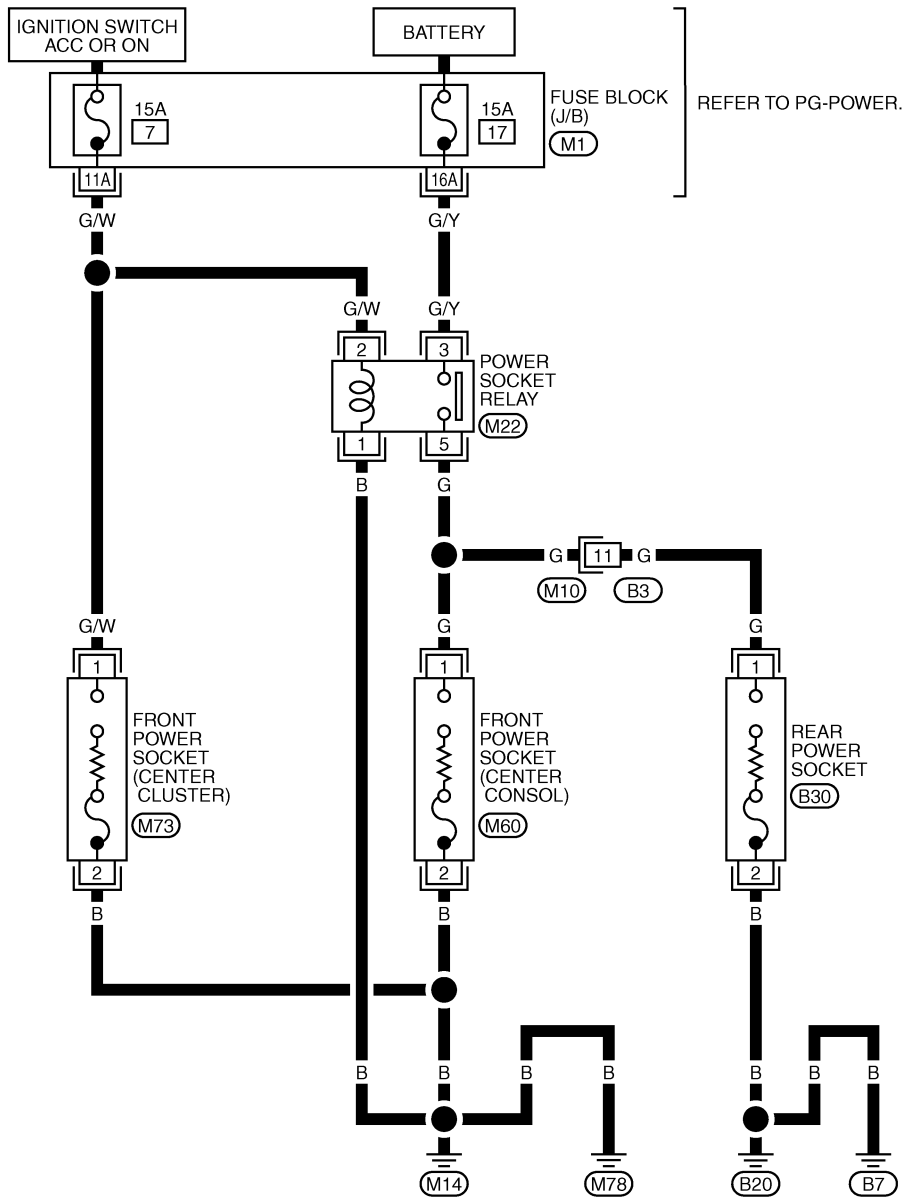
## POWER SOCKET

PPF:253A2

### Wiring Diagram — P/SCKT —

AKS004NM

## WW-P/SCKT-01



REFER TO THE FOLLOWING.  
**(M1)** - FUSE BLOCK-JUNCTION BOX (J/B)

A  
B  
C  
D  
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I  
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K  
L  
M

