

# WW

## SECTION

### WIPER, WASHER & HORN

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## PRECAUTION

PFP:00011

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

EKS00DEF

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

EKS00DEG

When you read wiring diagrams, refer to the following:

- Refer to [GI-15, "How to Read Wiring Diagrams"](#) .
- Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) for power distribution circuit.

When you perform trouble diagnosis, refer to the following:

- Refer to [GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"](#) .
- Refer to [GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

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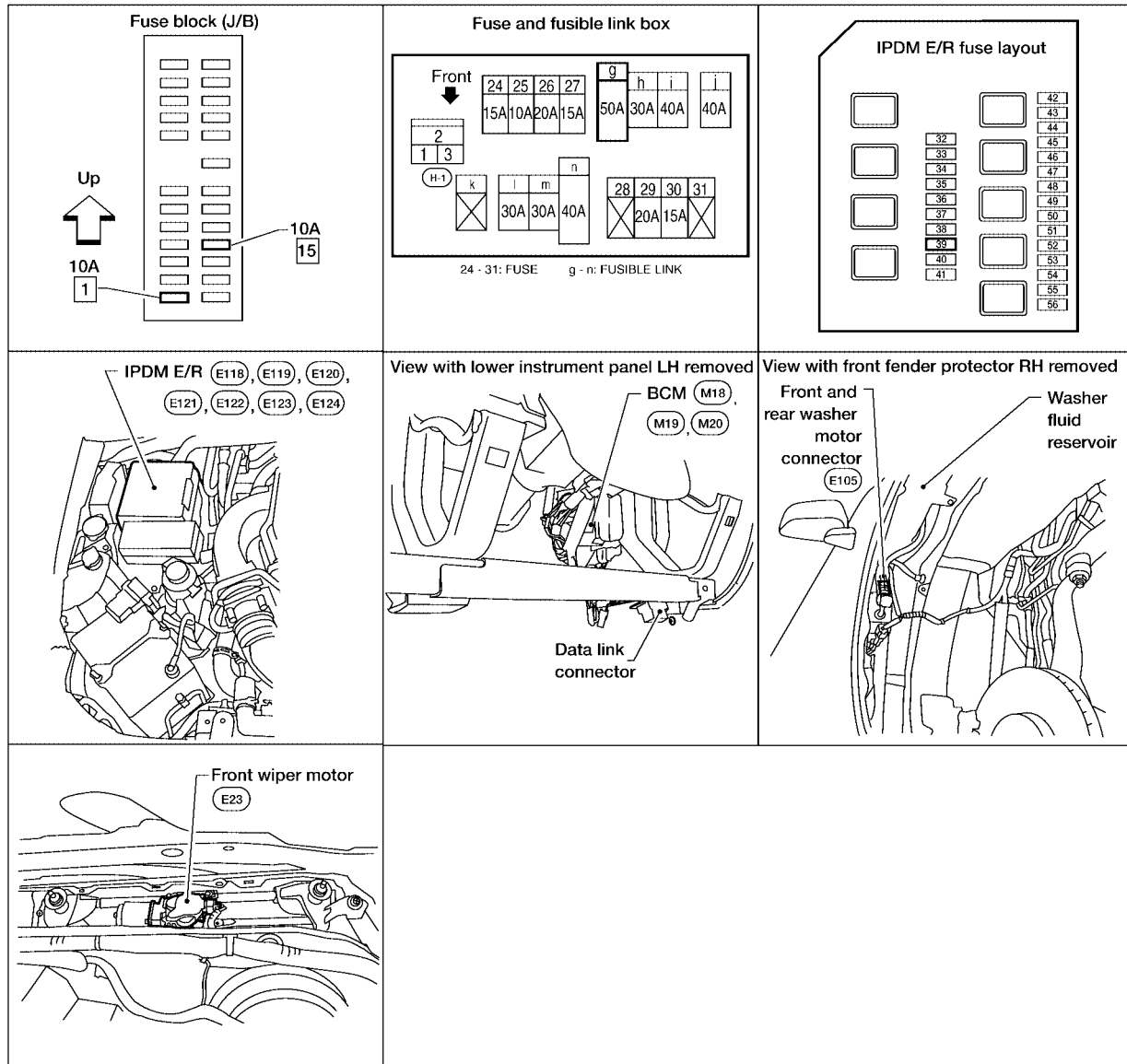
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## FRONT WIPER AND WASHER SYSTEM

PPF:28810

### Components Parts and Harness Connector Location

EKS00DEH



WKIA3719E

### System Description

EKS00DEI

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

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 30A fuse (No. 39, located in the IPDM E/R)
- to front wiper relay (located in the IPDM E/R).

With the ignition switch in ON or START position, power is supplied

# FRONT WIPER AND WASHER SYSTEM

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 15, located in the fuse block (J/B)]
- to combination switch terminal 2, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67 and
- to combination switch terminal 9
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 59 and
- to front wiper motor terminal 2
- through grounds E9, E15 and E24.

## LOW SPEED WIPER OPERATION

When the ignition switch is in the ON or START position, and the front wiper switch is turned to the low position, the BCM detects a low speed wiper ON request through the combination switch (wiper switch) reading function.

The BCM then sends a front wiper (low) request signal over CAN communication lines

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

When IPDM E/R receives front wiper (low) request signal, it supplies ground to energize the front wiper relay. With the front wiper relay energized, power is supplied

- through front wiper relay
- to front wiper high relay
- through IPDM E/R terminal 32
- to front wiper motor terminal 1.

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

## HI SPEED WIPER OPERATION

When the ignition switch is in the ON or START position, and the front wiper switch is turned to the high position, the BCM detects a high speed wiper ON request through the combination switch (wiper switch) reading function.

The BCM then sends a front wiper (high) request signal over CAN communication lines

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

When the IPDM E/R receives a front wiper (high) request signal, it supplies ground to energize the front wiper and the front wiper high relays.

With the front wiper and the front wiper high relays energized, power is supplied

- through front wiper relay
- to front wiper high relay
- through IPDM E/R terminal 35
- to front wiper motor terminal 4.

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

## INTERMITTENT OPERATION

Wiper intermittent operation delay interval is determined from the combination of the intermittent wiper dial position inputs and vehicle speed. During each intermittent operation delay interval, the BCM sends a front wiper request signal to the IPDM E/R to operate the wipers.

When the ignition switch is in the ON or START position, and the front wiper switch is turned to an intermittent position, the BCM detects a front wiper (intermittent) ON request through the combination switch (wiper switch) reading function.

The BCM then sends a front wiper (intermittent) request signal over CAN communication lines

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

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# FRONT WIPER AND WASHER SYSTEM

When the BCM determines that combination switch status is front wiper intermittent ON, it performs the following operations.

- BCM detects ON/OFF status of intermittent wiper dial position.
- BCM calculates operation interval from wiper dial position and vehicle speed signal received through CAN communications.
- BCM sends front wiper request signal (INT) to IPDM E/R at calculated operation interval.

When the IPDM E/R receives a front wiper request signal (INT), it supplies ground to energize the front wiper relay. It then sends an auto stop signal to the BCM, and conducts intermittent front wiper motor operation.

## AUTO STOP OPERATION

When the wiper arms are not located at the base of the windshield, and the wiper switch is turned OFF, the wiper motor will continue to operate until the wiper arms reach the windshield base. When the wiper arms reach the base of windshield, front wiper motor terminals 5 and 2 are connected.

Ground is supplied

- to IPDM E/R terminal 43
- through front wiper motor terminal 5
- through front wiper motor terminal 2
- through grounds E9, E15 and E24.

The IPDM E/R sends an auto stop operation signal to the BCM through CAN communication lines.

When the BCM receives an auto stop operation signal, the BCM sends wiper stop signal to the IPDM E/R over CAN communication lines. The IPDM E/R then de-energizes the front wiper relay.

The wiper motor will then stop the wiper arms at the STOP position.

## FRONT WASHER OPERATION

When the ignition switch is in the ON or START position, and the front and rear washer switches are OFF, the front and rear washer motor is supplied power

- through 10A fuse [No. 15, located in the fuse block (J/B)]
- through combination switch (wiper switch) terminal 2
- through combination switch (wiper switch) terminal 4
- to front and rear washer motor terminal 1.

When the front wiper switch is in the front washer position, the BCM detects a front washer signal request through the combination switch (wiper switch) reading function.

Combination switch ground is supplied

- to front and rear washer motor terminal 2
- through combination switch (wiper switch) terminal 3
- through combination switch (wiper switch) terminal 9
- through grounds M57, M61 and M79.

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

When the BCM detects that front washer motor has operated for 0.4 seconds or longer, the BCM uses CAN communication and sends a wiper request signal to the IPDM E/R for low speed operation of wipers.

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

## MIST OPERATION

When the wiper switch is temporarily placed in 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

The BCM includes fail-safe function to prevent malfunction of electrical components controlled by CAN communications if a malfunction in CAN communications occurs.

The BCM uses CAN communications to stop output of electrical components it controls.

Until the ignition switch is turned OFF, the front wiper system remains in same status as just before fail-safe control was initiated. (If wiper was in low speed operation just before fail-safe, it continues low speed operation until ignition switch is turned OFF.)

FRONT WIPER AND WASHER SYSTEM

When fail-safe status is initiated, the BCM remains in standby until normal signals are received.  
When normal signals are received, fail-safe status is canceled.

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

CAN Communication System Description

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

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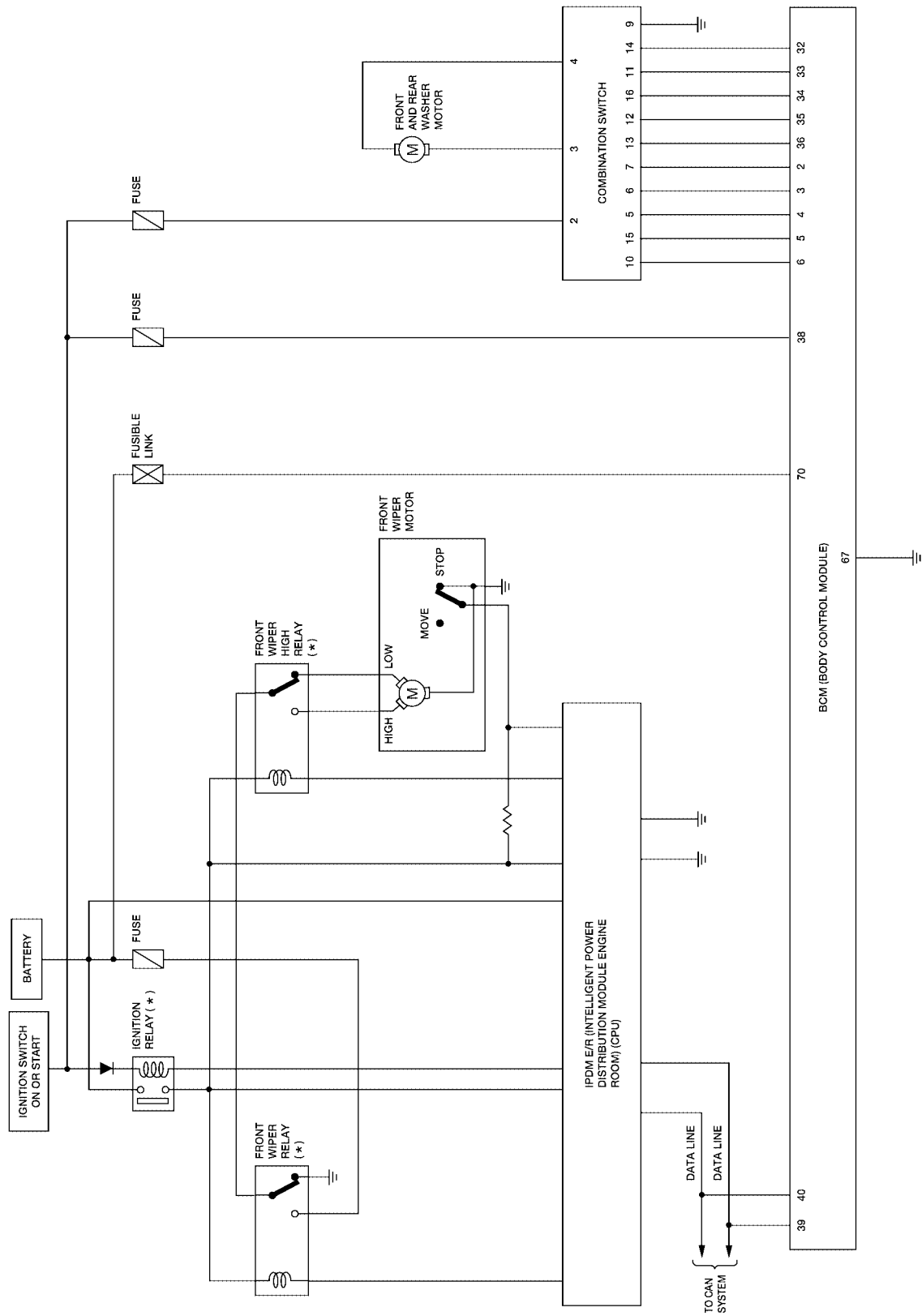
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M

# FRONT WIPER AND WASHER SYSTEM

## Schematic

EKS00DEK



\*: THIS RELAY IS BUILT INTO THE IPDM E/R  
(INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

WKWA2463E

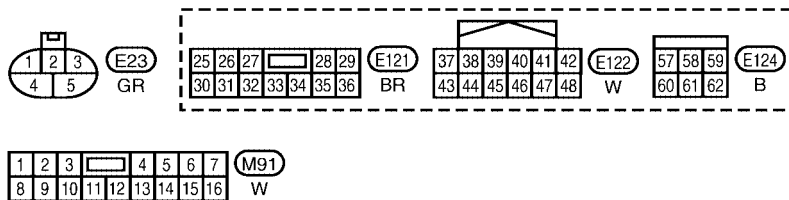
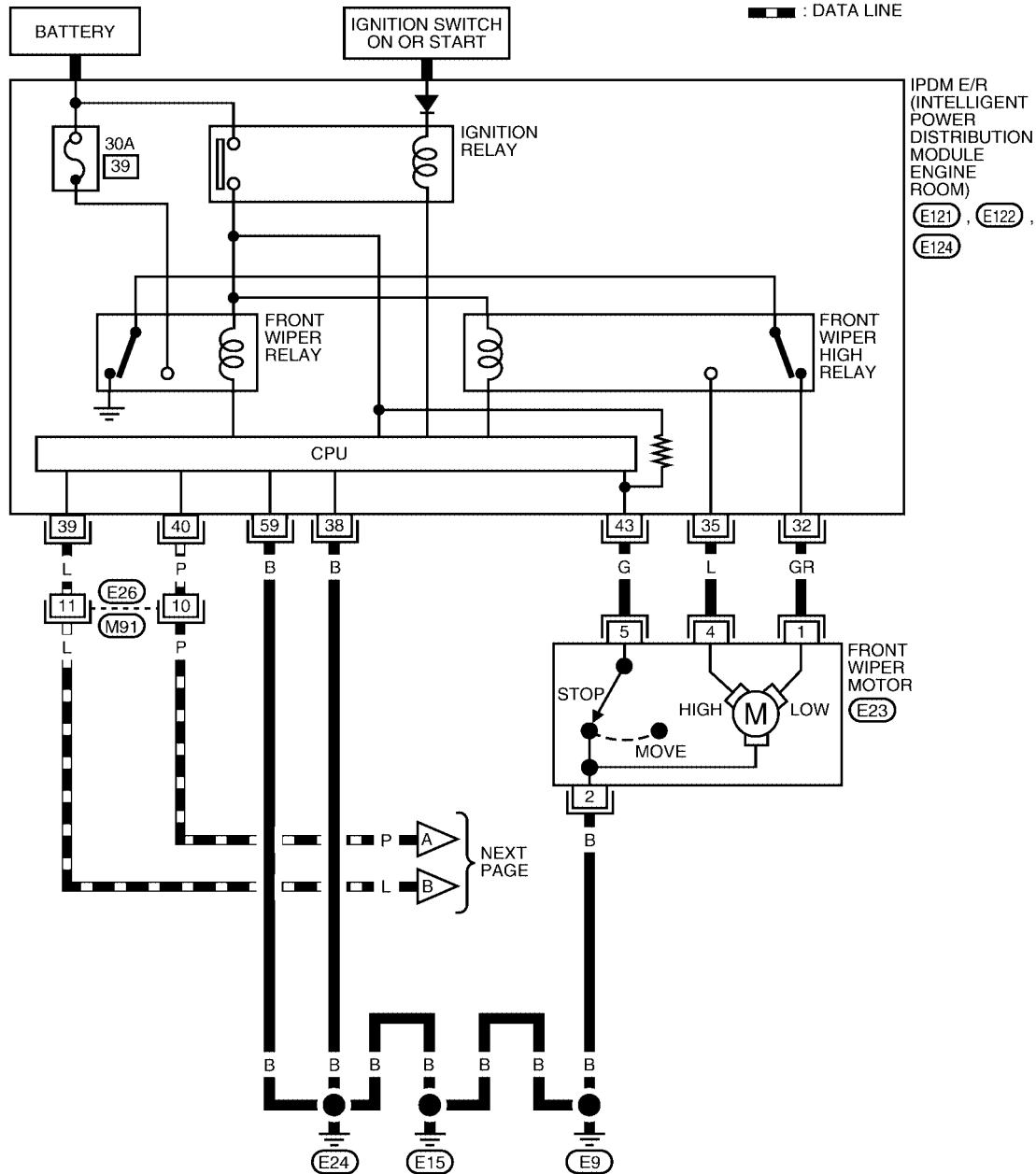


