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# WW

## SECTION

### WIPER & WASHER

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# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000011596621

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. Information necessary to service the system safely is included in the SR 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 SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

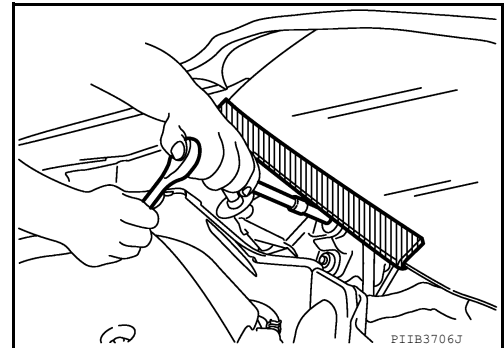
#### **WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

#### Precaution for Procedure without Cowl Top Cover

INFOID:000000011280368

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



#### Precaution for Work

INFOID:000000011280369

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:

## PRECAUTIONS

### < PRECAUTION >

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- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.
- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

# PREPARATION

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## PREPARATION

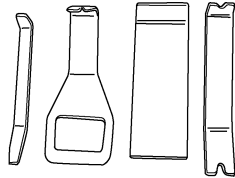
### PREPARATION

#### Special Service Tools

INFOID:000000011280370

The actual shape of the tools may differ from those illustrated here.

| Tool number<br>(TechMate No.)<br>Tool name | Description              |
|--|--------------------------|
| —<br>(J-46534)<br>Trim Tool Set            | Removing trim components |



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# COMPONENT PARTS

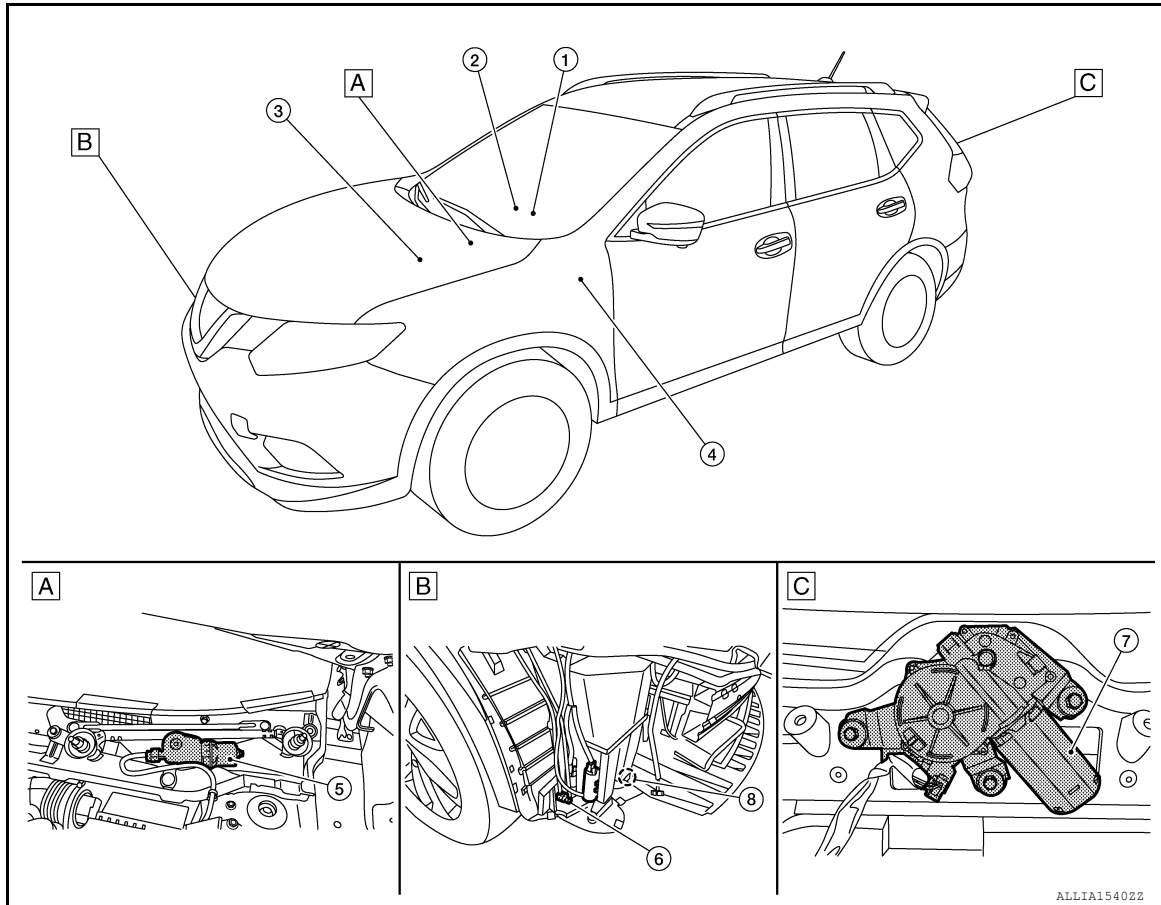
< SYSTEM DESCRIPTION >

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000011280371



- A. View of cowl area (with cowl top cover removed)    B. RH front of vehicle (with front bumper fascia removed)    C. View with back door finisher removed