WW

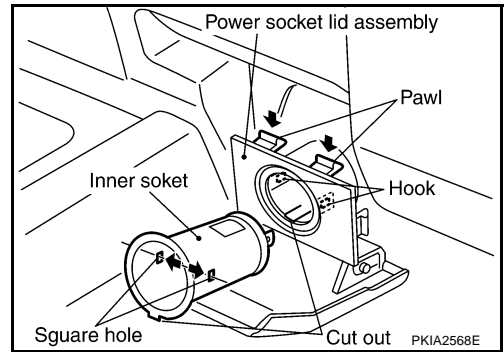
# POWER SOCKET

## Removal and Installation of Instrument Power Socket

AKS004NN

### REMOVAL

1. Remove inner socket with power socket lid assembly from the instrument panel, while pressing the pawls.
2. Disconnect power socket connector.
3. Remove inner socket from power socket lid assembly, while pressing the hook out from square hole.



### INSTALLATION

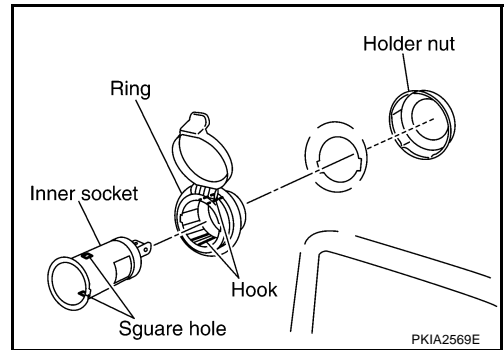
Install in the reverse order of removal.

## Removal and Installation of Luggage Room Power Socket

AKS005I6

### REMOVAL

1. Remove inner socket from the ring, while pressing the hook on the ring out from square hole.
2. Remove luggage side finisher lower (right). Refer to [EI-38, "LUGGAGE FLOOR TRIM"](#) in "EI" section.
3. Turn holder nut counterclockwise and unlock it.
4. Remove the ring from inner trim.



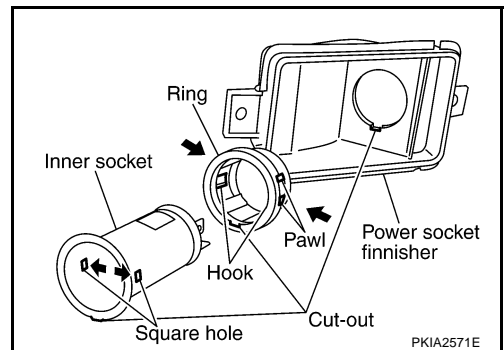
### INSTALLATION

Install in the reverse order of removal.

## Removal and Installation of Console Power Socket

AKS005I5

1. Remove console box. Refer to [IP-17, "CENTER CONSOLE ASSEMBLY"](#) in "IP" section.
2. Remove inner socket from the ring, while pressing the hook on the ring out from square hole.
3. Remove power socket finisher assembly mounting screws and remove it.
4. Remove the ring from power socket finisher while pressing pawls.