# FRONT WIPER AND WASHER SYSTEM

## Wiring Diagram — WIPER —

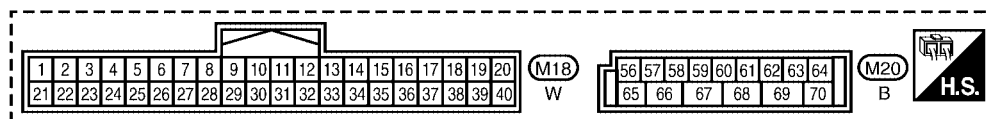
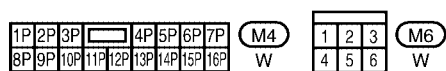
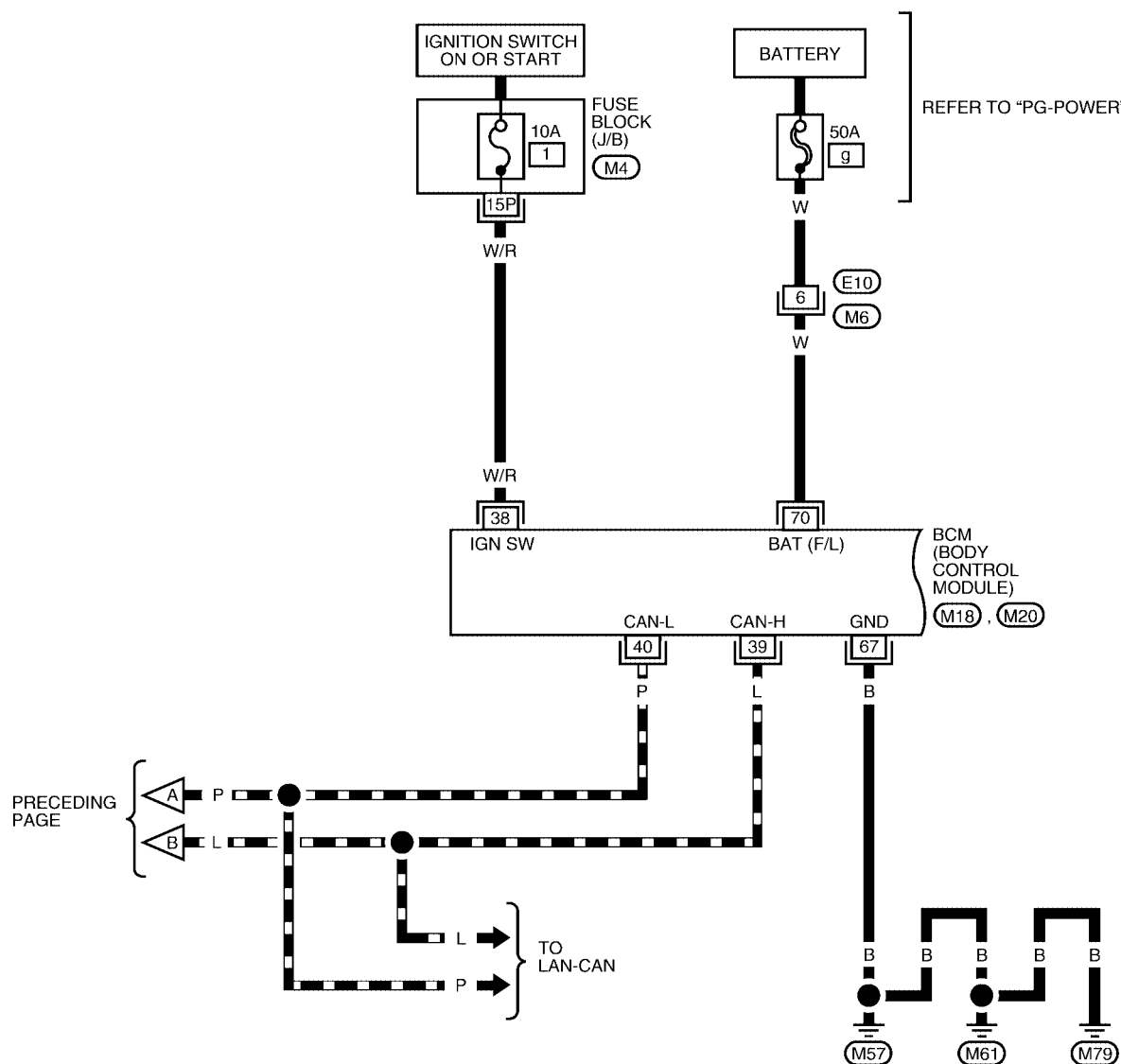
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WW-WIPER-01



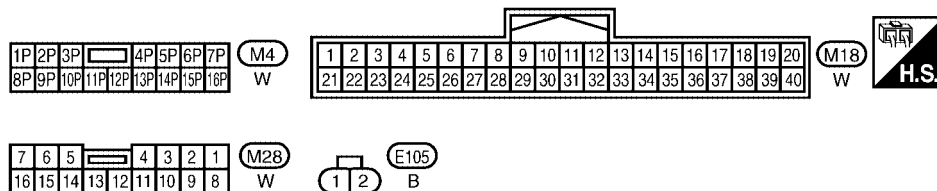
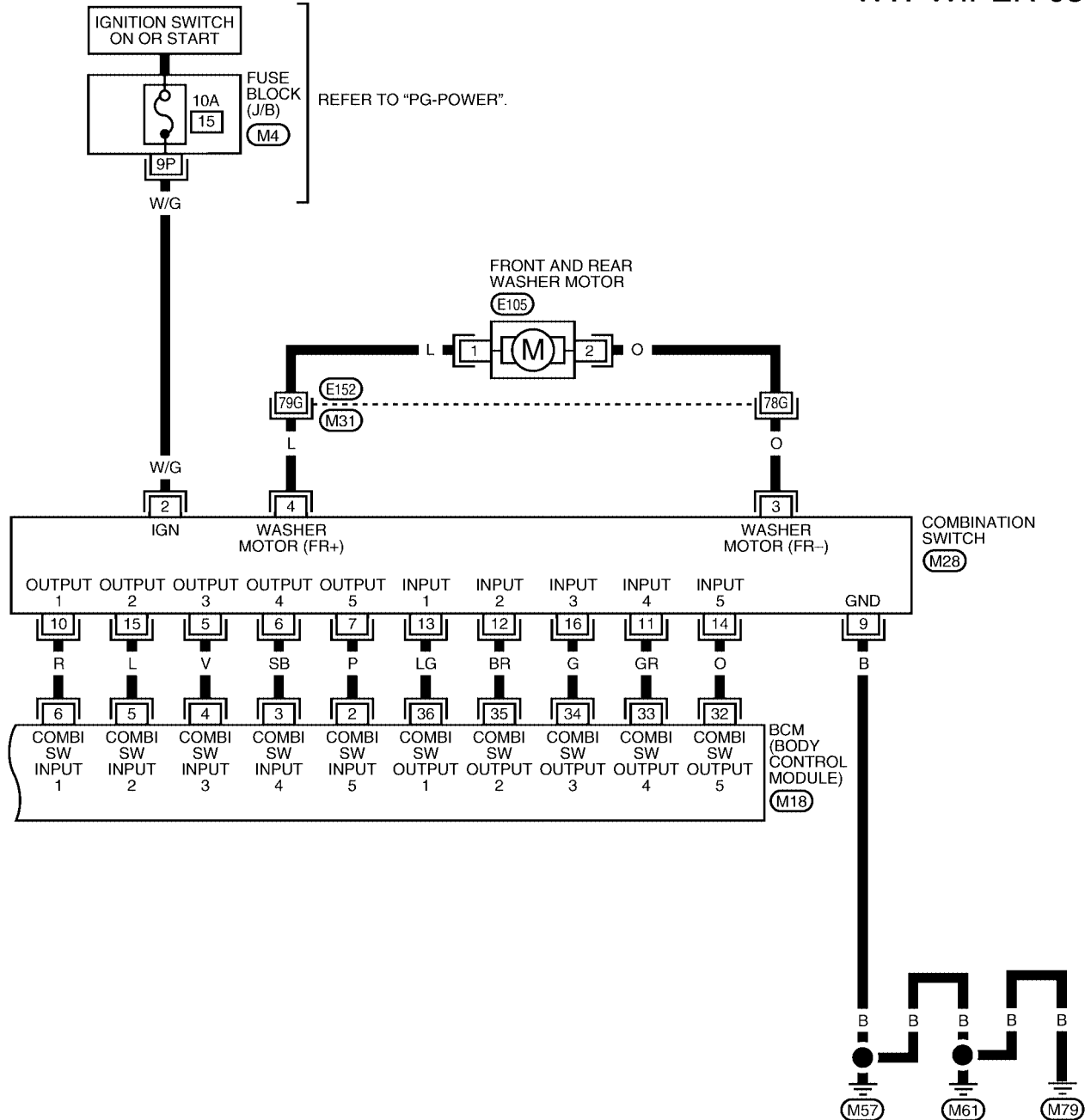
WKWA2464E

 : DATA LINE



WKWA2465E

WW-WIPER-03



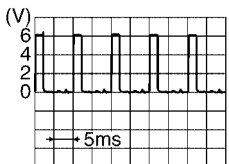

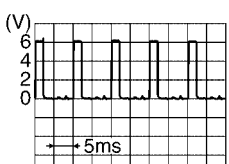

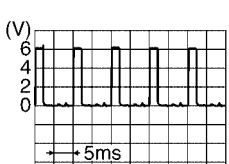


REFER TO THE FOLLOWING.  
**(M31)** - SUPER MULTIPLE  
 JUNCTION (SMJ)

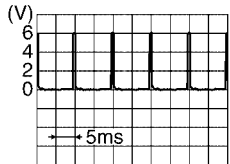
# FRONT WIPER AND WASHER SYSTEM

## Terminals and Reference Values for BCM

EKS00DEM

| Terminal No. | Wire color | Signal name                 | Measuring condition |  | Reference Value (V)<br>(Approx.)   |
|--------------|------------|-----------------------------|---------------------|--|--|
|              |            |                             | Ignition switch     | Operation or condition   |  |
| 2            | P          | Combination switch input 5  | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5291E</p>   |
| 3            | SB         | Combination switch input 4  | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5292E</p>   |
| 4            | V          | Combination switch input 3  | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5291E</p>   |
| 5            | L          | Combination switch input 2  | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5292E</p> |
| 6            | R          | Combination switch input 1  |                     |  |  |
| 32           | O          | Combination switch output 5 | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5291E</p> |
| 33           | GR         | Combination switch output 4 | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5292E</p> |
| 34           | G          | Combination switch output 3 | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5291E</p> |

# FRONT WIPER AND WASHER SYSTEM

| Terminal No. | Wire color | Signal name                 | Measuring condition |  | Reference Value (V)<br>(Approx.)  |
|--------------|------------|-----------------------------|---------------------|--|---|
|              |            |                             | Ignition switch     | Operation or condition   |   |
| 35           | BR         | Combination switch output 2 | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  |
| 36           | LG         | Combination switch output 1 |                     |  |   |
| 38           | W/R        | Ignition switch (ON)        | ON                  | —  | Battery voltage   |
| 39           | L          | CAN-H                       | ON                  | —  | —   |
| 40           | P          | CAN-L                       | ON                  | —  | —   |
| 67           | B          | Ground                      | —                   | —  | 0   |
| 70           | W          | Battery power               | OFF                 | —  | Battery voltage   |

## Terminals and Reference Values for IPDM E/R

EKS00DEN

| Terminal No. | Wire color | Signal name            | Measuring condition |                        | Reference value (V)<br>(Approx.) |
|--------------|------------|------------------------|---------------------|------------------------|----------------------------------|
|              |            |                        | Ignition switch     | Operation or condition |                                  |
| 32           | GR         | Low speed signal       | ON                  | Wiper switch OFF       | 0                                |
|              |            |                        |                     | LO                     | Battery voltage                  |
| 35           | L          | High speed signal      | ON                  | Wiper switch OFF       | 0                                |
|              |            |                        |                     | HI                     | Battery voltage                  |
| 38           | B          | Ground                 | —                   | —                      | 0                                |
| 39           | L          | CAN-H                  | ON                  | —                      | —                                |
| 40           | P          | CAN-L                  | ON                  | —                      | —                                |
| 43           | G          | Wiper auto stop signal | ON                  | Wiper operating        | Battery voltage                  |
|              |            |                        |                     | Wiper stopped          | 0                                |
| 59           | B          | Ground                 | —                   | —                      | 0                                |

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## Work Flow

EKS00DEO

1. Confirm the symptom or customer complaint.
2. Understand the system description, refer to [WW-4, "System Description"](#).
3. Perform preliminary inspection, refer to [WW-13, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does wiper function operate normally? If it operates normally, GO TO 6. If not, GO TO 4.
6. Inspection End.

## Preliminary Check

EKS00DEP

### INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Inspection procedure

#### 1. CHECK FUSE

Check if wiper or washer fuse is blown.

| Unit                        | Power source         | Fuse No. |
|-----------------------------|----------------------|----------|
| BCM                         | Ignition ON or START | 1        |
|                             | Battery              | g        |
| Front wiper relay           | Battery              | 39       |
| Front and rear washer motor | Ignition ON or START | 15       |

# FRONT WIPER AND WASHER SYSTEM

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of blown fuse before installing new fuse. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

## 2. CHECK POWER SUPPLY CIRCUIT

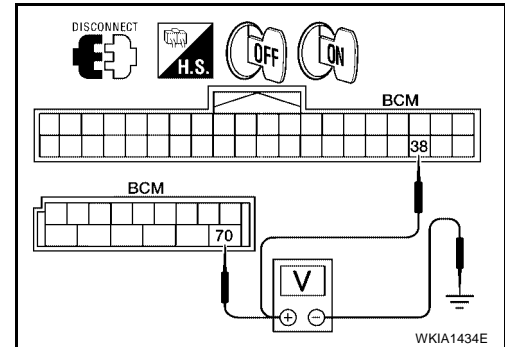
1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector terminals and ground.

| BCM           |    | (-)    | Ignition switch position |                 |
|---------------|----|--------|--------------------------|-----------------|
| (+) Connector |    |        | OFF                      | ON              |
| Terminal      |    |        |                          |                 |
| M18           | 38 | Ground | 0V                       | Battery voltage |
| M20           | 70 |        | Battery voltage          |                 |

OK or NG

OK >> GO TO 3.

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



## 3. GROUND CIRCUIT INSPECTION (BCM)

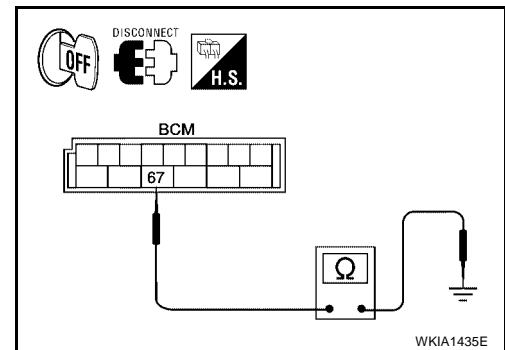
Check for continuity between BCM terminal and ground.

| BCM       |          |        | Ignition switch condition | Continuity |
|-----------|----------|--------|---------------------------|------------|
| Connector | Terminal |        |                           |            |
| M20       | 67       | Ground | OFF                       | Yes        |

OK or NG

OK >> Inspection End.

NG >> Repair/replace BCM ground circuit.



# FRONT WIPER AND WASHER SYSTEM

## CONSULT-II Function (BCM)

EKS00DEQ

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

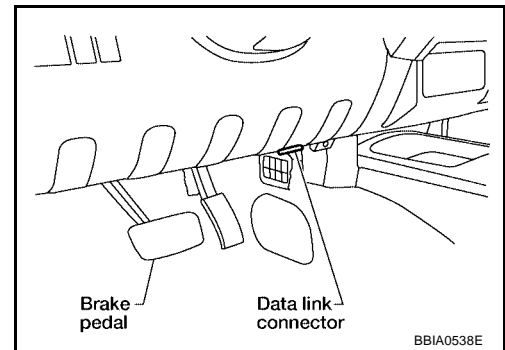
| BCM diagnostic test item | Diagnostic mode       | Description  |
|--------------------------|-----------------------|--|
| Inspection by part       | WORK SUPPORT          | Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed. |
|                          | DATA MONITOR          | Displays BCM input/output data in real time.   |
|                          | ACTIVE TEST           | Operation of electrical loads can be checked by sending drive signal to them.  |
|                          | SELF-DIAG RESULTS     | Displays BCM self-diagnosis results.   |
|                          | CAN DIAG SUPPORT MNTR | The result of transmit/receive diagnosis of CAN communication can be read.   |
|                          | ECU PART NUMBER       | BCM part number can be read.   |
|                          | CONFIGURATION         | Performs BCM configuration read/write functions.   |

## CONSULT-II OPERATION

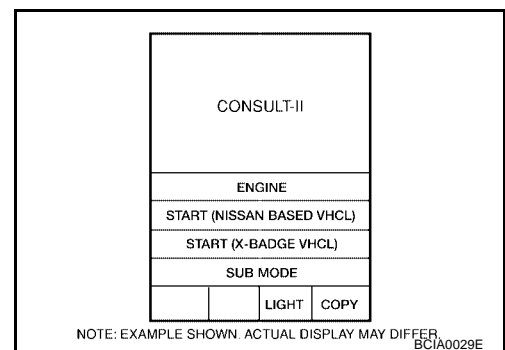
### CAUTION:

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

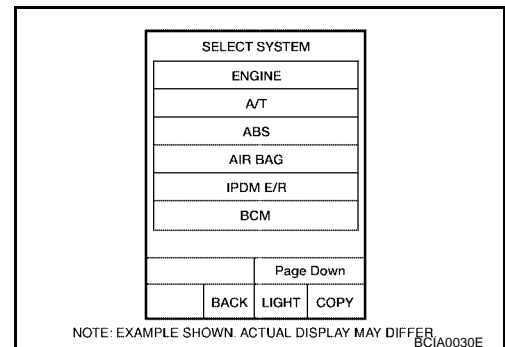
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



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



3. Touch "BCM" on the "SELECT SYSTEM" screen.  
If "BCM" is not indicated, go to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#) .