| No. | Component                                    | Function  |
|-----|--|---|
| 1.  | Combination switch (Wiper and washer switch) | Refer to <a href="#">WW-8. "FRONT WIPER AND WASHER SYSTEM : System Description"</a> .<br>Refer to <a href="#">BCS-76. "Removal and Installation"</a> .  |
| 2.  | Combination meter                            | Transmits the vehicle speed signal to BCM via CAN communication.  |
| 3.  | IPDM E/R                                     | <ul style="list-style-type: none"> <li>Controls the integrated relay according to the request (via CAN communication) from BCM.</li> <li>Performs the auto stop control of the front wiper.</li> </ul> Refer to <a href="#">WW-6. "Component Parts Location"</a> .  |
| 4.  | BCM  | <ul style="list-style-type: none"> <li>Judges each switch status by the combination switch reading function.</li> <li>Requests (via CAN communication) the front wiper relay and the front wiper HI/LO relay ON to IPDM E/R.</li> <li>Supplies power to the rear wiper motor.</li> <li>Performs the auto stop control of the rear wiper.</li> </ul> Refer to <a href="#">WW-6. "Component Parts Location"</a> . |
| 5.  | Front wiper motor                            | Refer to <a href="#">WW-7. "Front wiper motor"</a> .  |
| 6.  | Front and rear washer motor                  | Refer to <a href="#">WW-7. "Washer pump"</a> .  |
| 7.  | Rear wiper motor                             | Refer to <a href="#">WW-7. "Rear wiper motor"</a> .   |
| 8.  | Washer fluid level switch                    | Transmits the washer fluid level switch signal to the combination meter.  |

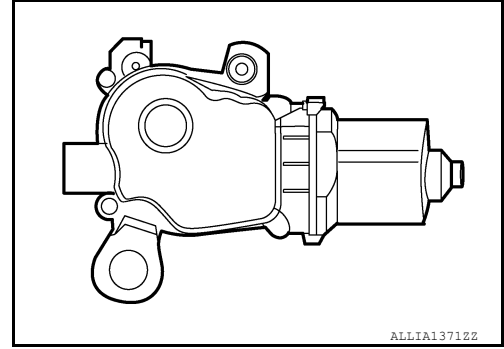
# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

### Front wiper motor

INFOID:000000011280372

- Controls front wiper operation with IPDM E/R control.
- Transmits front wiper stop position signal to IPDM E/R.

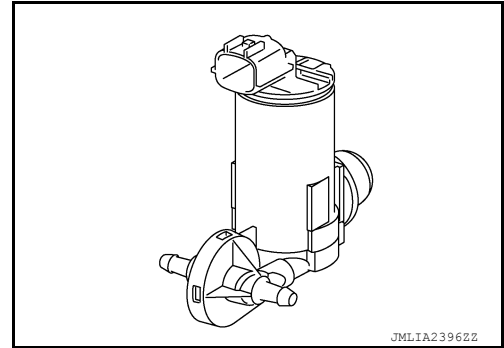


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### Washer pump

INFOID:000000011280373

- Washer fluid is sprayed according to washer switch states.
- Switching between front washer and rear washer is performed according to the voltage polarity change to washer pump.

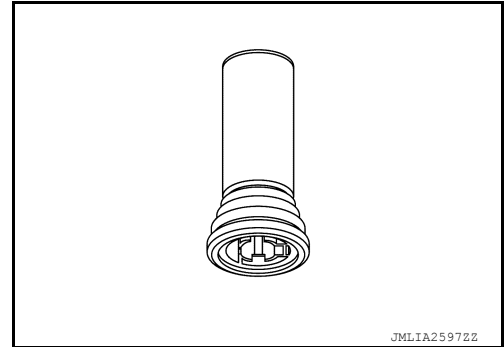


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### Washer fluid level switch

INFOID:000000011280374

Detects that washer fluid level is low and transmits washer fluid level switch signal to combination meter.



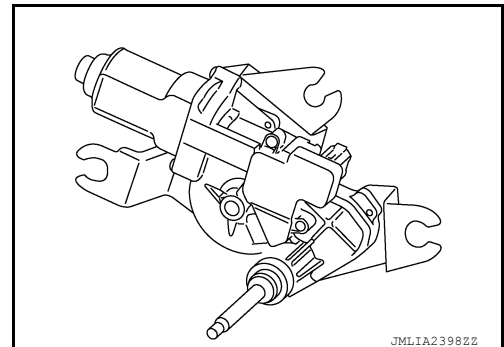
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### Rear wiper motor

INFOID:000000011280375

- Controls rear wiper operation with BCM control.
- Transmits rear wiper stop position signal to BCM.



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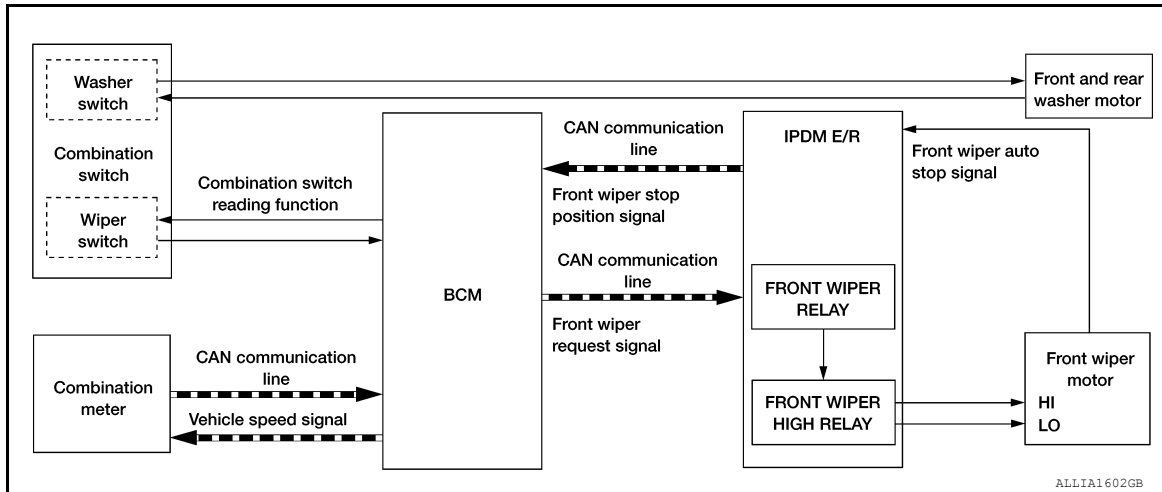
< SYSTEM DESCRIPTION >

## SYSTEM

### FRONT WIPER AND WASHER SYSTEM

#### FRONT WIPER AND WASHER SYSTEM : System Diagram

INFOID:000000011280376



#### FRONT WIPER AND WASHER SYSTEM : System Description

INFOID:000000011280377

##### OUTLINE

##### FRONT WIPER CONTROL (BASIC)

1. BCM detects the combination switch position by the combination switch reading function.
2. BCM transmits the front wiper request signal to the IPDM E/R using CAN communication.
3. IPDM E/R controls the integrated front wiper relay and front wiper high relay based on the status of the front wiper request signal.
4. IPDM E/R provides power to operate the front wiper motor.