# HORN

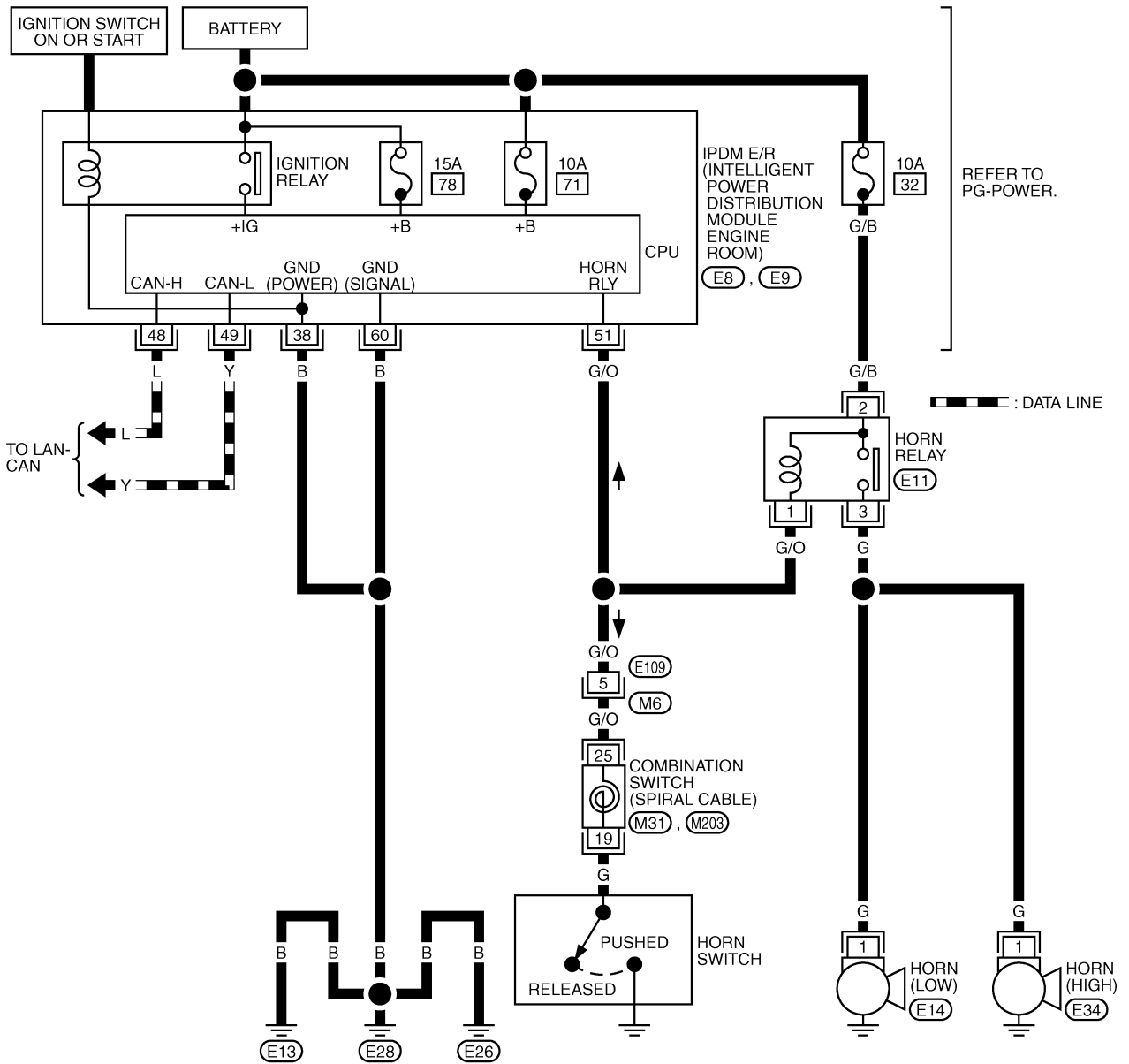
PPF:25610

## HORN

### Wiring Diagram — HORN —

AKS004NO

## WW-HORN-01



|    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 |    |    |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

(M6) W

|    |    |    |    |
|----|----|----|----|
| 27 | 26 | 25 | 24 |
| 34 | 33 | 32 | 31 |

(M31) GR

|    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|
| 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 |
|----|----|----|----|----|----|----|----|

(M203)\* GR

|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| 37 | 36 | 35 | 34 | 33 |    |    |
| 44 | 43 | 42 | 41 | 40 | 39 | 38 |

(E8) W

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

(E9) W



|   |   |
|---|---|
| 2 |   |
| 1 | 3 |

(E11)

|   |   |
|---|---|
| 1 |   |
| B | B |

(E14), (E34)