## FRONT WIPER AND WASHER SYSTEM

4. Select the desired part to be diagnosed on the "SELECT TEST ITEM" screen.

| SELECT TEST ITEM |       |           |  |
|------------------|-------|-----------|--|
| HEAD LAMP        |       |           |  |
| WIPER            |       |           |  |
| FLASHER          |       |           |  |
| AIR CONDITIONER  |       |           |  |
| COMB SW          |       |           |  |
| BCM              |       |           |  |
| Scroll Up        |       | Page Down |  |
| BACK             | LIGHT | COPY      |  |

LKIA0183E

### DATA MONITOR

#### Operation Procedure

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

|                     |  |
|---------------------|--|
| ALL SIGNALS         | Monitors all the items.                            |
| SELECTION FROM MENU | Selects and monitors the individual item selected. |

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

#### Display Item List

| Monitor item name<br>"OPERATION OR UNIT" | Contents   |
|--|--|
| IGN ON SW "ON/OFF"                       | Displays "IGN Position (ON)/OFF, ACC Position (OFF)" status as judged from ignition switch signal. |
| IGN SW CAN "ON/OFF"                      | Displays "IGN switch ON (ON)/Other OFF or ACC (OFF)" status as judged from CAN communications.     |
| FR WIPER HI "ON/OFF"                     | Displays "Front Wiper HI (ON)/Other (OFF)" status as judged from wiper switch signal.              |
| FR WIPER LOW "ON/OFF"                    | Displays "Front Wiper LOW (ON)/Other (OFF)" status as judged from wiper switch signal.             |
| FR WIPER INT "ON/OFF"                    | Displays "Front Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.             |
| FR WASHER SW "ON/OFF"                    | Displays "Front Washer Switch (ON)/Other (OFF)" status as judged from wiper switch signal.         |
| INT VOLUME (1 - 7)                       | Displays intermittent operation dial position setting (1 - 7) as judged from wiper switch signal.  |
| FR WIPER STOP "ON/OFF"                   | Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto stop signal.                |
| VEHICLE SPEED "0.0 km/h"                 | Displays vehicle speed as received from CAN communication.   |

### ACTIVE TEST

#### Operation Procedure

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

#### Display Item List

| Test item             | Display on CONSULT-II screen | Description   |
|-----------------------|------------------------------|---|
| Front wiper HI output | FR WIPER (HI)                | Front wiper HI can be operated by any ON-OFF operation. |



# FRONT WIPER AND WASHER SYSTEM

| Test item              | Display on CONSULT-II screen | Description  |
|------------------------|------------------------------|--|
| Front wiper LO output  | FR WIPER (LO)                | Front wiper LO can be operated by any ON-OFF operation.  |
| Front wiper INT output | FR WIPER (INT)               | Front wiper INT can be operated by any ON-OFF operation. |

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

EKS00DER

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

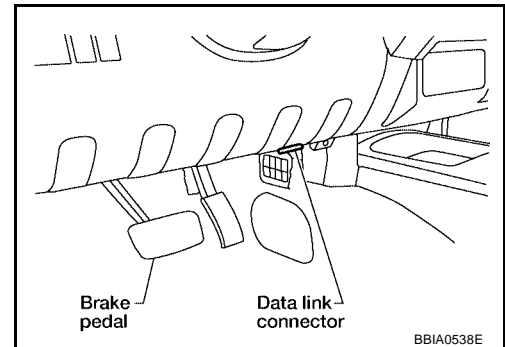
| IPDM E/R diagnostic Mode | Description   |
|--------------------------|---|
| SELF-DIAG RESULTS        | Displays IPDM E/R self-diagnosis results.                                     |
| DATA MONITOR             | Displays IPDM E/R input/output data in real time.                             |
| CAN DIAG SUPPORT MNTR    | The result of transmit/receive diagnosis of CAN communication can be read.    |
| ACTIVE TEST              | Operation of electrical loads can be checked by sending drive signal to them. |

## CONSULT-II OPERATION

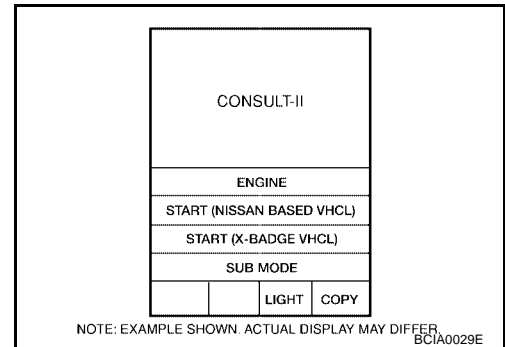
### CAUTION:

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

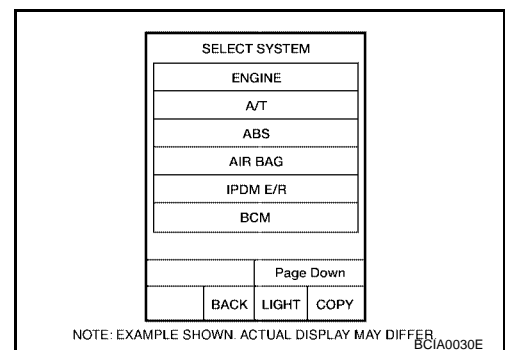
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



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

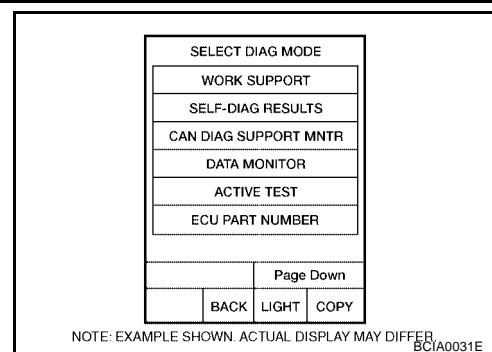


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, go to [GI-38. "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



# FRONT WIPER AND WASHER SYSTEM

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



## DATA MONITOR

### Operation Procedure

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

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

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

### All Items, Main Items, Select Item Menu

| Item name           | CONSULT-II screen display | Display or unit | Monitor item selection |              |                     | Description                   |
|---------------------|---------------------------|-----------------|------------------------|--------------|---------------------|-------------------------------|
|                     |                           |                 | ALL SIGNALS            | MAIN SIGNALS | SELECTION FROM MENU |                               |
| Front wiper request | FR WIP REQ                | STOP/1LO/LO/HI  | x                      | x            | x                   | Signal status input from BCM. |
| Wiper auto stop     | WIP AUTO STOP             | ACT P/STOP P    | x                      | x            | x                   | Output status of IPDM E/R.    |
| Wiper protection    | WIP PROT                  | OFF/LS/HS/BLOCK | x                      | x            | x                   | 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 "WIPER" on the "SELECT TEST ITEM" screen.
2. Touch "ACTIVE TEST" on the "SELECT DIAG MODE" screen.
3. Touch item(s) to be tested and check operation of the selected item(s).
4. During the operation check, touching "BACK" deactivates the operation.

### Display Item List

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

# FRONT WIPER AND WASHER SYSTEM

## Trouble Diagnosis

EKS00DES

### FRONT WIPER DOES NOT OPERATE

#### CAUTION:

During IPDM E/R fail-safe control, front wipers may not operate. Refer to [PG-17, "CAN COMMUNICATION LINE CONTROL"](#) to make sure that it is not in fail-safe status.

#### Inspection Procedure

#### 1. CHECK IPDM E/R TO FRONT WIPERS

##### Ⓔ With CONSULT-II

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

##### ⓧ Without CONSULT-II

1. Turn on front wipers using auto active test. Refer to [PG-22, "Auto Active Test"](#).
2. Confirm front wiper operation.

#### OK or NG

- OK    >> GO TO 4.  
NG    >> GO TO 2.

| ACTIVE TEST |      |       |      |
|-------------|------|-------|------|
| FRONT WIPER |      | OFF   |      |
|             |      |       |      |
| HI          |      | LO    |      |
|             |      |       |      |
|             |      |       |      |
| MODE        | BACK | LIGHT | COPY |

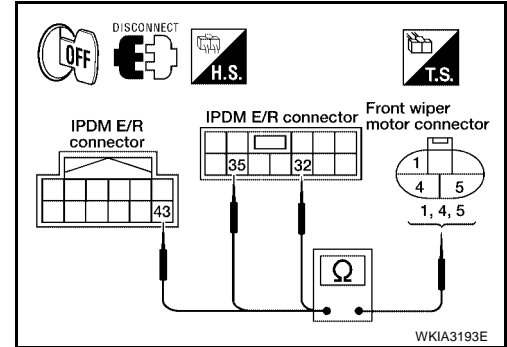
SKIA3486E

# FRONT WIPER AND WASHER SYSTEM

## 2. IPDM E/R TO FRONT WIPERS CONTINUITY INSPECTION

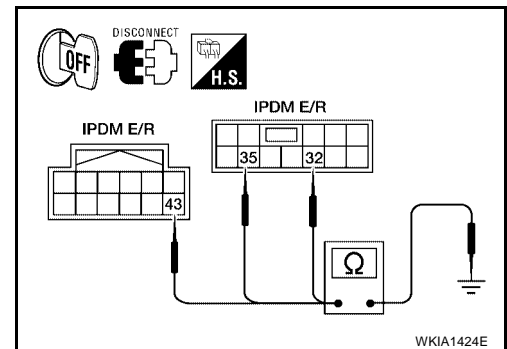
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connectors and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector terminals and front wiper motor harness connector terminals.

| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E121      | 32       | E23               | 1        | Yes        |
|           | 35       |                   | 4        |            |
| E122      | 43       |                   | 5        |            |



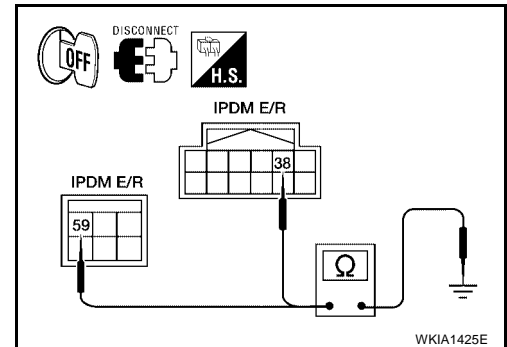
4. Check continuity between IPDM E/R harness connector terminals and ground.

| IPDM E/R  |          |        | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| E121      | 32       | Ground | No         |
|           | 35       |        |            |
| E122      | 43       |        |            |



5. Check continuity between IPDM E/R harness connector terminal and ground.

| IPDM E/R  |          |        | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| E122      | 38       | Ground | Yes        |
| E124      | 59       |        |            |

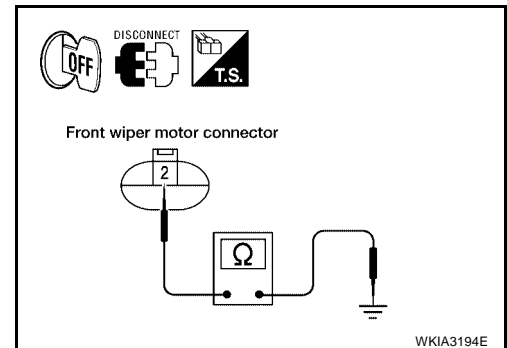


6. Check continuity between front wiper motor harness connector E23 terminal 2 and ground.

| Front wiper motor |          |        | Continuity |
|-------------------|----------|--------|------------|
| Connector         | Terminal |        |            |
| E23               | 2        | Ground | Yes        |

### OK or NG

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



# FRONT WIPER AND WASHER SYSTEM

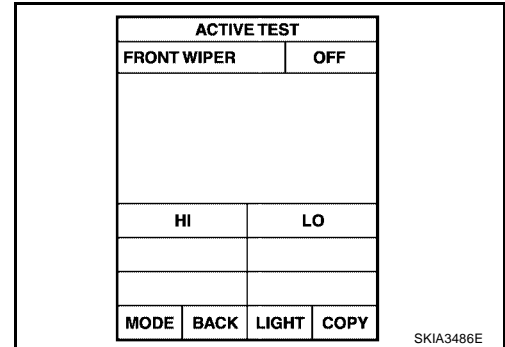
## 3. IPDM E/R INSPECTION

① With CONSULT-II

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

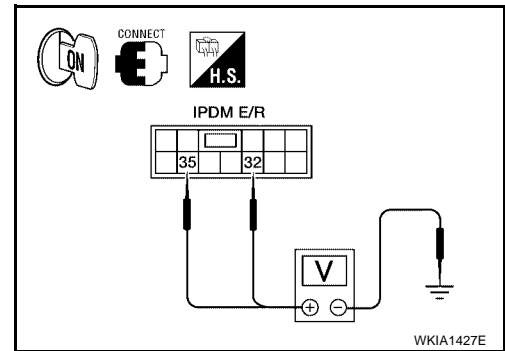
⊗ Without CONSULT-II

1. Turn on front wipers using the auto active test. Refer to [PG-22, "Auto Active Test"](#).



When front wiper relay, and front wiper high relay are operating, check voltage between IPDM E/R harness connector E121 terminals 32, 35 and ground.

| IPDM E/R  |          | (-)    | Condition    | Voltage<br>(Approx.) |
|-----------|----------|--------|--------------|----------------------|
| (+)       |          |        |              |                      |
| Connector | Terminal |        |              |                      |
| E121      | 32       | Ground | Stopped      | 0                    |
|           |          |        | LO operation | Battery voltage      |
|           | 35       |        | Stopped      | 0                    |
|           |          |        | HI operation | Battery voltage      |



OK or NG

- OK >> Replace the front wiper motor. Refer to [WW-30, "Removal and Installation of Wiper Motor and Linkage"](#).
- NG >> Replace IPDM E/R. Refer to [PG-28, "Removal and Installation of IPDM E/R"](#).

## 4. CHECK COMBINATION SWITCH TO BCM

Select "BCM" on CONSULT-II. With "WIPER" data monitor, check that "FR WIPER INT", "FR WIPER LOW" and "FR WIPER HI" turn ON-OFF according to operation of wiper switch.

OK or NG

- OK >> GO TO 5.
- NG >> Check wiper switch. Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#).

| DATA MONITOR  |          |
|---------------|----------|
| MONITOR       |          |
| IGN ON SW     | OFF      |
| 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     |

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## FRONT WIPER AND WASHER SYSTEM

### 5. COMBINATION SWITCH TO BCM CONTINUITY INSPECTION

Select "BCM" on CONSULT-II. Carry out self-diagnosis of BCM.

Displayed self-diagnosis results

NO DTC>> Replace the BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).

CAN COMM CIRCUIT>> Check CAN communication line of BCM.  
GO TO [BCS-13, "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 STOP POSITION IS INCORRECT

#### Inspection Procedure

#### 1. CHECK IPDM E/R TO FRONT WIPER MOTOR

Ⓔ With CONSULT-II

Select "IPDM E/R" with CONSULT-II. With data monitor, confirm that "WIP AUTO STOP" changes from "ACT P" to "STOP P" according to wiper operation.

ⓧ Without CONSULT-II

GO TO 2.

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-28, "Removal and Installation of 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   |

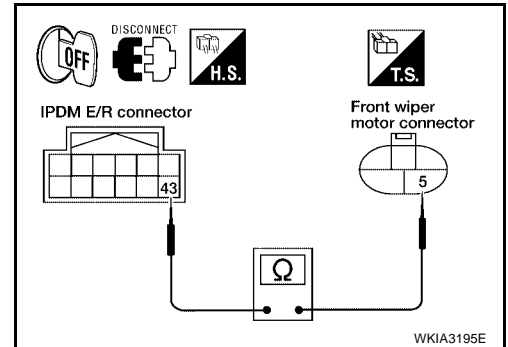
SKIA5301E

# FRONT WIPER AND WASHER SYSTEM

## 2. IPDM E/R TO FRONT WIPER MOTOR CONTINUITY INSPECTION

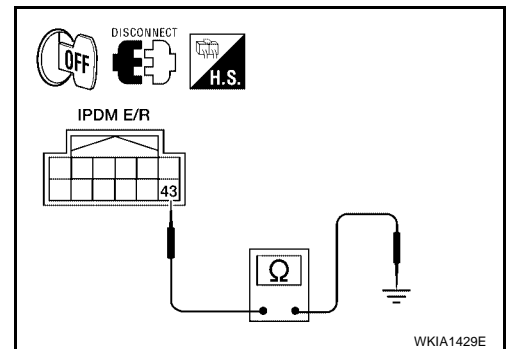
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector E122 terminal 43 and front wiper motor harness connector E23 terminal 5.

| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E122      | 43       | E23               | 5        | Yes        |



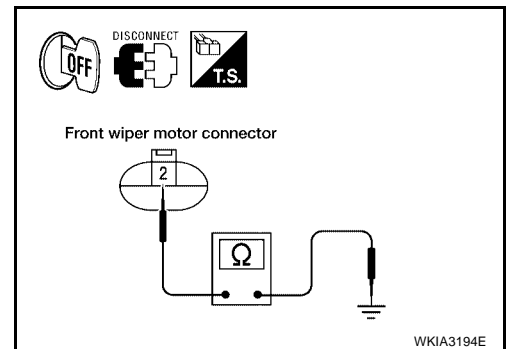
4. Check continuity between IPDM E/R harness connector E122 terminal 43 and ground.

| IPDM E/R  |          |        | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| E122      | 43       | Ground | No         |



5. Check continuity between front wiper motor harness connector E23 terminal 2 and ground.

| Front wiper motor |          |        | Continuity |
|-------------------|----------|--------|------------|
| Connector         | Terminal |        |            |
| E23               | 2        | Ground | Yes        |



OK or NG

OK >> GO TO 3.

NG >> ● Check for short circuit or open circuit in harness between IPDM E/R and front wiper motor.

- Check for open circuit in harness between front wiper motor and ground.

# FRONT WIPER AND WASHER SYSTEM

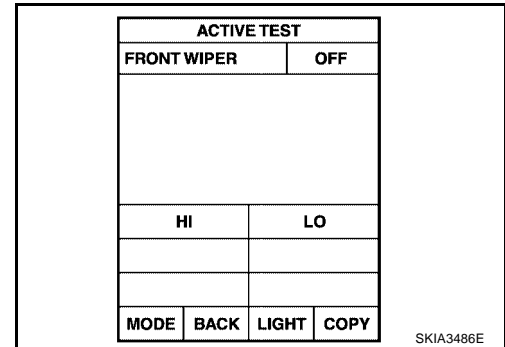
## 3. IPDM E/R INSPECTION

Ⓟ With CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Select "LO" on "ACTIVE TEST" screen.

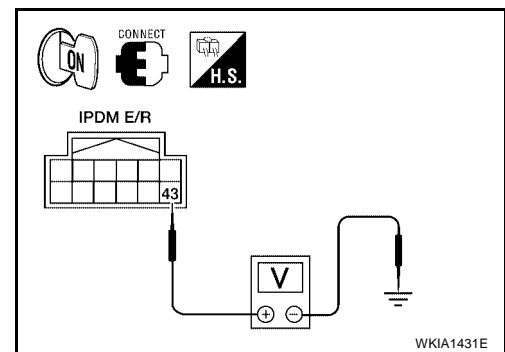
ⓧ Without CONSULT-II

1. Connect IPDM E/R connector and front wiper motor connector.
2. Turn on front wipers using the auto active test. Refer to [PG-22, "Auto Active Test"](#).



When front wipers are operating and when stopped, measure voltage between IPDM E/R harness connector E122 terminal 43 and ground.

| IPDM E/R     |          | (−)    | Condition       | Voltage<br>(Approx.) |
|--------------|----------|--------|-----------------|----------------------|
| (+) Terminal |          |        |                 |                      |
| Connector    | Terminal |        |                 |                      |
| E122         | 43       | Ground | Wiper operating | Battery<br>voltage   |
|              |          |        | Wiper stopped   | 0V                   |



OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-28, "Removal and Installation of IPDM E/R"](#).
- NG >> Replace front wiper motor. Refer to [WW-30, "Removal and Installation of Wiper Motor and Linkage"](#).

## ONLY FRONT WIPER LOW DOES NOT OPERATE

### Inspection Procedure

#### 1. CHECK IPDM E/R TO FRONT WIPERS

Ⓟ With CONSULT-II

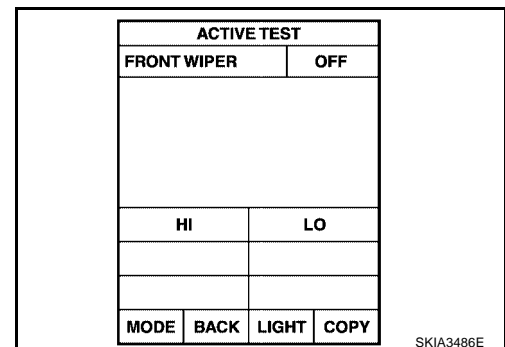
1. Select "IPDM E/R" with CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Select "LO" on "ACTIVE TEST" screen.
4. Confirm front wiper low operation.

ⓧ Without CONSULT-II

1. Turn on front wipers using auto active test. Refer to [PG-22, "Auto Active Test"](#).
2. Confirm front wiper low operation.

OK or NG

- OK >> GO TO 4.
- NG >> GO TO 2.





# FRONT WIPER AND WASHER SYSTEM

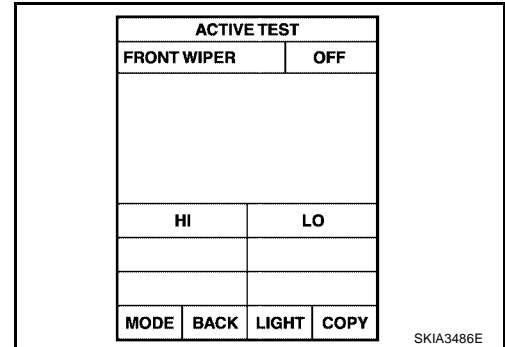
## 2. IPDM E/R INSPECTION

① With CONSULT-II

1. Select "LO" on "ACTIVE TEST" screen.

② Without CONSULT-II

1. Turn on front wipers using the auto active test. Refer to [PG-22, "Auto Active Test"](#).



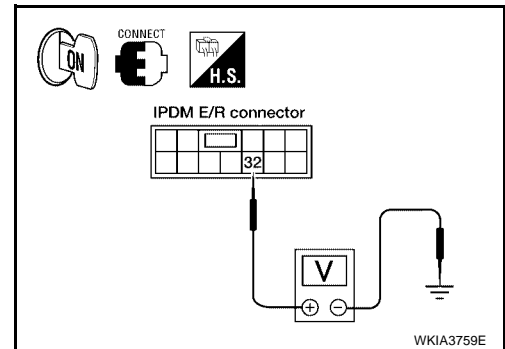
When front wiper relay is operating, check voltage between IPDM E/R terminal and ground.

| IPDM E/R  |          | (-)    | Condition       | Voltage (Approx.) |
|-----------|----------|--------|-----------------|-------------------|
| Connector | Terminal |        |                 |                   |
| E121      | 32       | Ground | Wiper operating | Battery voltage   |

OK or NG

OK >> GO TO 3.