##### LOW SPEED OPERATION

1. Ignition switch ON.
2. Front wiper switch in LO or MIST position.
3. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay.

##### HIGH SPEED OPERATION

1. Ignition switch ON.
2. Front wiper switch in HI.
3. BCM reads the combination switch position and transmits the front wiper request signal (HI) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay and the front wiper high relay.

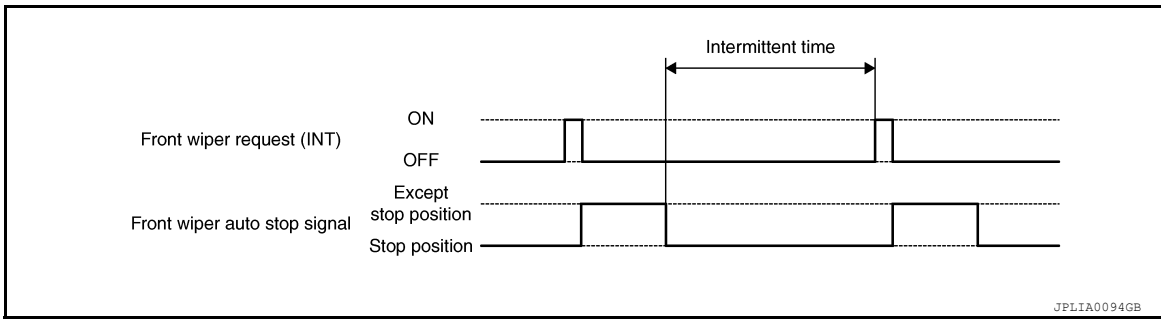
##### INTERMITTENT OPERATION

1. Ignition switch ON.
2. Front wiper switch INT.
3. BCM reads the combination switch position. BCM calculates the delay interval based on the table below and then transmits the front wiper request signal (INT) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay only once.
5. BCM detects stop position of the front wiper motor based on the front wiper stop position signal received from the IPDM E/R.
6. BCM transmits the front wiper request signal (INT) again after the delay interval.



# SYSTEM

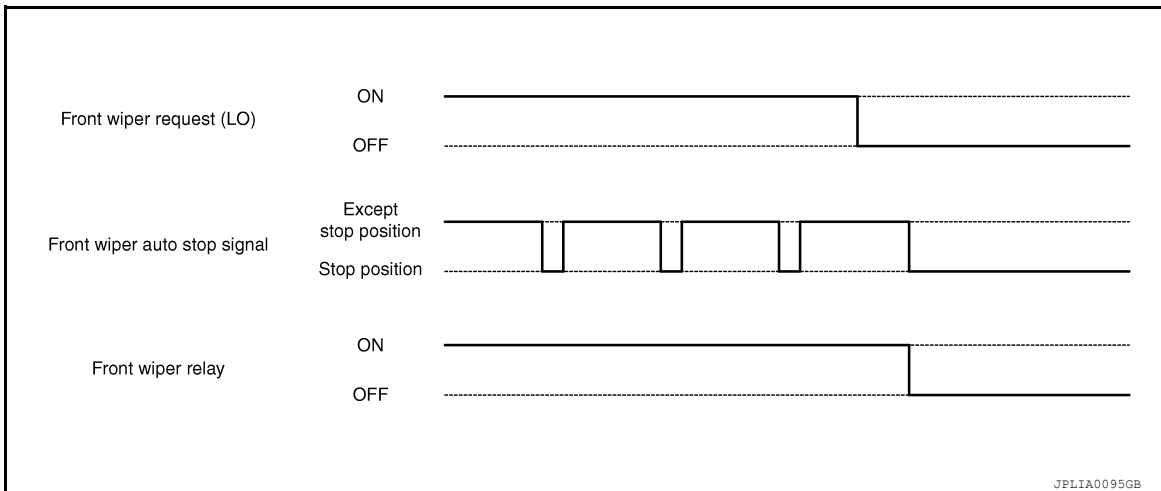
## < SYSTEM DESCRIPTION >



| Intermittent switch position | Length of delay         | Delay interval (s) |
|------------------------------|-------------------------|--------------------|
| 7                            | Short<br>↑<br>↓<br>Long | 0.4                |
| 6                            |                         | 1                  |
| 5                            |                         | 2                  |
| 4                            |                         | 3                  |
| 3                            |                         | 5                  |
| 2                            |                         | 10                 |
| 1                            |                         | 16                 |

### AUTO STOP OPERATION

1. Front wiper switch is turned OFF.
2. BCM monitors wiper switch position by combination switch reading position function.
3. BCM stops transmitting the front wiper request signal to the IPDM E/R.
4. IPDM E/R detects the front wiper auto stop signal from the position of the front wiper motor (stop position/ except stop position).
5. When the front wiper request signal is stopped, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.
6. IPDM E/R turns the front wiper relay OFF when the front wiper motor has reached the stop position.