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

TKWA1720E

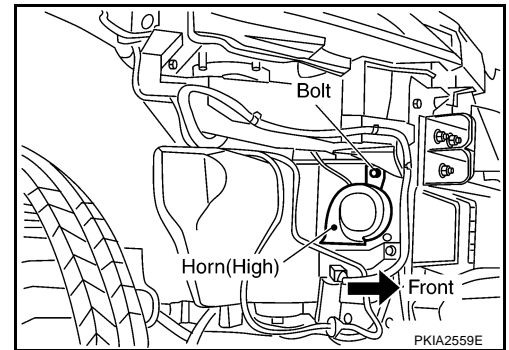
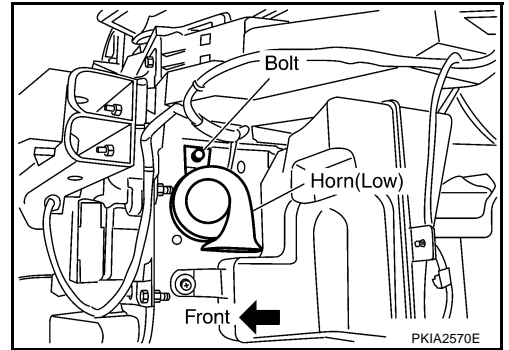
# HORN

AKS004NP

## Removal and Installation

### REMOVAL

1. Remove front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
2. Disconnect horn connector.
3. Remove horn bolt and remove horn from vehicle.



### INSTALLATION

Tighten horn bolt to specified torque.

**Horn mounting bolt**  : 17.1 N·m (1.7 kg·m, 13 ft·lb)

# CIGARETTE LIGHTER

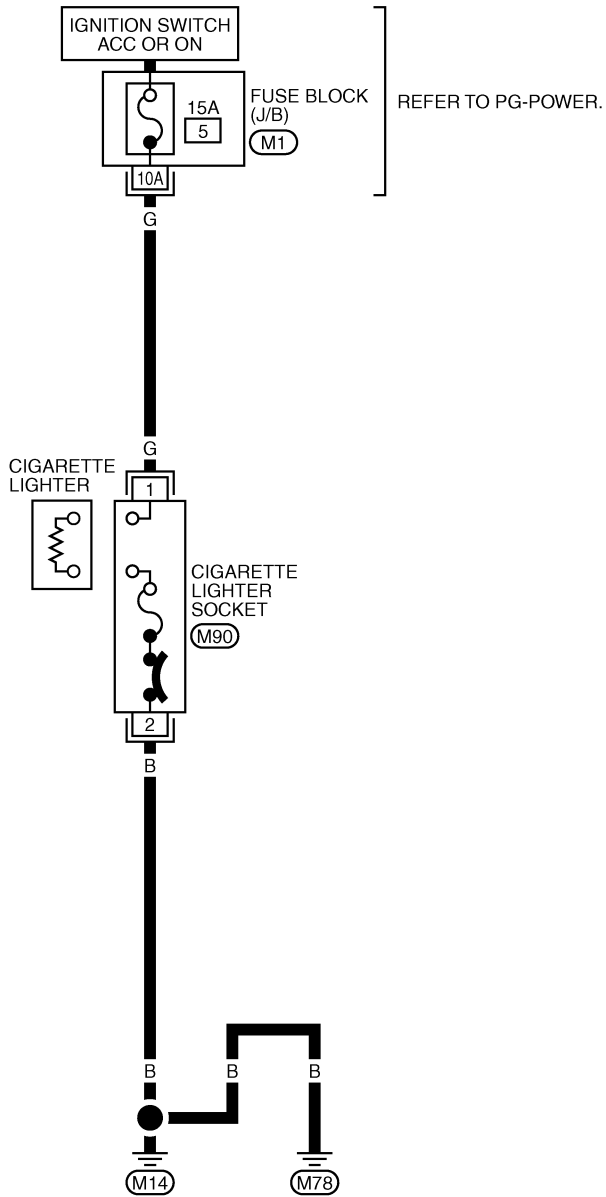
## CIGARETTE LIGHTER

### Wiring Diagram — CIGAR —

PFP:35330

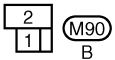
AKS00702

### WW-CIGAR-01



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J  
L  
M

WW



REFER TO THE FOLLOWING.  
**(M1)** - FUSE BLOCK-JUNCTION BOX (J/B)

TKWA1057E

# CIGARETTE LIGHTER

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