NG >> Replace IPDM E/R. Refer to [PG-28, "Removal and Installation of IPDM E/R"](#).



## 3. IPDM E/R TO FRONT WIPERS CIRCUIT INSPECTION

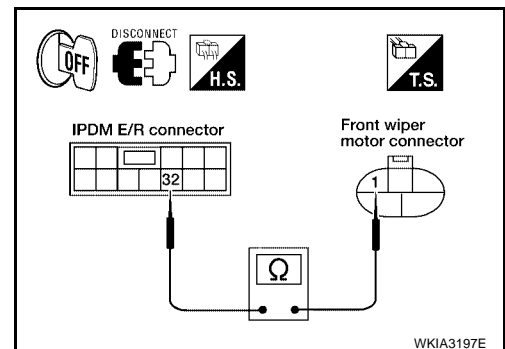
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front wiper motor connector.
3. Check continuity between IPDM E/R harness connector terminal and front wiper motor harness connector terminal.

| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E121      | 32       | E23               | 1        | Yes        |

OK or NG

OK >> Replace the wiper motor. Refer to [WW-30, "Removal and Installation of Wiper Motor and Linkage"](#).

NG >> Repair harness or connector.



## 4. COMBINATION SWITCH TO BCM INSPECTION

Select "BCM" on CONSULT-II. With "WIPER" data monitor, check that "FR WIPER LO" turns ON-OFF according to operation of wiper switch.

OK or NG

OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).

NG >> Replace wiper switch. Refer to [WW-32, "Removal and Installation of Wiper and Washer Switch"](#).

| DATA MONITOR  |          |
|---------------|----------|
| MONITOR       |          |
| IGN ON SW     | OFF      |
| 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     |

WKIA1018E

# FRONT WIPER AND WASHER SYSTEM

## ONLY FRONT WIPER HI DOES NOT OPERATE

### Inspection Procedure

#### 1. CHECK IPDM E/R TO FRONT WIPERS

① With CONSULT-II

1. Select "IPDM E/R" with CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "FRONT WIPER" on "SELECT TEST ITEM" screen.
3. Select "HI" on "ACTIVE TEST" screen.
4. Confirm front wiper high operation.

② Without CONSULT-II

1. Turn on front wipers using auto active test. Refer to [PG-22, "Auto Active Test"](#).
2. Confirm front wiper operation.

OK or NG

- OK >> GO TO 4.  
NG >> GO TO 2.

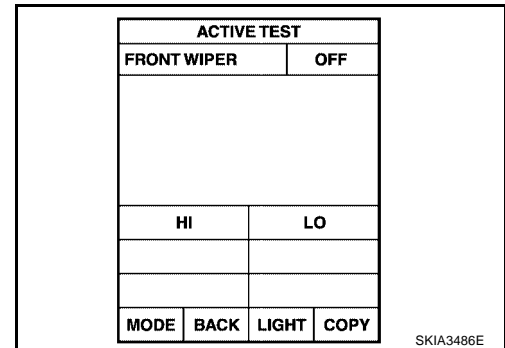
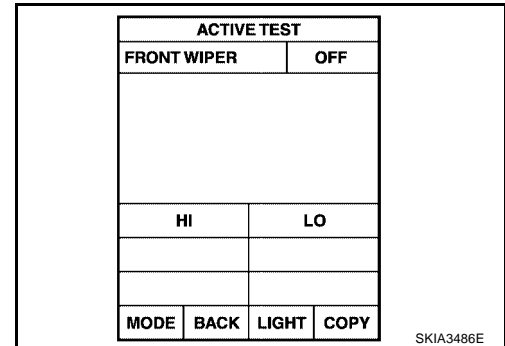
#### 2. IPDM E/R INSPECTION

① With CONSULT-II

1. Select "HI" on "ACTIVE TEST" screen.

② Without CONSULT-II

1. Turn on front wipers using the auto active test. Refer to [PG-22, "Auto Active Test"](#).

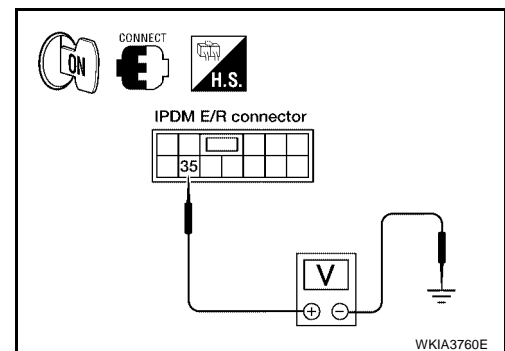


When front wiper relay high is operating, check voltage between IPDM E/R terminal and ground.

| IPDM E/R      |    | (-)    | Condition       | Voltage<br>(Approx.) |
|---------------|----|--------|-----------------|----------------------|
| (+) Connector |    |        |                 |                      |
| Terminal      |    |        |                 |                      |
| E121          | 35 | Ground | Wiper operating | Battery<br>voltage   |

OK or NG

- OK >> GO TO 3.  
NG >> Replace IPDM E/R. Refer to [PG-28, "Removal and Installation of IPDM E/R"](#).



# FRONT WIPER AND WASHER SYSTEM

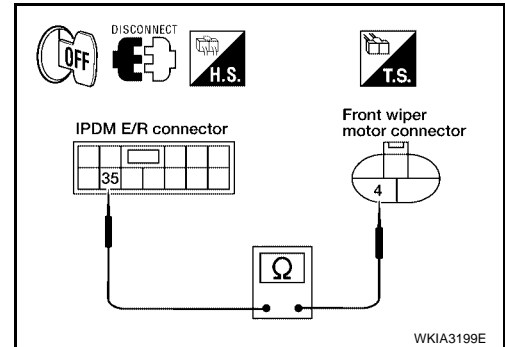
## 3. IPDM E/R TO FRONT WIPERS CIRCUIT INSPECTION

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 terminal and front wiper motor harness connector terminal.

| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E121      | 35       | E23               | 4        | Yes        |

OK or NG

- OK >> Replace the wiper motor. Refer to [WW-30, "Removal and Installation of Wiper Motor and Linkage"](#) .
- NG >> Repair harness or connector.



## 4. COMBINATION SWITCH TO BCM INSPECTION

Select "BCM" on CONSULT-II. With "WIPER" data monitor, check that "FR WIPER HI" turns ON-OFF according to operation of wiper switch.

OK or NG

- OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#) .
- NG >> Replace wiper switch. Refer to [WW-32, "Removal and Installation of Wiper and Washer Switch"](#) .

| DATA MONITOR  |          |
|---------------|----------|
| MONITOR       |          |
| IGN ON SW     | OFF      |
| 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     |

## ONLY FRONT WIPER INT DOES NOT OPERATE

### Inspection Procedure

#### 1. CHECK COMBINATION SWITCH TO BCM

Select "BCM" on CONSULT-II. With "WIPER" data monitor, check that "FR WIPER INT" turns ON-OFF according to operation of wiper switch.

OK or NG

- OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#) .
- NG >> Replace wiper switch. Refer to [WW-32, "Removal and Installation of Wiper and Washer Switch"](#) .

| DATA MONITOR  |          |
|---------------|----------|
| MONITOR       |          |
| IGN ON SW     | OFF      |
| 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     |

# FRONT WIPER AND WASHER SYSTEM

## FRONT WIPER INTERMITTENT OPERATION SWITCH POSITION CANNOT BE ADJUSTED

### Inspection Procedure

#### 1. CHECK COMBINATION SWITCH TO BCM

Select "BCM" on CONSULT-II. With "WIPER" data monitor, check that "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 [BCS-19, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch. Refer to [WW-32, "Removal and Installation of Wiper and Washer Switch"](#).

| DATA MONITOR  |          |
|---------------|----------|
| MONITOR       |          |
| IGN ON SW     | OFF      |
| 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     |

WKIA1018E

## WIPERS DO NOT WIPE WHEN FRONT WASHER OPERATES

### Inspection Procedure

#### 1. CHECK COMBINATION SWITCH TO BCM

Select "BCM" on CONSULT-II. With "WIPER" data monitor, check that "FR WASHER SW" turns ON-OFF according to operation of front washer switch.

OK or NG

- OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).
- NG >> Replace wiper switch. Refer to [WW-32, "Removal and Installation of Wiper and Washer Switch"](#).

| DATA MONITOR  |          |
|---------------|----------|
| MONITOR       |          |
| IGN ON SW     | OFF      |
| 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     |

WKIA1018E

## FRONT WIPERS OPERATE FOR 10 SECONDS, STOP FOR 20 SECONDS, AND AFTER REPEATING THIS OPERATION FIVE TIMES, THEY BECOME INOPERATIVE

### 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 front wipers locked and stops wiper output, which causes this symptom.
- This status can be checked by using IPDM E/R "DATA MONITOR". Under this condition, "WIP PROT" reads "BLOCK".

### Inspection Procedure

#### 1. CHECK IPDM E/R TO FRONT WIPER MOTOR

① With CONSULT-II

Select "IPDM E/R" with CONSULT-II. With data monitor, confirm that "WIP AUTO STOP" changes from "ACT P" to "STOP P" according to wiper operation.

② Without CONSULT-II  
GO TO 2.

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-28, "Removal and Installation of 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   |

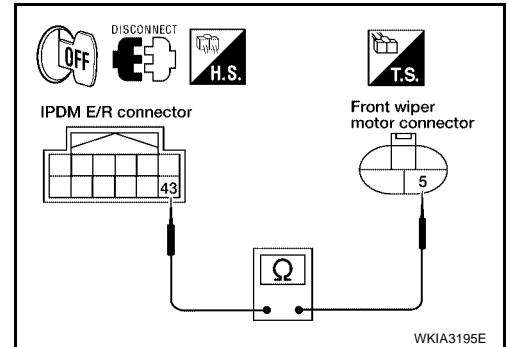
SKIA5301E

# FRONT WIPER AND WASHER SYSTEM

## 2. IPDM E/R TO FRONT WIPER MOTOR CONTINUITY INSPECTION

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 E122 terminal 43 and front wiper motor harness connector E23 terminal 5.

| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E122      | 43       | E23               | 5        | Yes        |

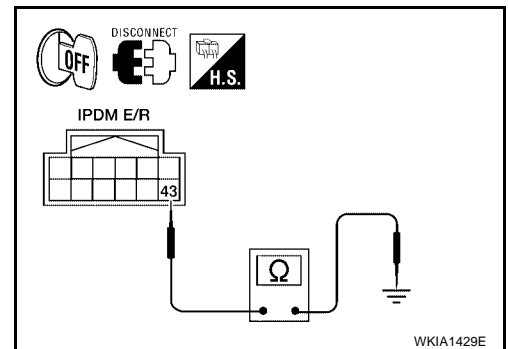


4. Check continuity between IPDM E/R harness connector E122 terminal 43 and ground.

| IPDM E/R  |          |        | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| E122      | 43       | Ground | No         |

### OK or NG

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



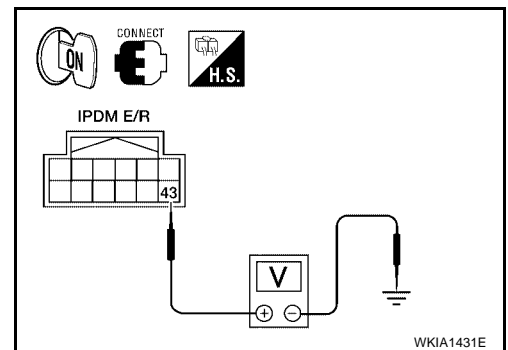
## 3. IPDM E/R TO FRONT WIPER MOTOR GROUND CONTINUITY INSPECTION

While front wiper motor is stopped and while operating, measure voltage between IPDM E/R harness connector E122 terminal 43 and ground.

| IPDM E/R      |    | (-)    | Condition       | Voltage<br>(Approx.) |
|---------------|----|--------|-----------------|----------------------|
| (+) Connector |    |        |                 |                      |
| Terminal      |    |        |                 |                      |
| E122          | 43 | Ground | Wiper operating | Battery<br>voltage   |
|               |    |        | Wiper stopped   | 0V                   |

### OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-28, "Removal and Installation of IPDM E/R"](#) .  
 NG >> Replace front wiper motor. Refer to [WW-30, "Removal and Installation of Wiper Motor and Linkage"](#) .



## FRONT WIPER AND WASHER SYSTEM

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

EKS00DET

#### REMOVAL

1. Operate the wiper motor and stop it at the auto stop position.
2. Remove the wiper arm mounting covers.
3. Remove the wiper arm mounting nuts, then remove the wiper arms.

#### INSTALLATION

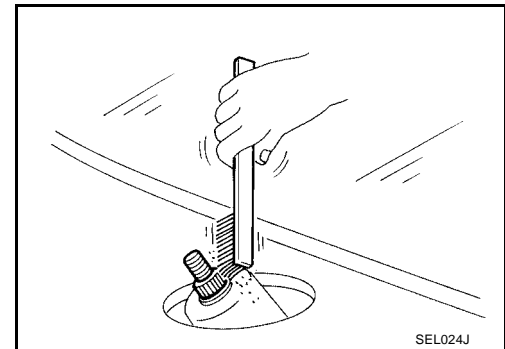
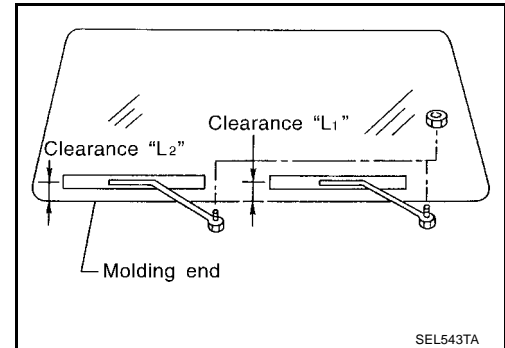
1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (auto stop).
2. Lift the blade up and then set it down onto glass surface to set the blade center to clearance "L1" and "L2" immediately before tightening nut.
3. Eject washer fluid. Turn on wiper switch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

**Clearance "L1" : 24.5 - 39.5 mm (0.965 - 1.555 in)**

**Clearance "L2" : 23.5 - 38.5 mm (0.925 - 1.516 in)**

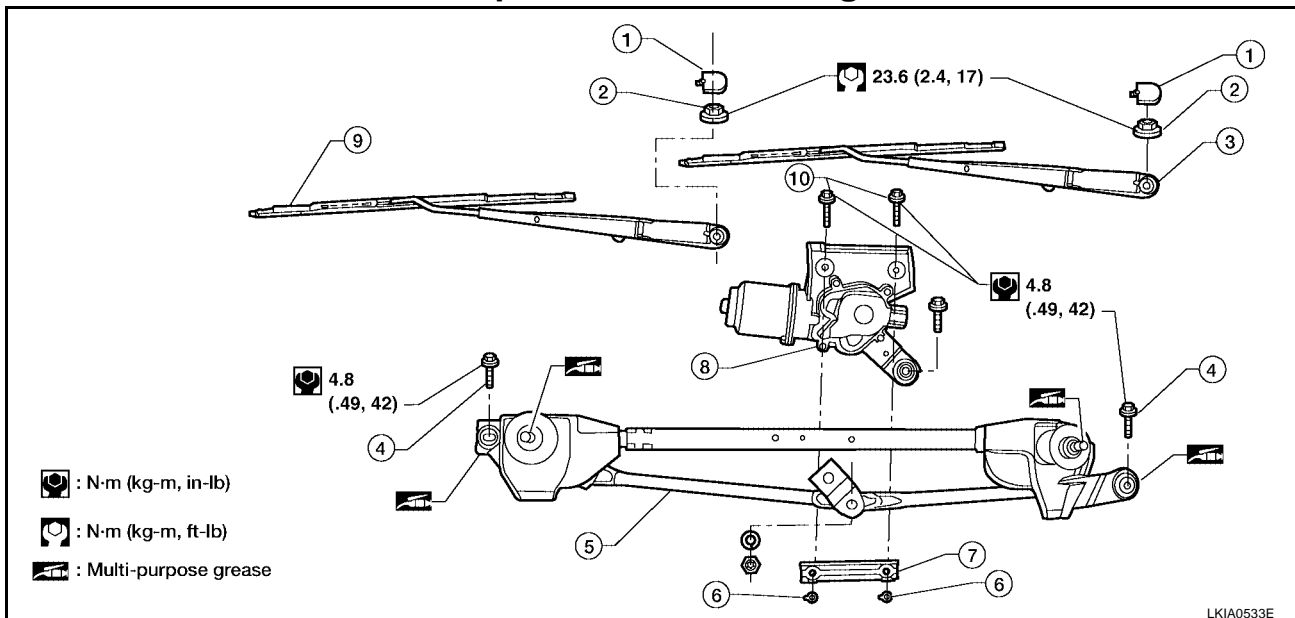
- Before reinstalling wiper arm, clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.
- Tighten wiper arm nuts to specified torque.

**Front wiper arm nuts : 23.6 N·m 2.4 kg·m, 17 ft·lb**



### Removal and Installation of Wiper Motor and Linkage

EKS00DEU

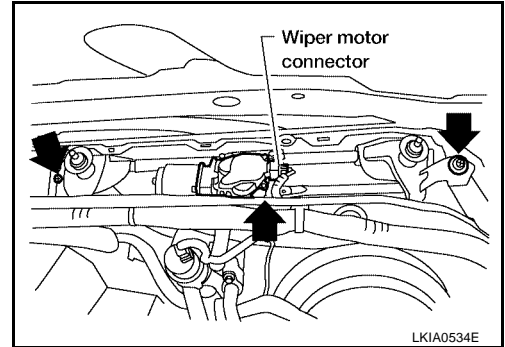


- |   |                            |  |
|---|----------------------------|--|
| 1. Wiper arm mounting covers            | 2. Wiper arm mounting nuts | 3. Front LH wiper arm and blade assembly |
| 4. Wiper frame mounting bolts           | 5. Wiper frame assembly    | 6. Wiper motor to frame mounting nuts    |
| 7. Wiper motor mounting spacer          | 8. Wiper motor             | 9. Front RH wiper arm and blade assembly |
| 10. Wiper motor to frame mounting bolts |                            |  |

# FRONT WIPER AND WASHER SYSTEM

## REMOVAL

1. Turn the wiper switch ON to operate the wiper motor, then turn wiper switch OFF (auto stop).
2. Remove the cowl top. Refer to [EI-17, "COWL TOP"](#) .
3. Disconnect wiper motor connector.
4. Remove wiper frame assembly mounting bolts, and remove wiper frame assembly.
5. Remove wiper motor to linkage nut and washer from wiper motor pivot.
6. Remove wiper motor from wiper frame assembly.