### MIST OPERATION

1. Ignition switch ON.
2. Front washer switch in OFF position.
3. Front wiper switch in MIST position.
4. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
5. IPDM E/R turns ON the front wiper relay.
6. The front wiper operates once after the front washer operation.

### WIPER/WASHER OPERATION

1. Ignition switch ON.

# SYSTEM

## < SYSTEM DESCRIPTION >

2. Front washer switch ON.
3. The front washer switch provides ground for the front and rear washer motor.
4. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
5. BCM transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
6. IPDM E/R turns ON the front wiper relay.
7. The front wiper operates.

### NOTE:

BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 3 times after front washer switch OFF is detected.

## FRONT WIPER AND WASHER SYSTEM : Fail-Safe

INFOID:000000011280378

### FAIL-SAFE OPERATION

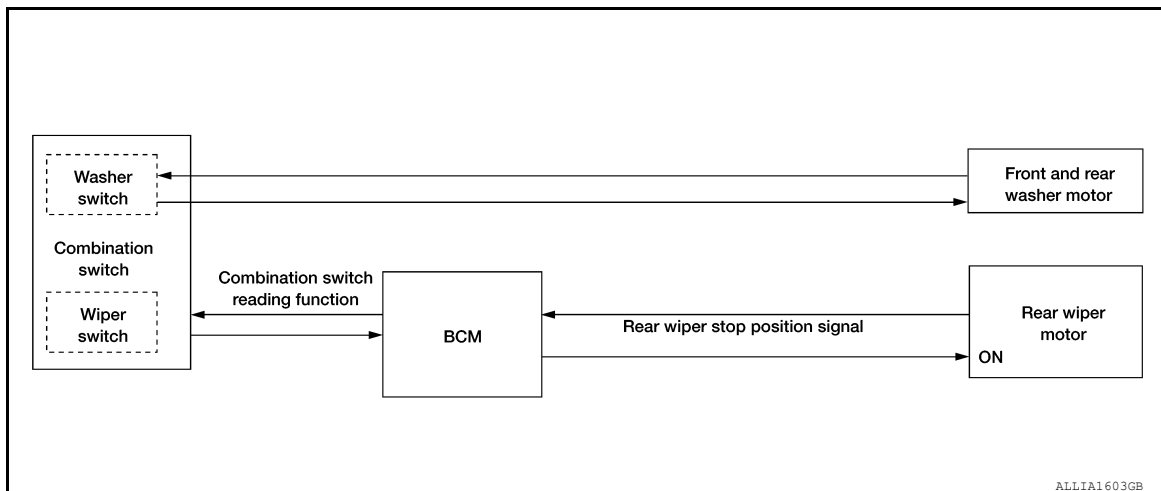
IPDM E/R performs the fail-safe function when the front wiper auto stop circuit is malfunctioning. Refer to [WW-10. "FRONT WIPER AND WASHER SYSTEM : Fail-Safe"](#).

## REAR WIPER AND WASHER SYSTEM

### REAR WIPER AND WASHER SYSTEM : System Description

INFOID:000000011280379

### SYSTEM DIAGRAM



### OUTLINE

The rear wiper is controlled by each function of BCM.

#### Control by BCM

- Combination switch reading function
- Rear wiper control function

### REAR WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM controls the rear wiper to start or stop.

### REAR WIPER ON OPERATION

- BCM supplies power to the rear wiper motor according to the rear wiper ON operating condition.

#### Rear wiper ON operating condition:

- Power switch ON
- Rear wiper switch ON

### REAR WIPER INT OPERATION

- BCM supplies power to the rear wiper motor according to the INT operating condition.

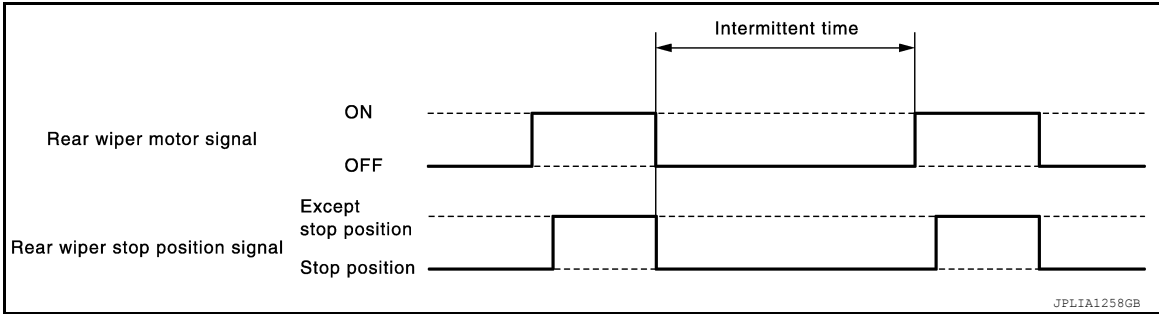
#### Rear wiper INT operating condition:

- Power switch ON

# SYSTEM

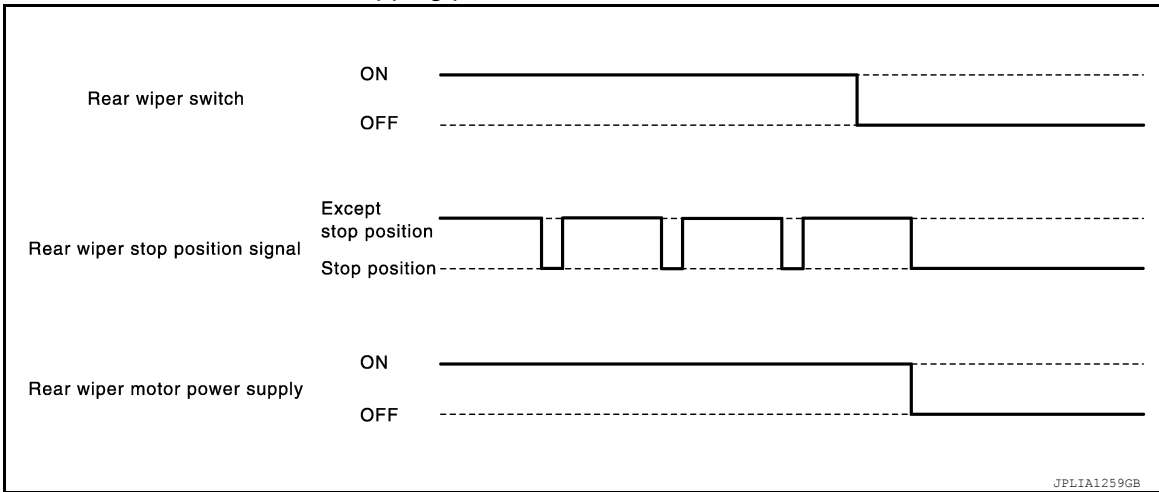
## < SYSTEM DESCRIPTION >

- Rear wiper switch INT
- BCM controls the rear wiper to operate once.
- BCM detects the rear wiper motor stopping position.
- BCM supplies power to the rear wiper motor after an intermittent from the stop of the rear wiper motor.



## REAR WIPER AUTO STOP OPERATION

- BCM stops supplying power to the rear wiper motor when the rear wiper switch is turned OFF.
- BCM reads a rear wiper stop position signal from the rear wiper motor to detect a rear wiper motor position.
- When the rear wiper motor is at other than the stopping position, BCM continues to supply power to the rear wiper motor until it returns to the stopping position.



### NOTE:

BCM stops supplying power to the rear wiper motor when the power switch is turned OFF.

## REAR WIPER OPERATION LINKED WITH WASHER

- BCM supplies power to the rear wiper motor according to the washer linked operating condition of rear wiper. When the rear washer switch is turned OFF, BCM controls rear wiper to operate approximately 3 times.

Washer linked operating condition of rear wiper:

- Power switch ON
- Rear washer switch ON (0.4 second or more)
- The washer pump is grounded through the combination switch with the rear washer switch ON.

## REAR WIPER AND WASHER SYSTEM : Fail-safe

INFOID:000000011280380

### FAIL-SAFE OPERATION

IPDM E/R performs the fail-safe function when the rear wiper auto stop circuit is malfunctioning. Refer to [WW-11, "REAR WIPER AND WASHER SYSTEM : Fail-safe"](#).

# DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000011379502

### APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

| Direct Diagnostic Mode | Description  |
|------------------------|--|
| Ecu Identification     | The BCM part number is displayed.  |
| Self Diagnostic Result | The BCM self diagnostic results are displayed.   |
| Data Monitor           | The BCM input/output data is displayed in real time.   |
| Active Test            | The BCM activates outputs to test components.  |
| Work support           | The settings for BCM functions can be changed.   |
| Configuration          | <ul style="list-style-type: none"> <li>The vehicle specification can be read and saved.</li> <li>The vehicle specification can be written when replacing BCM.</li> </ul> |
| CAN Diag Support Mntr  | The result of transmit/receive diagnosis of CAN communication is displayed.  |

### SYSTEM APPLICATION

BCM can perform the following functions.

| System                               | Sub System      | Direct Diagnostic Mode |                        |              |             |              |               |                       |
|--------------------------------------|-----------------|------------------------|------------------------|--------------|-------------|--------------|---------------|-----------------------|
|                                      |                 | Ecu Identification     | Self Diagnostic Result | Data Monitor | Active Test | Work support | Configuration | CAN Diag Support Mntr |
| Door lock                            | DOOR LOCK       |                        | ×                      | ×            | ×           | ×            |               |                       |
| Rear window defogger                 | REAR DEFOGGER   |                        |                        | ×            | ×           | ×            |               |                       |
| Warning chime                        | BUZZER          |                        |                        | ×            | ×           |              |               |                       |
| Interior room lamp timer             | INT LAMP        |                        |                        | ×            | ×           | ×            |               |                       |
| Exterior lamp                        | HEADLAMP        |                        |                        | ×            | ×           | ×            |               |                       |
| Wiper and washer                     | WIPER           |                        |                        | ×            | ×           | ×            |               |                       |
| Turn signal and hazard warning lamps | FLASHER         |                        |                        | ×            | ×           |              |               |                       |
| Intelligent Key system               | INTELLIGENT KEY |                        | ×                      | ×            | ×           | ×            |               |                       |
| Combination switch                   | COMB SW         |                        |                        | ×            |             |              |               |                       |
| BCM                                  | BCM             | ×                      | ×                      |              |             | ×            | ×             | ×                     |
| Immobilizer                          | IMMU            |                        | ×                      | ×            | ×           |              |               |                       |
| Interior room lamp battery saver     | BATTERY SAVER   |                        |                        | ×            | ×           |              |               |                       |
| Back door open                       | TRUNK           |                        |                        | ×            |             |              |               |                       |
| Vehicle security system              | THEFT ALM       |                        |                        | ×            | ×           | ×            |               |                       |
| RAP system                           | RETAINED PWR    |                        |                        | ×            |             |              |               |                       |
| Signal buffer system                 | SIGNAL BUFFER   |                        |                        | ×            |             |              |               |                       |
| Air conditioner                      | AIR CONDITIONER |                        |                        |              | ×           |              |               |                       |