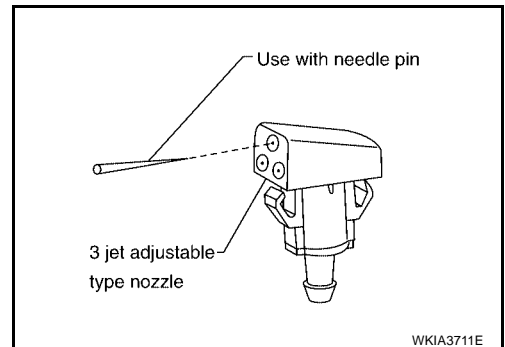
## INSTALLATION

### CAUTION:

- Do not drop the wiper motor or cause it to contact other parts.
  - Check the grease conditions of the motor arm and wiper link joint(s). Apply grease if necessary.
1. Connect wiper motor to connector. Turn the wiper switch ON to operate wiper motor, then turn the wiper switch OFF (auto stop).
  2. Disconnect wiper motor connector.
  3. Install link to wiper motor pivot with nut and washer.
  4. Install wiper motor to wiper frame assembly, and install assembly into the vehicle.
  5. Connect wiper motor connector. Turn the wiper switch ON to operate the wiper motor, then turn wiper switch OFF (auto stop).
  6. Install cowl top. Refer to [EI-17, "COWL TOP"](#) .

## Washer Nozzle Adjustment

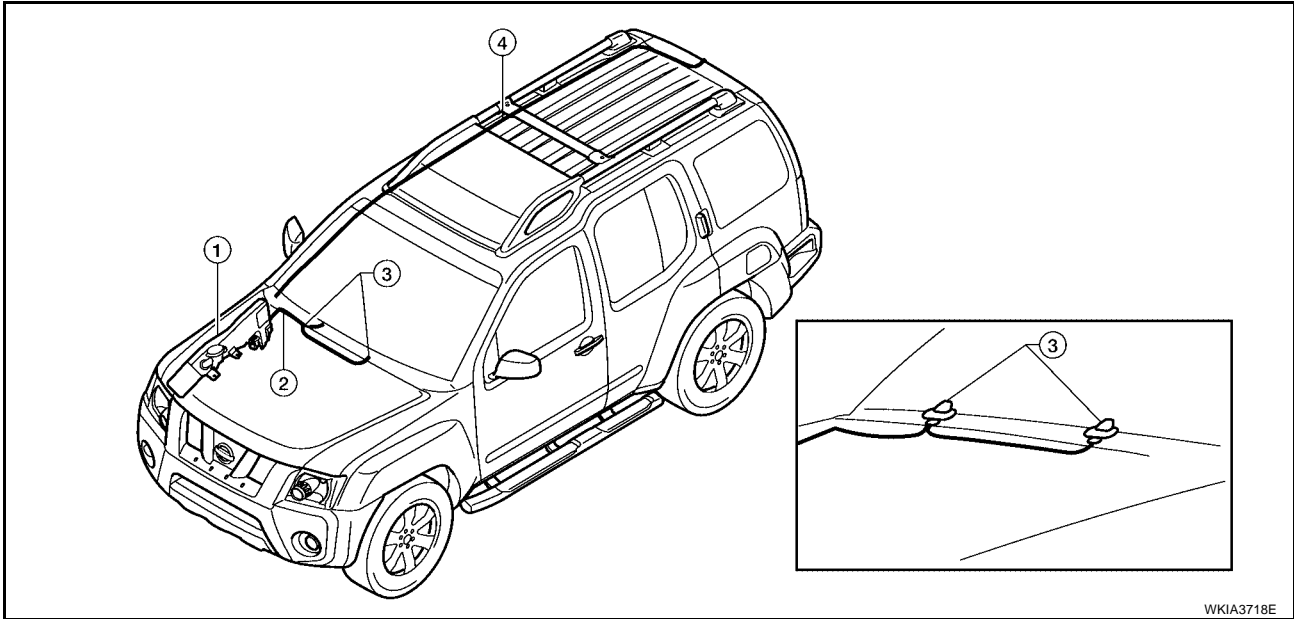
- This vehicle is equipped with adjustable washer nozzles.
- If not satisfied with washer fluid spray coverage, confirm that the washer nozzle is installed correctly.
- If the washer nozzle is installed correctly, and the washer fluid spray coverage is not satisfactory, re-aim washer nozzle.



# FRONT WIPER AND WASHER SYSTEM

## Washer Hose Layout

EKS00DEW



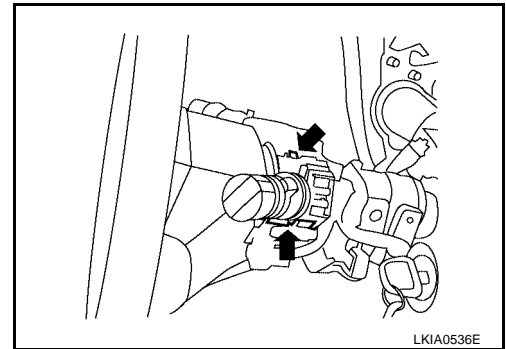
1. Washer fluid reservoir
2. Front washer hose
3. Washer nozzle
4. Rear washer hose

## Removal and Installation of Wiper and Washer Switch

EKS00DEX

### REMOVAL

1. Remove steering column covers.
2. Remove wiper and washer switch connector.
3. Pinch tabs at wiper and washer switch base, then slide switch away from steering column to remove.



### INSTALLATION

Installation is in the reverse order of removal.

## Removal and Installation of Washer Fluid Reservoir

EKS00DEY

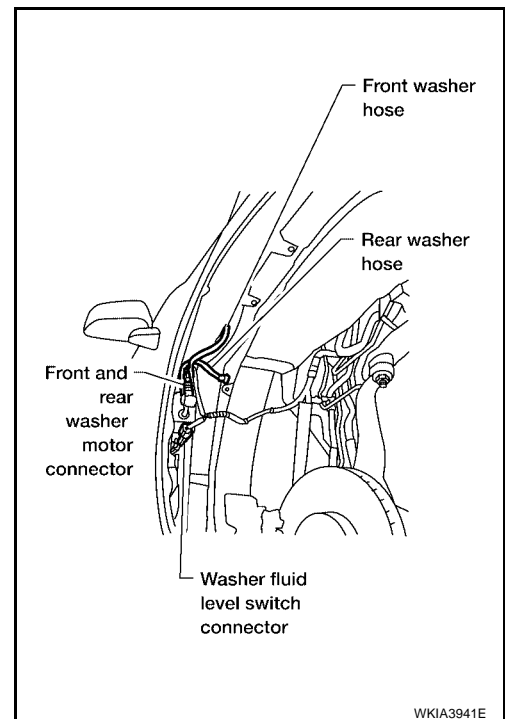
### REMOVAL

1. Remove front fender protector RH. Refer to [EI-20, "Removal and Installation of Front Fender Protector"](#) .

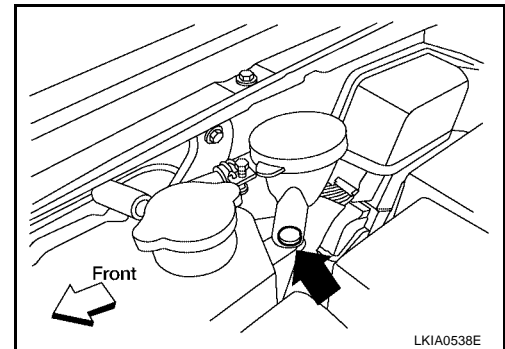


## FRONT WIPER AND WASHER SYSTEM

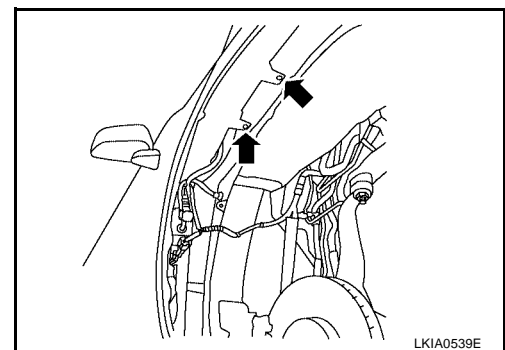
2. Remove front and rear washer hoses from washer motor; allow washer fluid to drain.
3. Disconnect front and rear washer motor and washer fluid level switch connectors.



4. Remove clip, then remove filler neck from washer fluid reservoir.



5. Remove washer fluid reservoir screws and remove from vehicle.



### INSTALLATION

#### CAUTION:

After installation, add water up to the upper level of the washer fluid reservoir filler neck, and check for water leaks.

Installation is in the reverse order of removal.

Washer fluid reservoir screws : 5.5 N·m (0.56 kg-m, 49 in-lb)

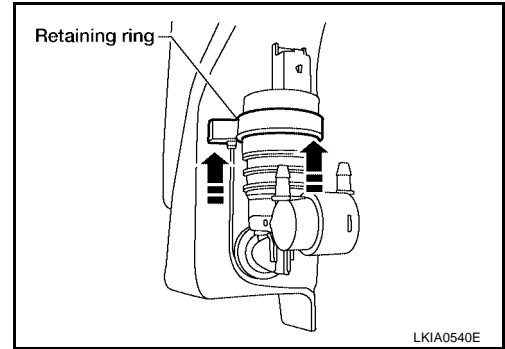
### Removal and Installation of Front and Rear Washer Motor REMOVAL

EKS00DEZ

1. Remove washer tank. Refer to [WW-32, "Removal and Installation of Washer Fluid Reservoir"](#).

## FRONT WIPER AND WASHER SYSTEM

2. Slide retaining ring upward to release front and rear washer motor.
3. Pull out the front and rear washer motor and remove from the washer tank.



### INSTALLATION

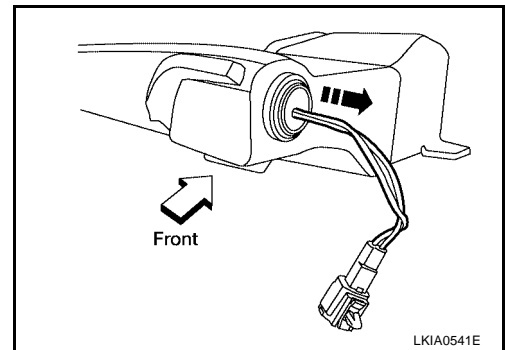
Installation is in the reverse order of removal.

### Removal and Installation of Washer Fluid Level Switch

EKS00DF0

#### REMOVAL

1. Remove washer tank. Refer to [WW-32, "Removal and Installation of Washer Fluid Reservoir"](#).
2. Pull washer fluid level switch out of washer fluid reservoir in the direction of the arrow as shown.



### INSTALLATION

Installation is in the reverse order of removal.

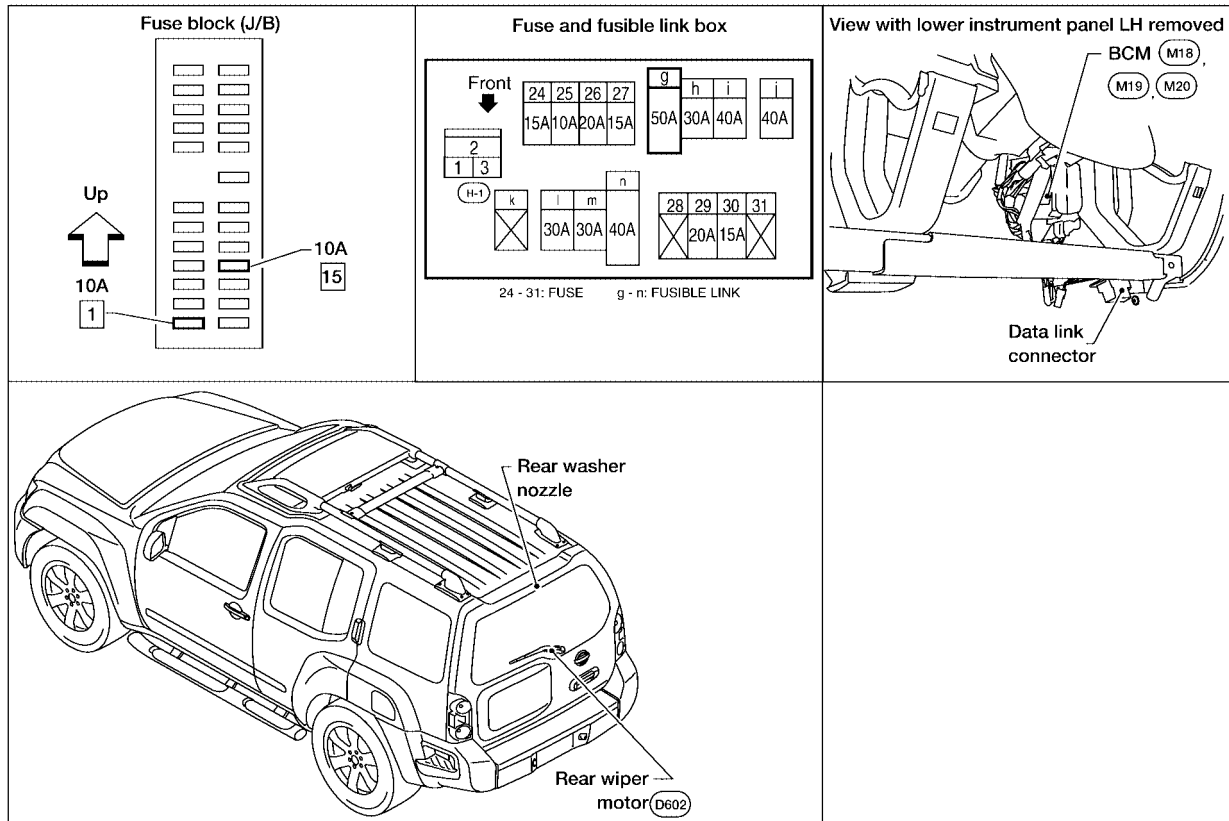
# REAR WIPER AND WASHER SYSTEM

## REAR WIPER AND WASHER SYSTEM

PFP:28710

### Components Parts and Harness Connector Location

EKS00DF1



WKIA3720E

### System Description

EKS00DF2

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

Power is supplied at all times

- through 50A fusible link (letter **g**, located in fuse and fusible link box)
- to BCM terminal 70.

With the ignition switch in ON or START position, power is supplied

- through 10A fuse [No. 15, located in the fuse block (J/B)]
- to combination switch terminal 2, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67 and
- to combination switch terminal 9
- through grounds M57, M61 and M79.

### REAR WIPER OPERATION

When the ignition switch is in the ON or START position, and the rear wiper switch is in the ON position, the BCM detects a rear wiper ON request through the combination switch (wiper switch) reading function. The BCM will control the rear wiper motor as follows.

Power is supplied

- through BCM terminal 55
- to rear wiper motor terminal 4.

# REAR WIPER AND WASHER SYSTEM

---

Ground is supplied

- to rear wiper motor terminal 1
- through grounds D406 and D652.

With power and ground supplied, the rear wiper motor operates.

## INTERMITTENT OPERATION

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

When the wiper switch is in the rear wiper INT position, the BCM detects a rear wiper INT request through the combination switch (wiper switch) reading function.

When BCM operates rear wiper motor, power is supplied

- through BCM terminal 55
- to rear wiper motor terminal 4.

Ground is supplied

- to rear wiper motor terminal 1
- through grounds D406 and D652.

With power and ground supplied, the rear wiper operates in intermittent mode.

## AUTO STOP OPERATION

When the rear wiper arm is not located at the base of the rear window, and the rear wiper switch is turned OFF, the rear wiper motor will continue to operate until the rear wiper arm is at the base of the rear window.

When the rear wiper arm reaches the base, rear wiper motor terminals 2 and 1 are connected.

Ground is supplied

- to BCM terminal 44
- through rear wiper motor terminal 2
- through rear wiper motor terminal 1
- through grounds D406 and D652.

## REAR WASHER OPERATION

When the ignition switch is in the ON or START position, and the front and rear washer switches are OFF, the front and rear washer motor is supplied power

- through 10A fuse [No. 15, located in the fuse block (J/B)]
- through combination switch (wiper switch) terminal 2
- through combination switch (wiper switch) terminal 3
- to front and rear washer motor terminal 2.

When the rear wiper switch is in rear washer position, the BCM detects a rear washer signal by BCM wiper switch reading function. Combination switch ground is supplied

- to front and rear washer motor terminal 1
- through combination switch (wiper switch) terminal 4
- through combination switch (wiper switch) terminal 9
- through grounds M57, M61 and M79.

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

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

When the BCM detects that the rear washer switch is in OFF, the rear wiper motor cycles approximately 3 times and then stops.

If the rear washer is operated with the rear wiper switch in the INT position, normal rear wiper operation will take over. Once the rear washer switch is released the rear wiper will return to INT operation.