### WIPER

# DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

## WIPER : CONSULT Function (BCM - WIPER)

INFOID:000000011379503

### DATA MONITOR

| Monitor Item [Unit]    | Description  |
|------------------------|--|
| PUSH SW [On/Off]       | Indicates condition of push-button ignition switch.                                      |
| VEH SPEED 1 [km/h]     | Indicates vehicle speed signal received from ABS on CAN communication line.              |
| FR WIPER HI [On/Off]   | Indicates condition of wiper operation of combination switch.                            |
| FR WIPER LOW [On/Off]  |  |
| FR WASHER SW [On/Off]  |  |
| FR WIPER INT [On/Off]  |  |
| FR WIPER STOP [On/Off] | Indicates front wiper auto stop signal received from IPDM E/R on CAN communication line. |
| INT VOLUME [1 - 7]     | Indicates condition of intermittent wiper operation of combination switch.               |
| RR WIPER ON [On/Off]   | Indicates condition of rear wiper operation of combination switch.                       |
| RR WIPER INT [On/Off]  |  |
| RR WASHER SW [On/Off]  |  |
| RR WIPER STOP [On/Off] | Indicates rear wiper motor auto stop input from rear wiper motor.                        |

### ACTIVE TEST

| Test Item | Description   |
|-----------|---|
| FR WIPER  | This test is able to check front wiper operation [Hi/Lo/INT/Off]. |
| RR WIPER  | This test is able to check rear wiper operation [On/Off].         |

### WORK SUPPORT

| Support Item        | Setting | Description  |
|---------------------|---------|--|
| WIPER SPEED SETTING | On      | Front wiper intermittent time linked with vehicle speed and wiper intermittent dial position.        |
|                     | Off*    | Front wiper intermittent time is not linked with vehicle speed and wiper intermittent dial position. |

\*: Initial Setting

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## DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

### DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000011379504

#### APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

| Direct Diagnostic Mode | Description  |
|------------------------|--|
| Ecu Identification     | The BCM part number is displayed.  |
| Self Diagnostic Result | The BCM self diagnostic results are displayed.   |
| Data Monitor           | The BCM input/output data is displayed in real time.   |
| Active Test            | The BCM activates outputs to test components.  |
| Work support           | The settings for BCM functions can be changed.   |
| Configuration          | <ul style="list-style-type: none"> <li>• The vehicle specification can be read and saved.</li> <li>• The vehicle specification can be written when replacing BCM.</li> </ul> |
| CAN Diag Support Mntr  | The result of transmit/receive diagnosis of CAN communication is displayed.  |

#### SYSTEM APPLICATION

BCM can perform the following functions.

| System                               | Sub System           | Direct Diagnostic Mode |                        |              |             |              |               |                       |
|--------------------------------------|----------------------|------------------------|------------------------|--------------|-------------|--------------|---------------|-----------------------|
|                                      |                      | Ecu Identification     | Self Diagnostic Result | Data Monitor | Active Test | Work support | Configuration | CAN Diag Support Mntr |
| Door lock                            | DOOR LOCK            |                        |                        | x            | x           | x            |               |                       |
| Rear window defogger                 | REAR DEFOGGER        |                        |                        | x            | x           | x            |               |                       |
| Warning chime                        | BUZZER               |                        |                        | x            | x           |              |               |                       |
| Interior room lamp timer             | INT LAMP             |                        |                        | x            | x           | x            |               |                       |
| Remote keyless entry system          | MULTI REMOTE ENT     |                        |                        |              |             | x            |               |                       |
| Exterior lamp                        | HEADLAMP             |                        |                        | x            | x           |              |               |                       |
| Wiper and washer                     | WIPER                |                        |                        | x            | x           | x            |               |                       |
| Turn signal and hazard warning lamps | FLASHER              |                        |                        | x            | x           |              |               |                       |
| Combination switch                   | COMB SW              |                        |                        | x            |             |              |               |                       |
| BCM                                  | BCM                  | x                      | x                      |              |             | x            | x             | x                     |
| Immobilizer                          | IMMU                 |                        | x                      |              | x           |              |               |                       |
| Interior room lamp battery saver     | BATTERY SAVER        |                        |                        | x            | x           |              |               |                       |
| Back door open                       | TRUNK                |                        |                        | x            |             |              |               |                       |
| Vehicle security system              | THEFT ALM            |                        |                        | x            | x           | x            |               |                       |
| RAP system                           | RETAINED PWR         |                        |                        | x            |             |              |               |                       |
| TPMS                                 | AIR PRESSURE MONITOR |                        | x                      | x            | x           | x            |               |                       |

#### WIPER

WIPER : CONSULT Function (BCM - WIPER)

INFOID:0000000011379505

#### DATA MONITOR

# DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM)

## < SYSTEM DESCRIPTION >

| Monitor Item [Unit]    | Description  |
|------------------------|--|
| FR WIPER HI [On/Off]   | Indicates condition of wiper operation of combination switch.                            |
| FR WIPER LOW [On/Off]  |  |
| FR WASHER SW [On/Off]  |  |
| FR WIPER INT [On/Off]  |  |
| FR WIPER STOP [On/Off] | Indicates front wiper auto stop signal received from IPDM E/R on CAN communication line. |
| INT VOLUME [1 – 4]     | Indicates condition of intermittent wiper operation of combination switch.               |
| RR WIPER ON [On/Off]   | Indicates condition of rear wiper operation of combination switch.                       |
| RR WIPER INT [On/Off]  |  |
| RR WASHER SW [On/Off]  |  |
| RR WIPER STOP [On/Off] | Indicates rear wiper motor auto stop input from rear wiper motor.                        |

## ACTIVE TEST

| Test Item | Description   |
|-----------|---|
| FR WIPER  | This test is able to check front wiper operation [Hi/Lo/INT/Off]. |
| RR WIPER  | This test is able to check rear wiper operation [On/Off].         |

## WORK SUPPORT

| Support Item        | Setting | Description  |
|---------------------|---------|--|
| WIPER SPEED SETTING | On      | Front wiper intermittent time linked with vehicle speed and wiper intermittent dial position.        |
|                     | Off*    | Front wiper intermittent time is not linked with vehicle speed and wiper intermittent dial position. |

\*: Initial Setting

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# DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (IPDM E/R)

### CONSULT Function (IPDM E/R)

INFOID:000000011379506

#### APPLICATION ITEM

CONSULT performs the following functions via CAN communication with IPDM E/R.

| Direct Diagnostic Mode | Description   |
|------------------------|---|
| ECU Identification     | The IPDM E/R part number is displayed.                                      |
| Self Diagnostic Result | The IPDM E/R self diagnostic results are displayed.                         |
| Data Monitor           | The IPDM E/R input/output data is displayed in real time.                   |
| Active Test            | The IPDM E/R activates outputs to test components.                          |
| CAN Diag Support Mntr  | The result of transmit/receive diagnosis of CAN communication is displayed. |

#### ECU IDENTIFICATION

The IPDM E/R part number is displayed.

#### SELF DIAGNOSTIC RESULT

Refer to [PCS-22. "DTC Index"](#).

#### DATA MONITOR

| Monitor Item [Unit]              | Description  |
|----------------------------------|--|
| REVERSE SIGNAL [Open/Close]      | Indicates condition of transmission range switch R (Reverse) position.               |
| IGN RELAY [Open/Close]           | Indicates condition of ignition relay-1.   |
| PUSH SW [Open/Close]             | Indicates condition of push-button ignition switch.                                  |
| INTERLOCK/PNP SW [Open/Close]    | Indicates condition of transmission range switch P (Park) and N (Neutral) positions. |
| OIL PRESSURE SW [Open/Close]     | Indicates condition of oil pressure switch.  |
| HOOD SW [Open/Close]             | Indicates condition of hood switch.  |
| COMPRESSOR [OFF/ON]              | Indicates condition of A/C compressor.   |
| HORN RELAY [OFF/ ON]             | Indicates condition of horn relay.   |
| COOLING FAN [OFF/ON]             | Indicates condition of cooling fan relay-1.  |
| FRONT WIPER HI/LO RELAY [OFF/ON] | Indicates condition of front wiper high relay.                                       |
| FRONT WIPER RELAY [OFF/ON]       | Indicates condition of front wiper relay.  |
| IGN RELAY OFF STATUS [OFF/ON]    | Indicates condition of ignition relay-1 OFF status.                                  |
| IGN RELAY ON STATUS [OFF/ON]     | Indicates condition of ignition relay-1 ON status.                                   |
| COOLING FAN RELAY 1 [OFF/ON]     | Indicates condition of cooling fan relay-1.  |
| STARTER RELAY [OFF/ON]           | Indicates condition of starter relay.  |
| COMP ECV DUTY [%]                | Indicates condition of A/C compressor.   |
| COOLING FAN RELAY 2 [%]          | Indicates condition of cooling fan relay-2.  |
| FR FOG LAMP LH [%]               | Indicates condition of front fog lamp LH.  |
| FR FOG LAMP RH [%]               | Indicates condition of front fog lamp RH.  |
| PARKING LAMP [%]                 | Indicates condition of parking lamp.   |
| TAIL LAMP LH [%]                 | Indicates condition of tail lamp LH.   |
| TAIL LAMP RH [%]                 | Indicates condition of tail lamp RH.   |
| DAYTIME RUNNING LIGHT LH [%]     | Indicates condition of daytime running light LH.                                     |
| DAYTIME RUNNING LIGHT RH [%]     | Indicates condition of daytime running light RH.                                     |
| HEADLAMP (HI) LH [%]             | Indicates condition of headlamp high beam LH.  |