## BCM WIPER SWITCH READING FUNCTION

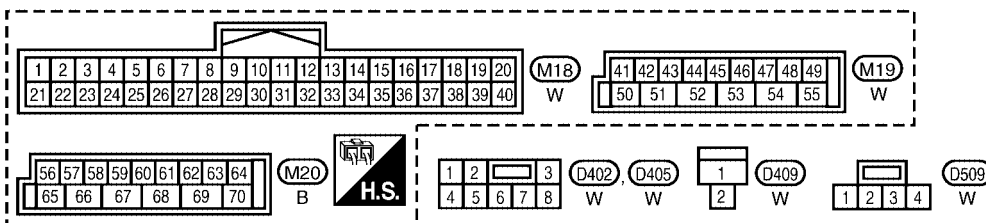
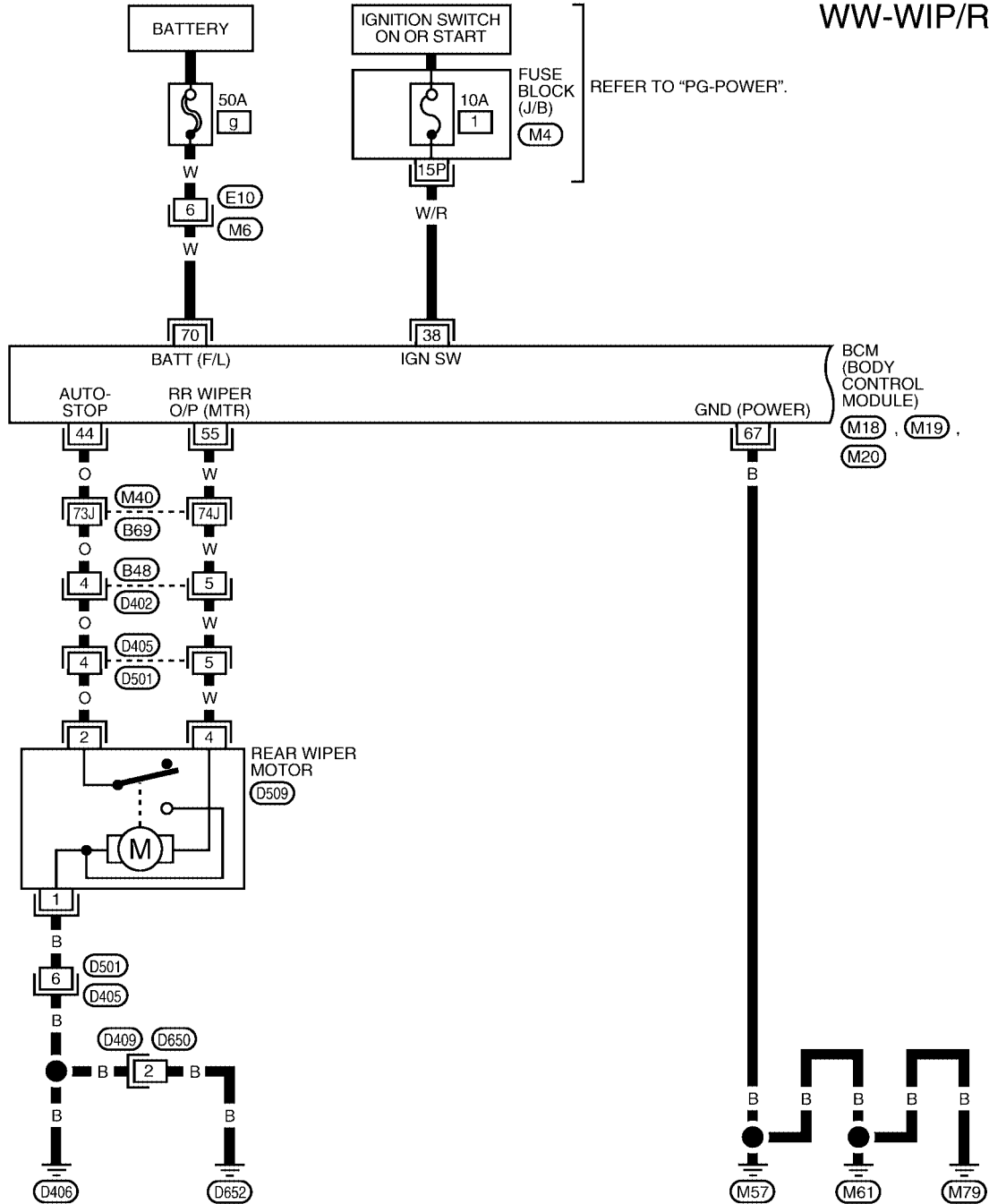
Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

# REAR WIPER AND WASHER SYSTEM

## Wiring Diagram — WIP/R —

EKS00DF3

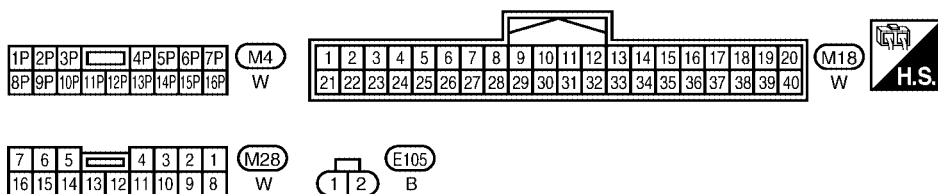
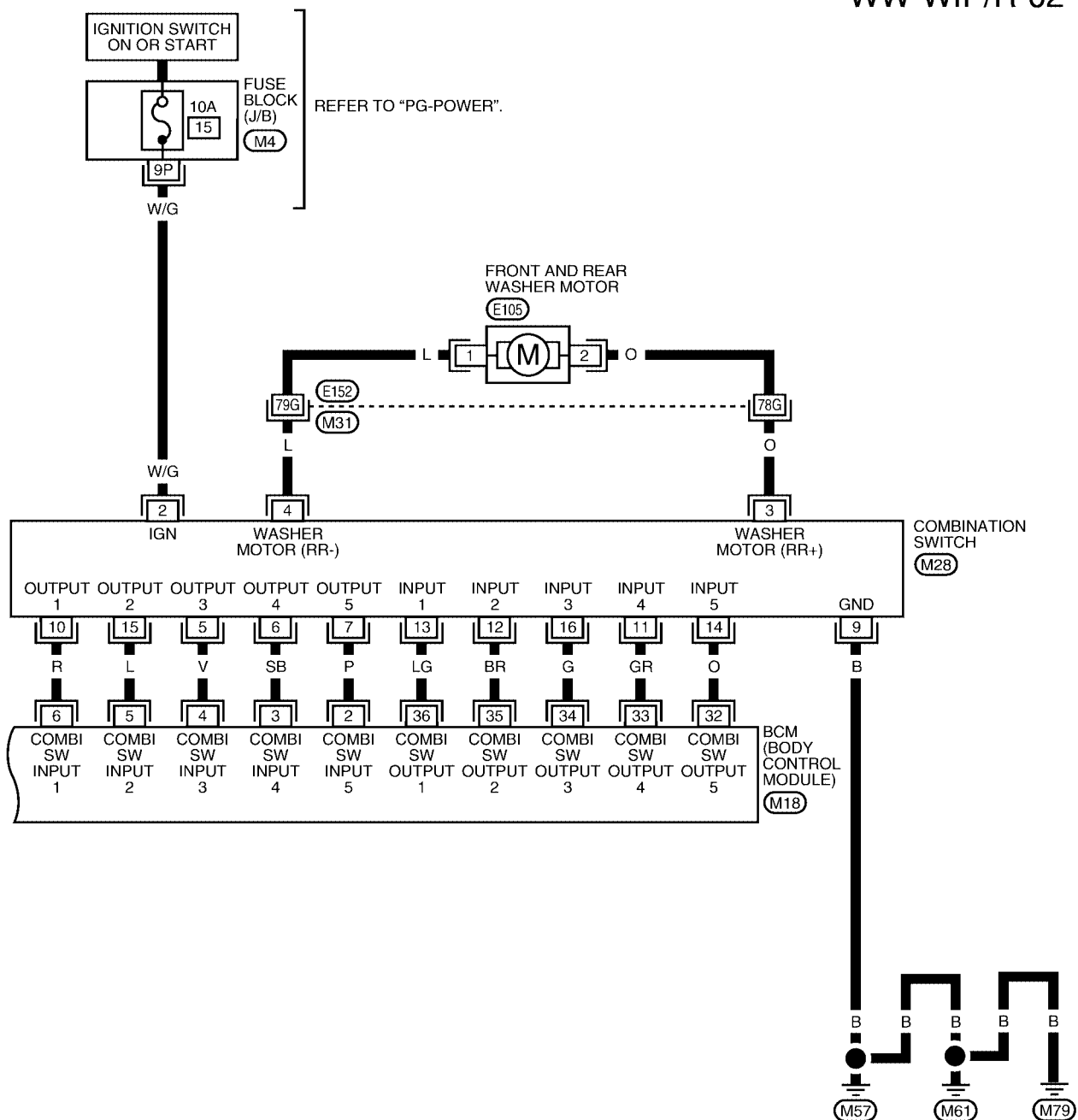
WW-WIP/R-01



REFER TO THE FOLLOWING.  
 (M40) - SUPER MULTIPLE JUNCTION (SMJ)

WKWA2467E

WW-WIP/R-02



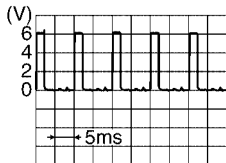
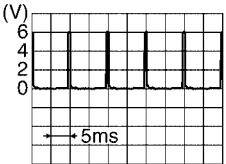

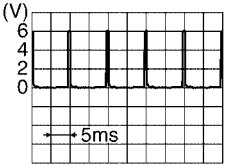

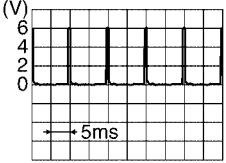
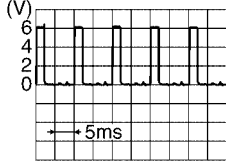
| REFER TO THE FOLLOWING.

**(M31) - SUPER MULTIPLE JUNCTION (SMJ)**

# REAR WIPER AND WASHER SYSTEM

## Terminals and Reference Values for BCM

EKS00DF4

| Terminal No. | Wire color | Signal name                 | Measuring condition |  | Reference Value (V)<br>(Approx.)   |
|--------------|------------|-----------------------------|---------------------|--|--|
|              |            |                             | Ignition switch     | Operation or condition   |  |
| 2            | P          | Combination switch input 5  | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5291E</p>   |
| 3            | SB         | Combination switch input 4  | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5292E</p>   |
| 4            | V          | Combination switch input 3  | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5291E</p>   |
| 5            | L          | Combination switch input 2  | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5292E</p> |
| 6            | R          | Combination switch input 1  |                     |  |  |
| 32           | O          | Combination switch output 5 | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5291E</p> |
| 33           | GR         | Combination switch output 4 | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5292E</p> |
| 34           | G          | Combination switch output 3 | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  <p>SKIA5291E</p> |

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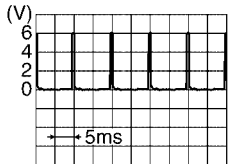
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M

# REAR WIPER AND WASHER SYSTEM

| Terminal No. | Wire color | Signal name                    | Measuring condition |  | Reference Value (V)<br>(Approx.)  |
|--------------|------------|--------------------------------|---------------------|--|---|
|              |            |                                | Ignition switch     | Operation or condition   |   |
| 35           | BR         | Combination switch output 2    | ON                  | <ul style="list-style-type: none"> <li>Light switch and wiper switch OFF</li> <li>Wiper dial position 4</li> </ul> |  |
| 36           | LG         | Combination switch output 1    |                     |  |   |
| 38           | W/R        | Ignition switch (ON)           | ON                  | —  | Battery voltage   |
| 44           | O          | Rear wiper auto stop signal    | ON                  | Rear wiper operating   | 0   |
|              |            |                                |                     | Rear wiper stopped   | Battery voltage   |
| 55           | W          | Rear wiper motor output signal | ON                  | Rear wiper switch OFF  | 0   |
|              |            |                                |                     | Rear wiper switch ON   | Battery voltage   |
| 67           | B          | Ground                         | ON                  | —  | 0   |
| 70           | W          | Battery power                  | OFF                 | —  | Battery voltage   |

## How to Proceed With Trouble Diagnosis

EKS00DF5

1. Confirm the symptoms and customer complaint.
2. Understand operation description and function description. Refer to [WW-35, "System Description"](#) .
3. Perform the Preliminary Check. Refer to [WW-40, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the rear wiper operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

## Preliminary Check

EKS00DF6

### INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

Inspection procedure

#### 1. CHECK FUSE

Check if wiper or washer fuse is blown.

| Unit                        | Power source         | Fuse No. |
|-----------------------------|----------------------|----------|
| Front and rear washer motor | Ignition ON or START | 15       |
| BCM                         | Ignition ON or START | 1        |
|                             | Battery              | g        |

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of blown fuse before installing new fuse. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .



# REAR WIPER AND WASHER SYSTEM

## 2. CHECK POWER SUPPLY CIRCUIT

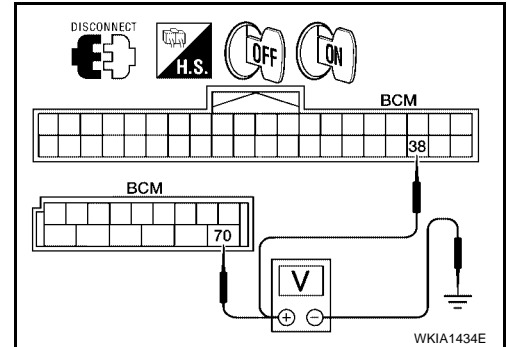
1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector terminals and ground.

| BCM           |    | (-)    | Ignition switch position |                 |
|---------------|----|--------|--------------------------|-----------------|
| (+) Connector |    |        | OFF                      | ON              |
| Terminal      |    | Ground |                          |                 |
| M18           | 38 |        | 0V                       | Battery voltage |
| M20           | 70 |        | Battery voltage          | Battery voltage |

OK or NG

OK >> GO TO 3.

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



## 3. GROUND CIRCUIT INSPECTION (BCM)

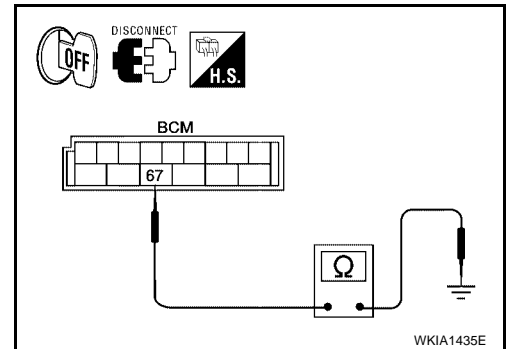
Check for continuity between the BCM terminal and ground.

| BCM       |          |        | Ignition switch condition | Continuity |
|-----------|----------|--------|---------------------------|------------|
| Connector | Terminal |        |                           |            |
| M20       | 67       | Ground | OFF                       | Yes        |

OK or NG

OK >> Inspection End.

NG >> Repair/replace BCM ground circuit.



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# REAR WIPER AND WASHER SYSTEM

## CONSULT-II Function (BCM)

EKS00DF7

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

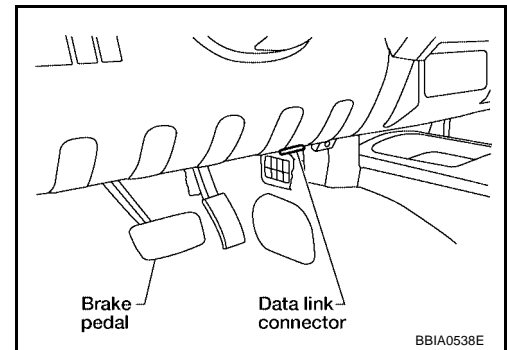
| BCM diagnostic test item | Diagnostic mode       | Description  |
|--------------------------|-----------------------|--|
| Inspection by part       | WORK SUPPORT          | Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed. |
|                          | DATA MONITOR          | Displays BCM input/output data in real time.   |
|                          | ACTIVE TEST           | Operation of electrical loads can be checked by sending drive signal to them.  |
|                          | SELF-DIAG RESULTS     | Displays BCM self-diagnosis results.   |
|                          | CAN DIAG SUPPORT MNTR | The result of transmit/receive diagnosis of CAN communication can be read.   |
|                          | ECU PART NUMBER       | BCM part number can be read.   |
|                          | CONFIGURATION         | Performs BCM configuration read/write functions.   |

## CONSULT-II OPERATION

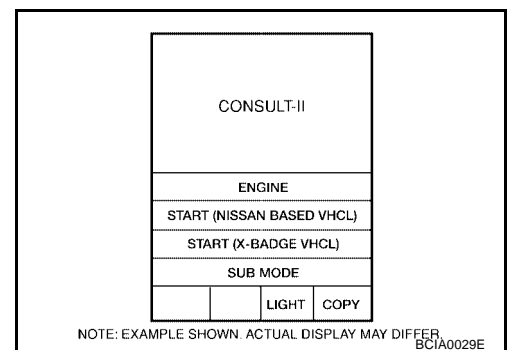
### CAUTION:

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

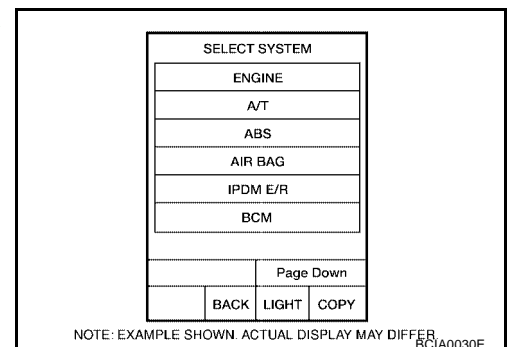
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



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



3. Touch "BCM" on the "SELECT SYSTEM" screen.  
If "BCM" is not indicated, go to [GI-38, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



## REAR WIPER AND WASHER SYSTEM

- Select the desired part to be diagnosed on the "SELECT TEST ITEM" screen.

| SELECT TEST ITEM |       |           |  |
|------------------|-------|-----------|--|
| HEAD LAMP        |       |           |  |
| WIPER            |       |           |  |
| FLASHER          |       |           |  |
| AIR CONDITIONER  |       |           |  |
| COMB SW          |       |           |  |
| BCM              |       |           |  |
| Scroll Up        |       | Page Down |  |
| BACK             | LIGHT | COPY      |  |

LKIA0183E

### DATA MONITOR

#### Operation Procedure

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

|                     |  |
|---------------------|--|
| ALL SIGNALS         | Monitors all the items.                            |
| SELECTION FROM MENU | Selects and monitors the individual item selected. |

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

#### Display Item List

| Monitor item name<br>"OPERATION OR UNIT" | Contents   |
|--|--|
| IGN ON SW "ON/OFF"                       | Displays "IGN Position (ON)/OFF, ACC Position (OFF)" status as judged from ignition switch signal. |
| IGN SW CAN "ON/OFF"                      | Displays "IGN Position (ON)/OFF, ACC Position (OFF)" status as judged from CAN communications.     |
| FR WIPER INT "ON/OFF"                    | Displays "Front Wiper INT (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 HI "ON/OFF"                     | Displays "Front Wiper HI (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.  |
| VEHICLE SPEED "0.0 km/h"                 | Displays vehicle speed as received over CAN communication.   |
| FR WIPER STOP "ON/OFF"                   | Displays "Stopped (ON)/Operating (OFF)" status as judged from the auto-stop signal.                |
| RR WIPER INT "ON/OFF"                    | Displays "Rear Wiper INT (ON)/Other (OFF)" status as judged from wiper switch signal.              |
| RR WIPER ON "ON/OFF"                     | Displays "Rear Wiper (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 "Stopped (OFF)/Operating (ON)" status as judged from the auto stop switch 1.              |
| RR AUTO STP 2 "ON/OFF"                   | Displays "Stopped (OFF)/Operating (ON)" status as judged from the auto stop switch 2.              |

### ACTIVE TEST

#### Operation Procedure

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

# REAR WIPER AND WASHER SYSTEM

## Display Item List

| Test item              | Display on CONSULT-II screen | Description  |
|------------------------|------------------------------|--|
| Front wiper HI output  | FR WIPER (HI)                | Front wiper HI can be operated by any ON-OFF operation.  |
| Front wiper LO output  | FR WIPER (LO)                | Front wiper LO can be operated by any ON-OFF operation.  |
| Front wiper INT output | FR WIPER (INT)               | Front wiper INT can be operated by any ON-OFF operation. |
| Rear wiper output      | RR WIPER                     | Rear wiper can be operated by any ON-OFF operation.      |

## Rear Wiper Does Not Operate

EKS00DF8

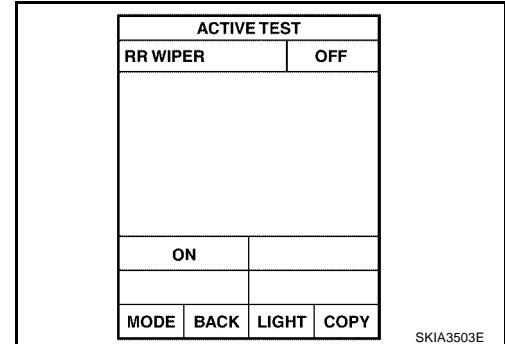
### 1. REAR WIPER ACTIVE TEST

1. Select "BCM" on CONSULT-II, and select "WIPER" on "SELECT TEST ITEM" screen.
2. Select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
3. Select "RR WIPER" on "SELECT TEST ITEM" screen.
4. Make sure rear wiper operates.

**Wiper should operate.**

OK or NG

- OK >> GO TO 6.  
NG >> GO TO 2.



SKIA3503E

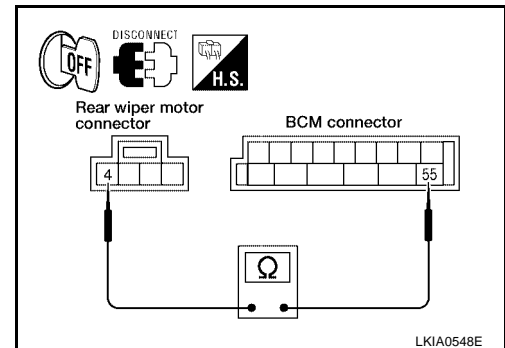
### 2. CHECK REAR WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector M19 terminal 55 and rear wiper motor harness connector D602 terminal 4.

**55 - 4 : Continuity should exist.**

OK or NO

- OK >> GO TO 3.  
NO >> Repair harness or connector.



LKIA0548E

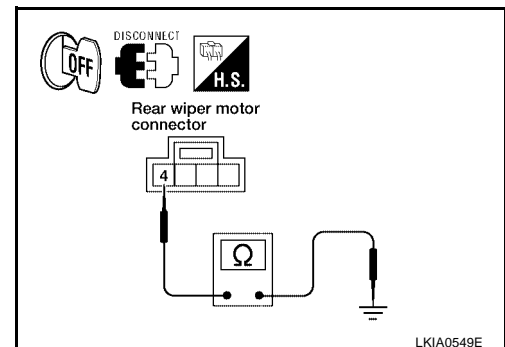
### 3. CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between rear wiper motor harness connector D602 terminal 4 and ground.

**4 - Ground : Continuity should not exist.**

OK or NG

- OK >> GO TO 4.  
NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it. After the battery cable is reconnected, the steering angle sensor neutral position must be reset on vehicles equipped with VDC. Refer to [BRC-142, "Adjustment of Steering Angle Sensor Neutral Position"](#).



LKIA0549E

# REAR WIPER AND WASHER SYSTEM

## 4. CHECK GROUND CIRCUIT

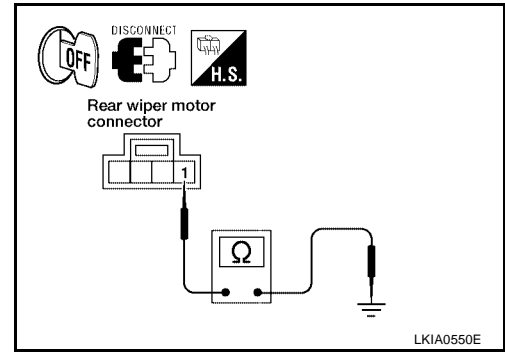
Check continuity between rear wiper motor harness connector D602 terminal 1 and ground.

**1 - Ground : Continuity should exist.**

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



## 5. CHECK REAR WIPER OPERATING

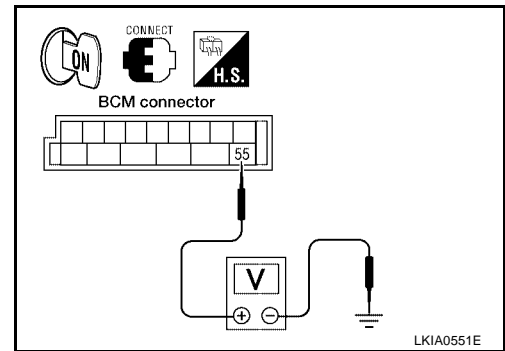
1. Connect BCM connector and rear wiper motor connector.
2. Select "RR WIPER" during "ACTIVE TEST". Refer to [WW-43, "ACTIVE TEST"](#). When rear wiper is operating, check voltage between BCM harness connector terminal and ground.

| BCM                    |    | (-)    | Condition    | Voltage<br>(Approx.) |
|------------------------|----|--------|--------------|----------------------|
| (+) Connector Terminal |    |        |              |                      |
| M19                    | 55 | Ground | Stopped      | 0V                   |
|                        |    |        | ON operation | Battery voltage      |

OK or NG

OK >> Replace rear wiper motor. Refer to [WW-50, "Removal and Installation of Rear Wiper Motor"](#).

NG >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).



## 6. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "RR WIPER INT", "RR WIPER ON" turn ON-OFF according to operation of wiper switch.

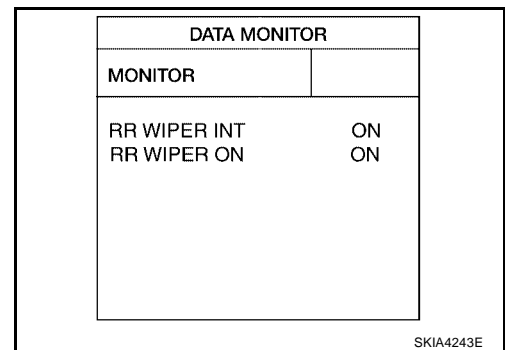
**When wiper switch is in INT position : RR WIPER INT ON**

**When wiper switch is in ON position : RR WIPER ON ON**

OK or NG

OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).

NG >> Check the wiper switch. Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#).



# REAR WIPER AND WASHER SYSTEM

EKS00DF9

## Rear Wiper Stop Position Is Incorrect

### 1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "RR WIPER STOP" turns ON-OFF according to wiper operation.

**When wiper switch is in OFF position : RR WIPER STOP OFF**

OK or NG

- OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).
- NG >> GO TO 2.

| DATA MONITOR  |     |
|---------------|-----|
| MONITOR       |     |
| RR WIPER STOP | OFF |

SKIA4244E

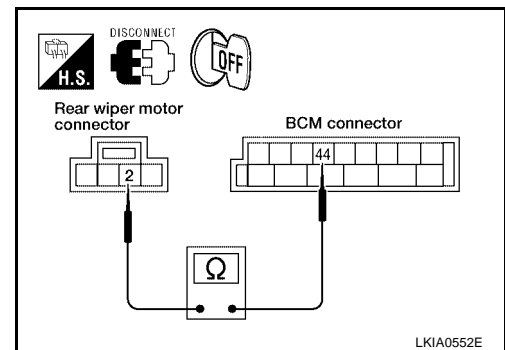
### 2. CHECK REAR WIPER MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rear wiper motor connector.
3. Check continuity between BCM harness connector M19 terminal 44 and rear wiper motor harness connector D602 terminal 2.

**44 - 2 : Continuity should exist.**

OK or NG

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



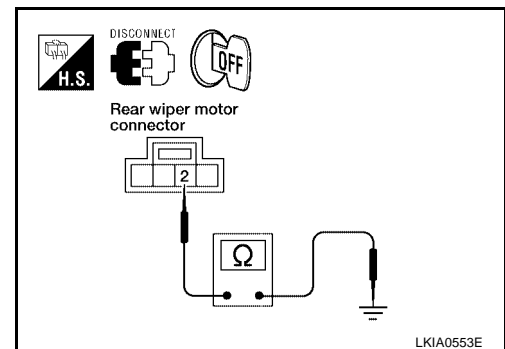
### 3. CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between rear wiper motor harness connector D602 terminal 2 and ground.

**2 - Ground : Continuity should not exist.**

OK or NG

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



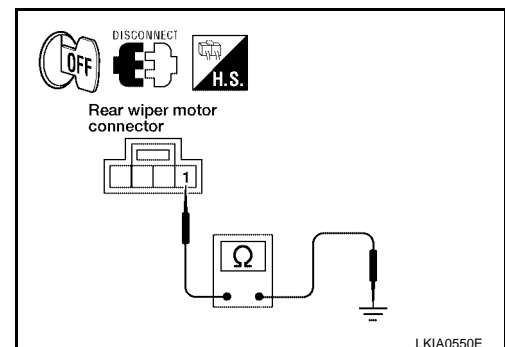
### 4. CHECK GROUND CIRCUIT

Check continuity between rear wiper motor harness connector D602 terminal 1 and ground.

**1 - Ground : Continuity should exist.**

OK or NG

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



# REAR WIPER AND WASHER SYSTEM

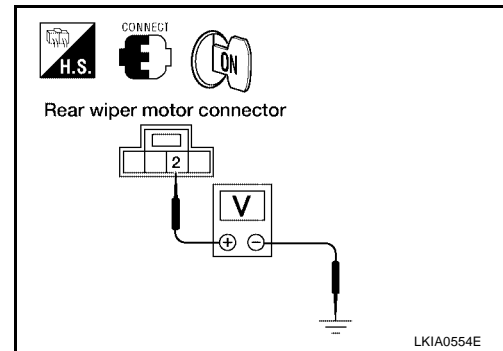
## 5. CHECK AUTO STOP SIGNAL

1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between rear wiper motor harness connector D602 terminal 2 and ground.

**2 - Ground : Battery voltage should exist.**

OK or NG

- OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).
- NG >> Replace rear wiper motor. Refer to [WW-50, "Removal and Installation of Rear Wiper Motor"](#).



### Only Rear Wiper Does Not Operate

#### 1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "RR WIPER ON" turns ON-OFF according to operation of wiper switch.

**When rear wiper switch is in : RR WIPER ON ON position**

OK or NG

- OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).
- NG >> Check the wiper switch. Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#).

| DATA MONITOR |    |
|--------------|----|
| MONITOR      |    |
| RR WIPER ON  | ON |

SKIA4248E

### Only Rear Wiper Intermittent Does Not Operate

#### 1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "RR WIPER INT" turns ON-OFF according to operation of wiper switch.

**When rear wiper switch is in : RR WIPER INT ON INT position**

OK or NG

- OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).
- NG >> Check the wiper switch. Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#).

| DATA MONITOR |    |
|--------------|----|
| MONITOR      |    |
| RR WIPER INT | ON |

SKIA4249E

### Wiper Does Not Wipe When Rear Washer Operates

#### 1. CHECK COMBINATION SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. With "WIPER" data monitor, make sure "RR WASHER SW" turns ON-OFF according to operation of rear washer switch.

**When rear wiper switch is in : RR WASHER SW ON WASHER position**

OK or NG

- OK >> Replace BCM. Refer to [BCS-19, "Removal and Installation of BCM"](#).
- NG >> Check the wiper switch. Refer to [WW-7, "COMBINATION SWITCH READING FUNCTION"](#).

| DATA MONITOR |    |
|--------------|----|
| MONITOR      |    |
| RR WASHER SW | ON |

SKIA4250E

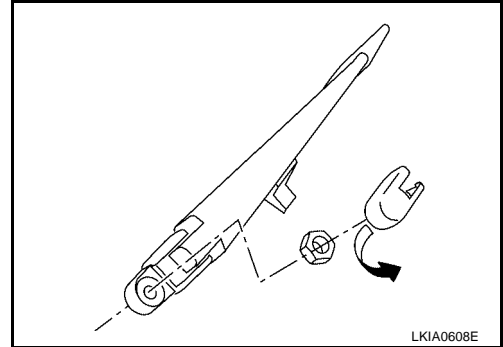
## REAR WIPER AND WASHER SYSTEM

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

EKS00DFD

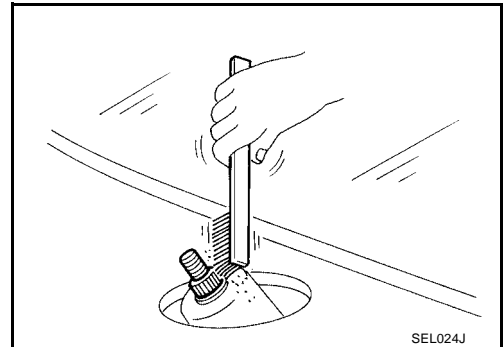
#### REMOVAL

1. Operate the rear wiper motor and stop it at the auto stop position.
2. Remove rear wiper arm cover by gripping bottom edge and rotating cover up. Remove mounting nut, and remove the wiper arm.



#### INSTALLATION

1. Prior to wiper arm installation, turn on wiper switch to operate wiper motor and then turn it "OFF" (auto stop).
2. Clean up the pivot area as illustrated. This will reduce the possibility of wiper arm looseness.

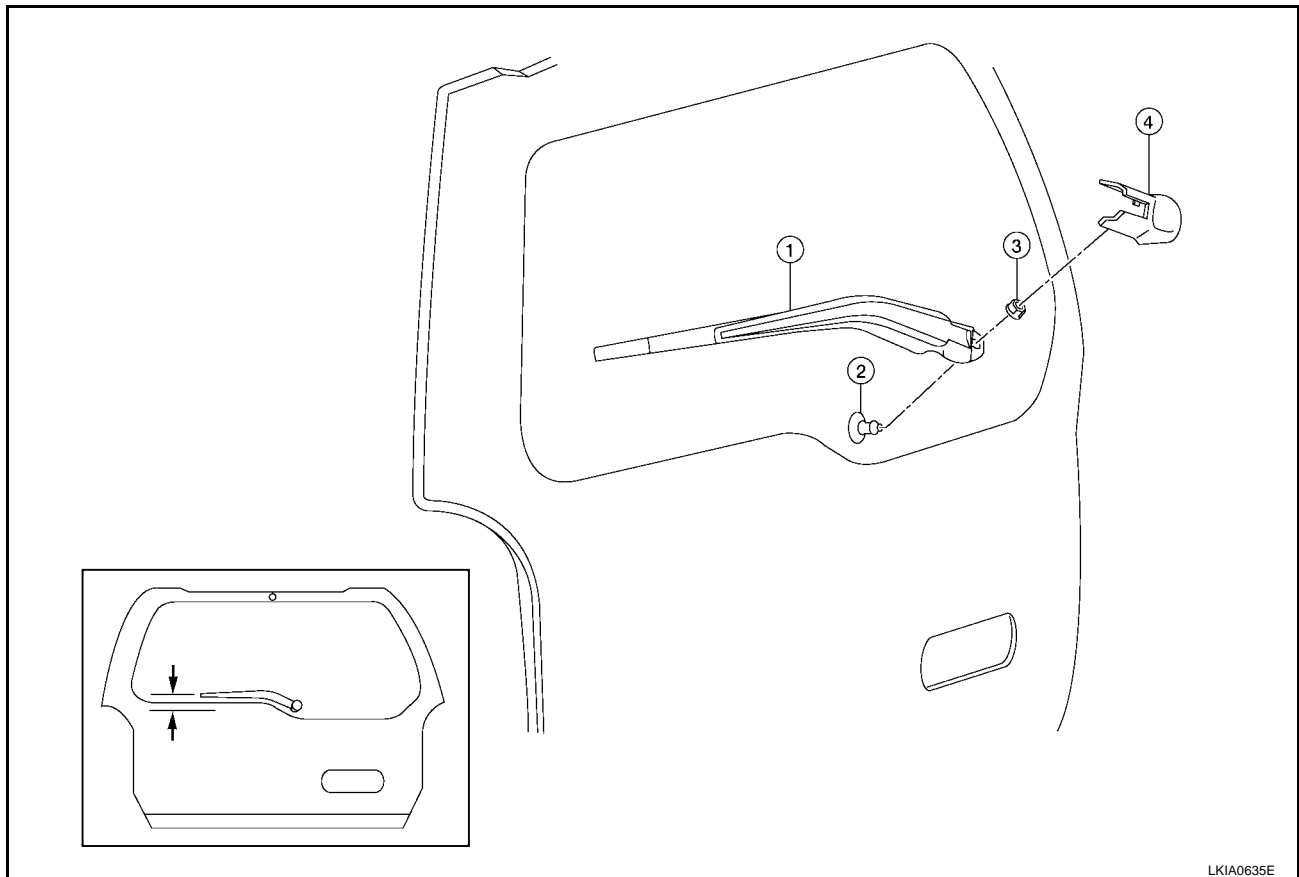


3. Install rear wiper arm and blade so that the blade is parallel with the lower edge of back glass as shown and tighten wiper arm nut to specification.

**Rear wiper arm nut : 5.4 N·m (0.55 kg-m, 48 in-lb)**



## REAR WIPER AND WASHER SYSTEM



1. Rear wiper arm and blade
2. Rear wiper motor pivot
3. Rear wiper arm mounting nut
4. Rear wiper arm cover

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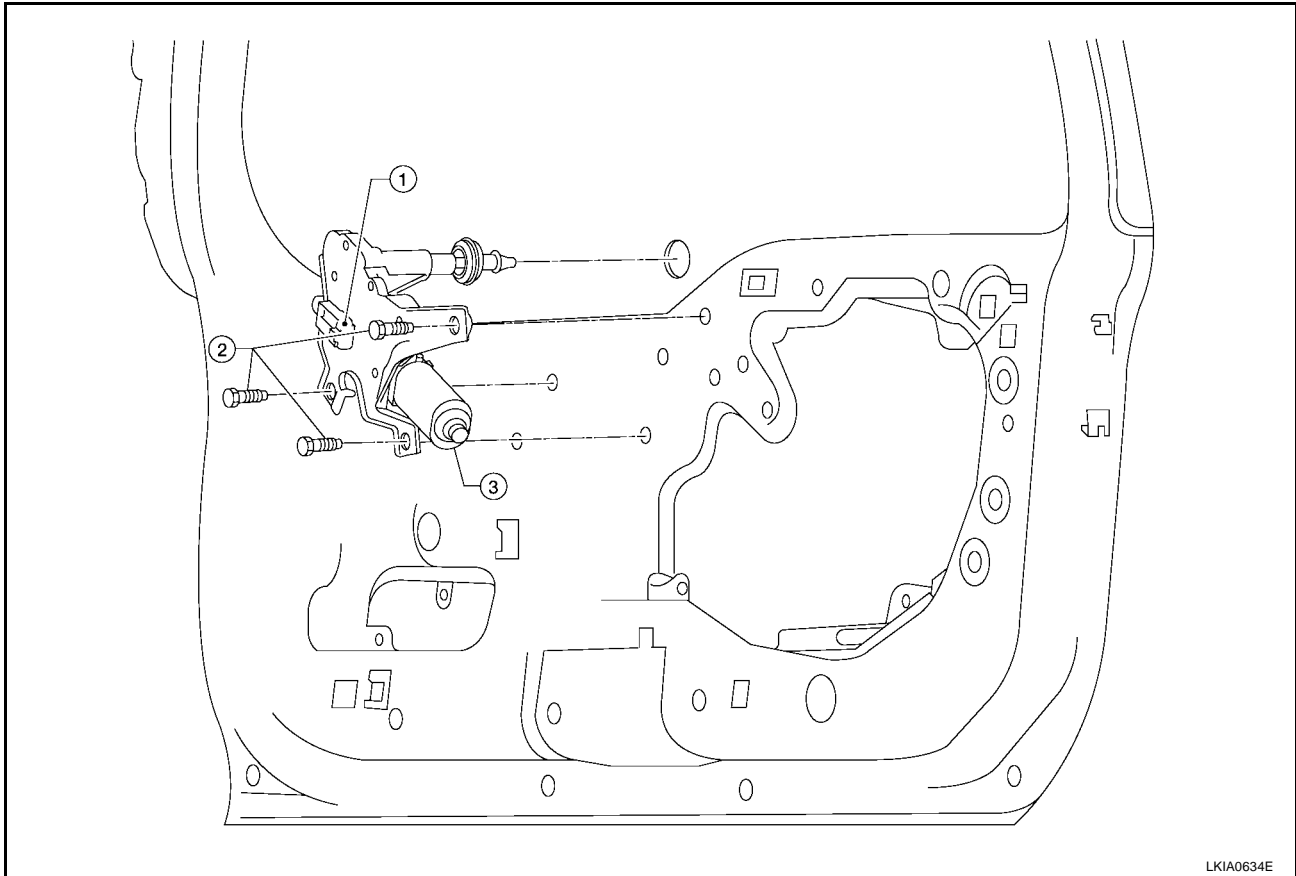
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# REAR WIPER AND WASHER SYSTEM

## Removal and Installation of Rear Wiper Motor

EKS00DFE



LKIA0634E

1. Rear wiper motor harness connector      2. Bolt      3. Rear wiper motor

### REMOVAL

1. Remove rear wiper arm and blade. Refer to [WW-48, "Removal and Installation of Rear Wiper Arm, Adjustment of Rear Wiper Arm Stop Location"](#).
2. Remove back door finisher. Refer to [EI-36, "BACK DOOR TRIM"](#).
3. Remove rear wiper motor cover.
4. Disconnect rear wiper motor harness connector.
5. Remove rear wiper motor bolts (3), and remove rear wiper motor from back door.

### INSTALLATION

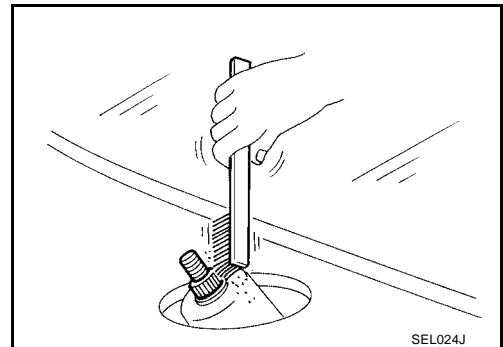
#### CAUTION:

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

1. Clean up the pivot area as illustrated. This will reduce possibility of wiper arm looseness.
2. Installation is in the reverse order of removal.

**Rear wiper motor bolts : 6.8 N·m (0.69 kg-m, 60 in-lb)**

3. Attach wiper arm and blade. Refer to [WW-48, "Removal and Installation of Rear Wiper Arm, Adjustment of Rear Wiper Arm Stop Location"](#).



SEL024J

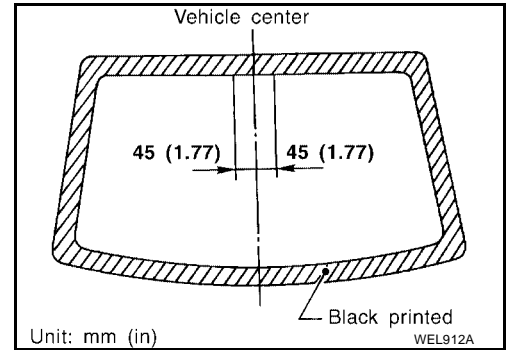
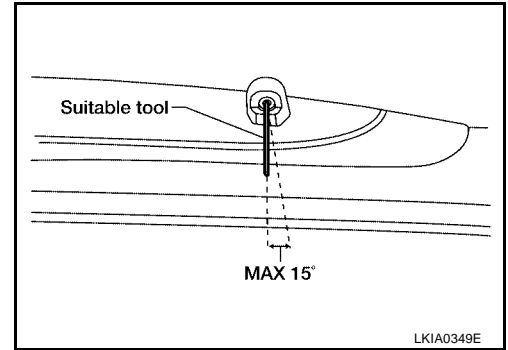
# REAR WIPER AND WASHER SYSTEM

## Rear Washer Nozzle Adjustment

EKS00DFF

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

**Adjustable range** :  $\pm 15^\circ$  (In any direction)



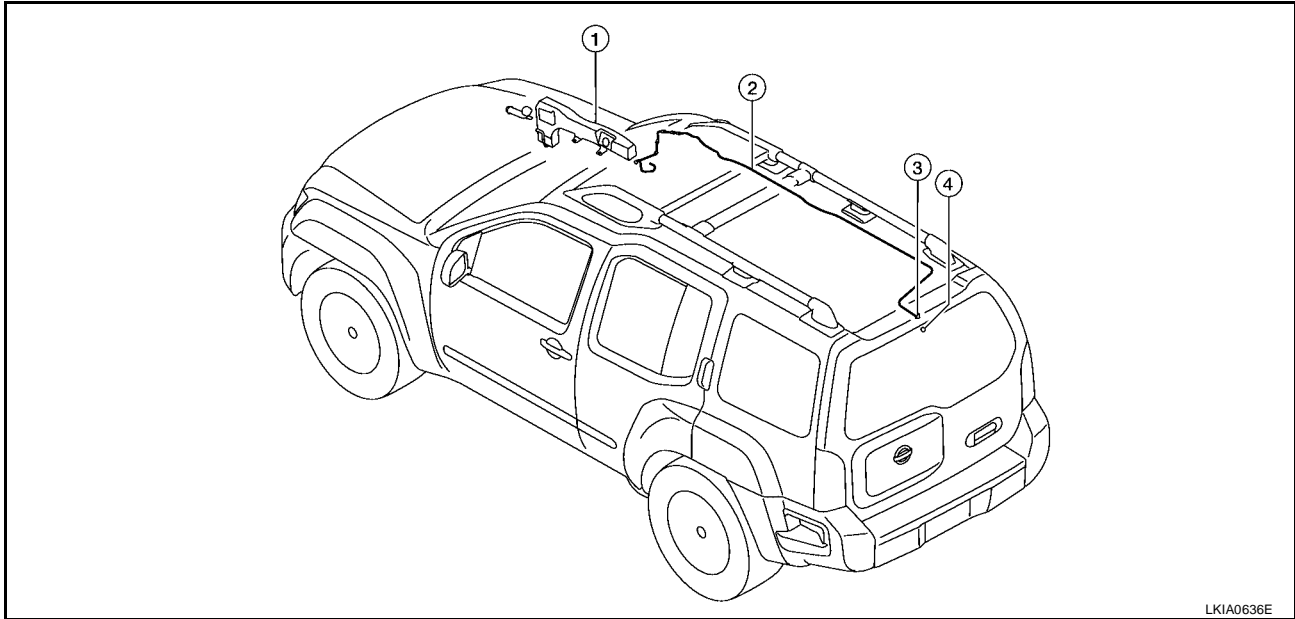
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# REAR WIPER AND WASHER SYSTEM

## Rear Washer Hose Layout

EKS00DFG



LKIA0636E

1. Washer fluid reservoir
2. Rear washer hose
3. Check valve
4. Rear washer nozzle

## Removal and Installation of Rear Washer Nozzle

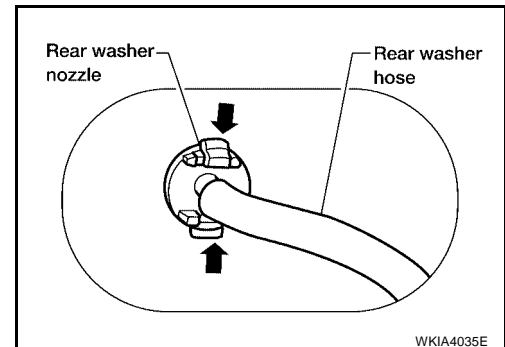
EKS00DFH

1. Remove back door finisher. Refer to [EI-36, "BACK DOOR TRIM"](#).
2. Disconnect rear washer hose from rear washer nozzle.
3. Release retaining clips and remove washer nozzle.

Installation is in the reverse order of removal.

### NOTE:

Inspect rear washer nozzle for proper spray pattern, adjust as necessary. Refer to [WW-51, "Rear Washer Nozzle Adjustment"](#).

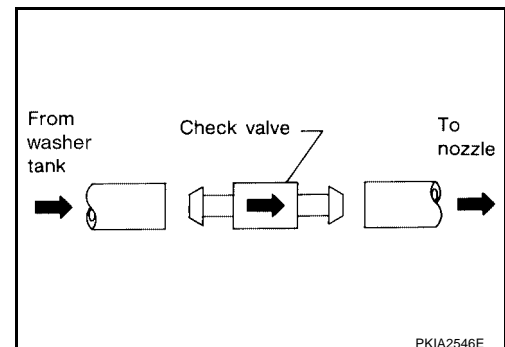


WKIA4035E

## Check Valve

EKS00DFI

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



PKIA2546E

## Removal and Installation of Wiper and Washer Switch

EKS00DFJ

Refer to [WW-32, "Removal and Installation of Wiper and Washer Switch"](#).

## Removal and Installation of Washer Fluid Reservoir

EKS00DFK

Refer to [WW-32, "Removal and Installation of Washer Fluid Reservoir"](#).

REAR WIPER AND WASHER SYSTEM

Removal and Installation of Front and Rear Washer Motor

EKS00DFL

Refer to [WW-33, "Removal and Installation of Front and Rear Washer Motor"](#) .

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# POWER SOCKET

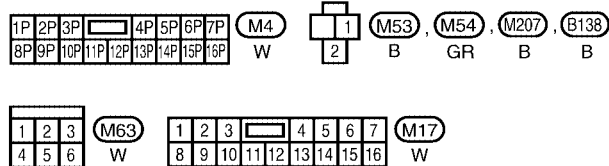
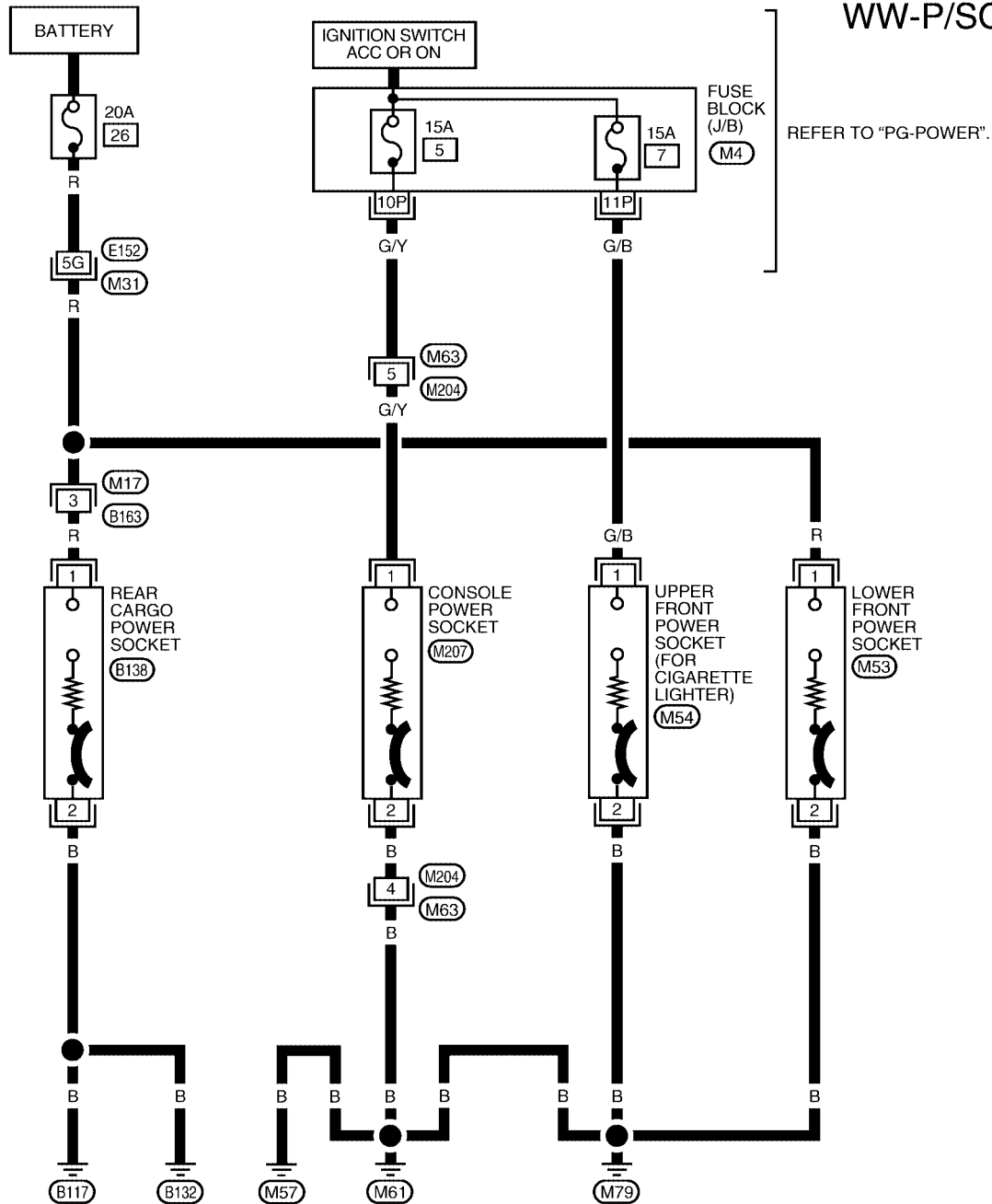
PFP:253A2

EKS00DFM

## POWER SOCKET

### Wiring Diagram — P/SCKT —

## WW-P/SCKT-01



REFER TO THE FOLLOWING.

(M31) - SUPER MULTIPLE JUNCTION (SMJ)

WKWA2469E

# POWER SOCKET

## Removal and Installation of Power Sockets

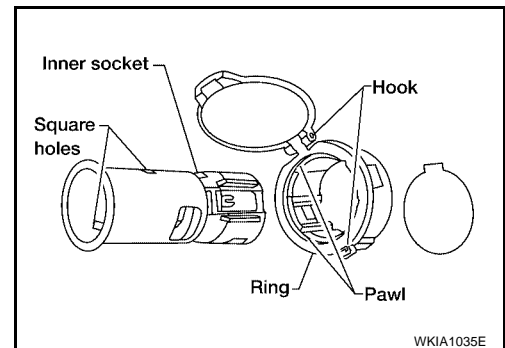
EKS00DFN

### NOTE:

Removal and installation is common for all power sockets.

### REMOVAL

1. Remove inner socket from the ring, while pressing the hook on the ring out from square hole.
2. Disconnect power socket connector.
3. Remove ring from power socket finisher while pressing pawls.



### INSTALLATION

Installation is in the reverse order of removal.

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# HORN

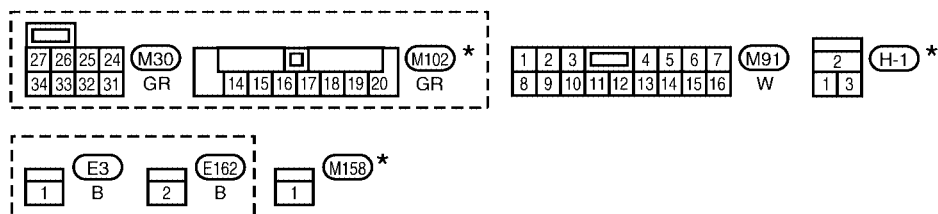
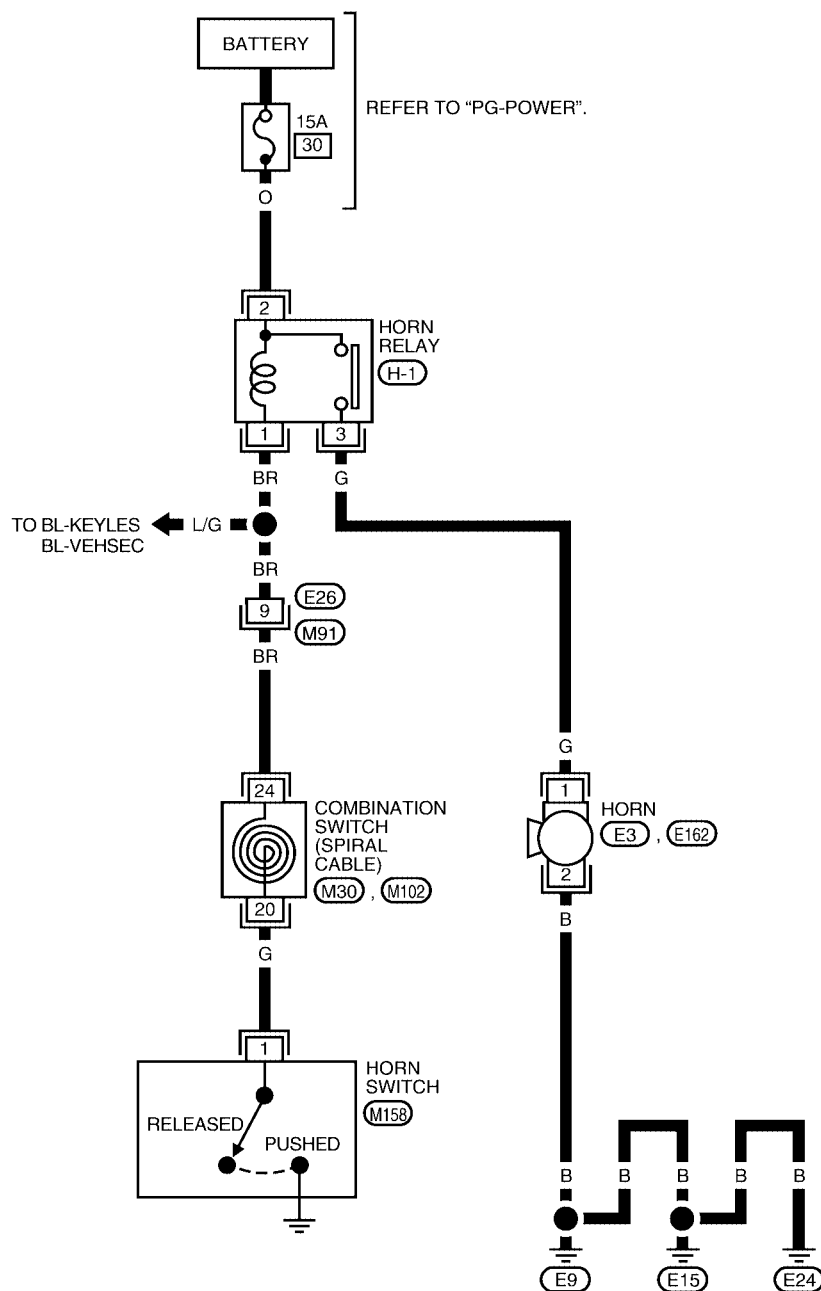
# HORN

PFP:25610

## Wiring Diagram — HORN —

EKS00DFO

WW-HORN-01



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

WKWA2470E



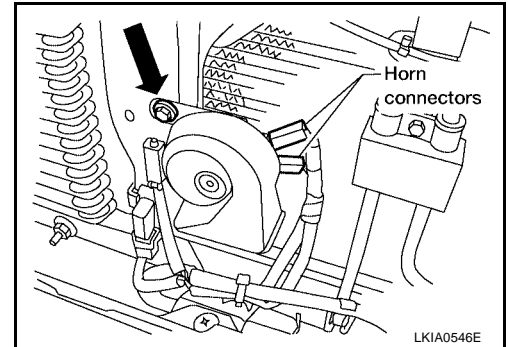
# HORN

EKS00DFP

## Removal and Installation of Horn

### REMOVAL

1. Remove the front grille. Refer to [EI-16, "Removal and Installation"](#) .
2. Disconnect horn connectors.
3. Remove horn bolt and remove horn from vehicle.



### INSTALLATION

1. Install horn and tighten horn bolt to specified torque.  
**Horn bolt : 17 N·m (1.7 kg-m, 13 ft-lb)**
2. Connect horn connectors.
3. Install front grille. Refer to [EI-16, "Removal and Installation"](#) .

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