## DIAGNOSIS SYSTEM (IPDM E/R)

### < SYSTEM DESCRIPTION >

| Monitor Item [Unit]                      | Description  |    |
|--|--|----|
| HEADLAMP (HI) RH [%]                     | Indicates condition of headlamp high beam RH.  | A  |
| HEADLAMP (LO) LH [%]                     | Indicates condition of headlamp low beam LH.   |    |
| HEADLAMP (LO) RH [%]                     | Indicates condition of headlamp low beam RH.   | B  |
| A/C RELAY STUCK [NG/OK]                  | Indicates condition of A/C relay.  |    |
| A/C RELAY [Off/On]                       | Indicates condition of A/C relay.  |    |
| COMP ECV STATUS [NG/OK]                  | Indicates condition of A/C compressor.   | C  |
| VEHICLE SECURITY HORN [Off/On]           | Indicates condition of horn relay.   |    |
| BATTERY CURRENT SENSOR [NG/OK]           | Indicates condition of battery current sensor.                                       | D  |
| FRONT FOG LAMP [Off/On]                  | Indicates condition of front fog lamps.  |    |
| COMP ECV CURRENT [A]                     | Indicates condition of A/C compressor current.                                       |    |
| BATTERY VOLTAGE [V]                      | Indicates condition of battery voltage.  | E  |
| COOLING FAN DUTY [%]                     | Indicates condition of cooling fans.   |    |
| HOOD SW (CAN) [OPEN/CLOSE]               | Indicates condition of hood switch.  | F  |
| FRONT WIPER [STOP/LOW/HIGH]              | Indicates condition of front wiper motor.  |    |
| FR WIPER STOP POSITION [STOP P/ACTIVE P] | Indicates condition of front wiper motor stop.                                       |    |
| HEADLAMP (HI) [Off/On]                   | Indicates condition of headlamp high beams.  | G  |
| HEADLAMP (LO) [Off/On]                   | Indicates condition of headlamp low beams.   |    |
| IGNITION RELAY STATUS [Off/On]           | Indicates condition of ignition relay-1.   |    |
| IGN RELAY MONITOR [Off/On]               | Indicates condition of ignition relay-1 feedback.                                    | H  |
| IGNITION POWER SUPPLY [Off/On]           | Indicates condition of ignition relay-1.   |    |
| INTERLOCK/PNP SW (CAN) [Off/On]          | Indicates condition of transmission range switch P (Park) and N (Neutral) positions. | I  |
| PUSH-BUTTON IGN SW (CAN) [Off/On]        | Indicates condition of push-button ignition switch.                                  |    |
| TAIL LAMP [Off/On]                       | Indicates condition of tail lamps.   | J  |
| REVERSE SIGNAL (CAN) [Off/On]            | Indicates condition of transmission range switch R (Reverse) position.               |    |
| ST&ST CONT RELAY STATUS [Off/ST R On]    | Indicates condition of starter cut and starter relays.                               | K  |
| STARTER MOTOR STATUS [Off/On]            | Indicates condition of starter motor.  |    |
| STARTER RELAY (CAN) [LOW/HIGH]           | Indicates condition of starter relay.  | WW |
| IPDM NOT SLEEP [NO RDY/RDY]              | Indicates condition of IPDM E/R sleep status.  |    |
| AFTER COOLING TIME [No request/Request]  | Indicates condition of cooling fan request.  |    |
| AFTER COOLING SPEED [%]                  | Indicates condition of cooling fans.   | M  |
| COOLING FAN TYPE [NISSAN/RENAULT]        | Indicates cooling fan type.  |    |
| COMPRESSOR REQ1 [Off/On]                 | Indicates condition of A/C compressor request.                                       |    |
| VHCL SECURITY HORN REQ [Off/On]          | Indicates condition of horn relay request.   | N  |
| DTRL REQ [Off/On]                        | Indicates condition of daytime running light request.                                |    |
| SLEEP/WAKE UP [WAKEUP/SLEEP]             | Indicates condition of IPDM E/R sleep/wake.  | O  |
| CRANKING ENABLE-TCM [NG/OK]              | Indicates condition of crank enable from TCM.  |    |
| CRANKING ENABLE-ECM [NG/OK]              | Indicates condition of crank enable from ECM.  |    |
| CAN DIAGNOSIS [NG/OK]                    | Indicates condition of CAN diagnosis.  | P  |
| FRONT FOG LAMP REQ [Off/On]              | Indicates condition of front fog lamp request.                                       |    |
| HIGH BEAM REQ [Off/On]                   | Indicates condition of headlamp high beam request.                                   |    |
| HORN CHIRP [Off/On]                      | Indicates condition of horn relay request.   |    |
| COOLING FAN REQ [%]                      | Indicates condition of cooling fan request.  |    |
| ENGINE STATUS [STOP/RUN/IDLING]          | Indicates condition of engine status.  |    |

## DIAGNOSIS SYSTEM (IPDM E/R)

### < SYSTEM DESCRIPTION >

| Monitor Item [Unit]              | Description   |
|----------------------------------|---|
| TURN SIGNAL REQ [Off/LH/RH]      | Indicates condition of turn signal request.                 |
| FR WIPER REQ [RETURN/LOW/HIGH]   | Indicates condition of front wiper motor request.           |
| SHIFT POSITION [P/R/N/D/L]       | Indicates condition of transmission range switch positions. |
| LOW BEAM REQ [Off/On]            | Indicates condition of headlamp low beam request.           |
| POSITION LIGHT REQ [Off/On]      | Indicates condition of parking lamp request.                |
| COMPRESSOR REQ2 [Off/On]         | Indicates condition of A/C compressor request.              |
| IGNITION SW [Off/On]             | Indicates condition of ignition switch.                     |
| VEHICLE SPEED (METER) [mph/km/h] | Indicates vehicle speed.                                    |
| BAT DISCHARGE COUNT [0-100]      | Indicates condition of battery discharge.                   |
| BATTERY STATUS [NG/OK]           | Indicates battery status.                                   |

### ACTIVE TEST

| Test item            | Description  |
|----------------------|--|
| HORN                 | This test is able to check horn operation [Off/On].                  |
| FRONT WIPER          | This test is able to check wiper motor operation [Off/Low/High].     |
| COMPRESSOR           | This test is able to check A/C compressor operation [Off/On].        |
| COOLING FAN (DUAL)   | This test is able to check cooling fan operation [Off/LO/HI].        |
| HEADLAMP (HI)        | This test is able to check headlamp high beam operation [Off/3/5].   |
| HEADLAMP (LO)        | This test is able to check headlamp low beam operation [Off/3/5].    |
| FRONT FOG LAMP       | This test is able to check front fog lamp operation [Off/3/5].       |
| DAYTIME RUNNING LAMP | This test is able to check daytime running lamp operation [Off/3/5]. |
| PARKING LAMP         | This test is able to check parking lamp operation [Off/3/5].         |
| TAIL LAMP            | This test is able to check tail lamp operation [Off/3/5].            |

### CAN DIAG SUPPORT MNTR

Refer to [LAN-14, "CAN Diagnostic Support Monitor"](#).

# BCM

< ECU DIAGNOSIS INFORMATION >

## ECU DIAGNOSIS INFORMATION

### BCM

#### List of ECU Reference

INFOID:0000000011280386

| ECU                                  | Reference  |
|--------------------------------------|--|
| BCM (with Intelligent Key system)    | <a href="#">BCS-28, "Reference Value"</a>                |
|                                      | <a href="#">BCS-46, "Fail Safe"</a>                      |
|                                      | <a href="#">BCS-46, "DTC Inspection Priority Chart"</a>  |
|                                      | <a href="#">BCS-47, "DTC Index"</a>                      |
| BCM (without Intelligent Key system) | <a href="#">BCS-96, "Reference Value"</a>                |
|                                      | <a href="#">BCS-107, "Fail Safe"</a>                     |
|                                      | <a href="#">BCS-107, "DTC Inspection Priority Chart"</a> |
|                                      | <a href="#">BCS-108, "DTC Index"</a>                     |

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# FRONT WIPER AND WASHER SYSTEM

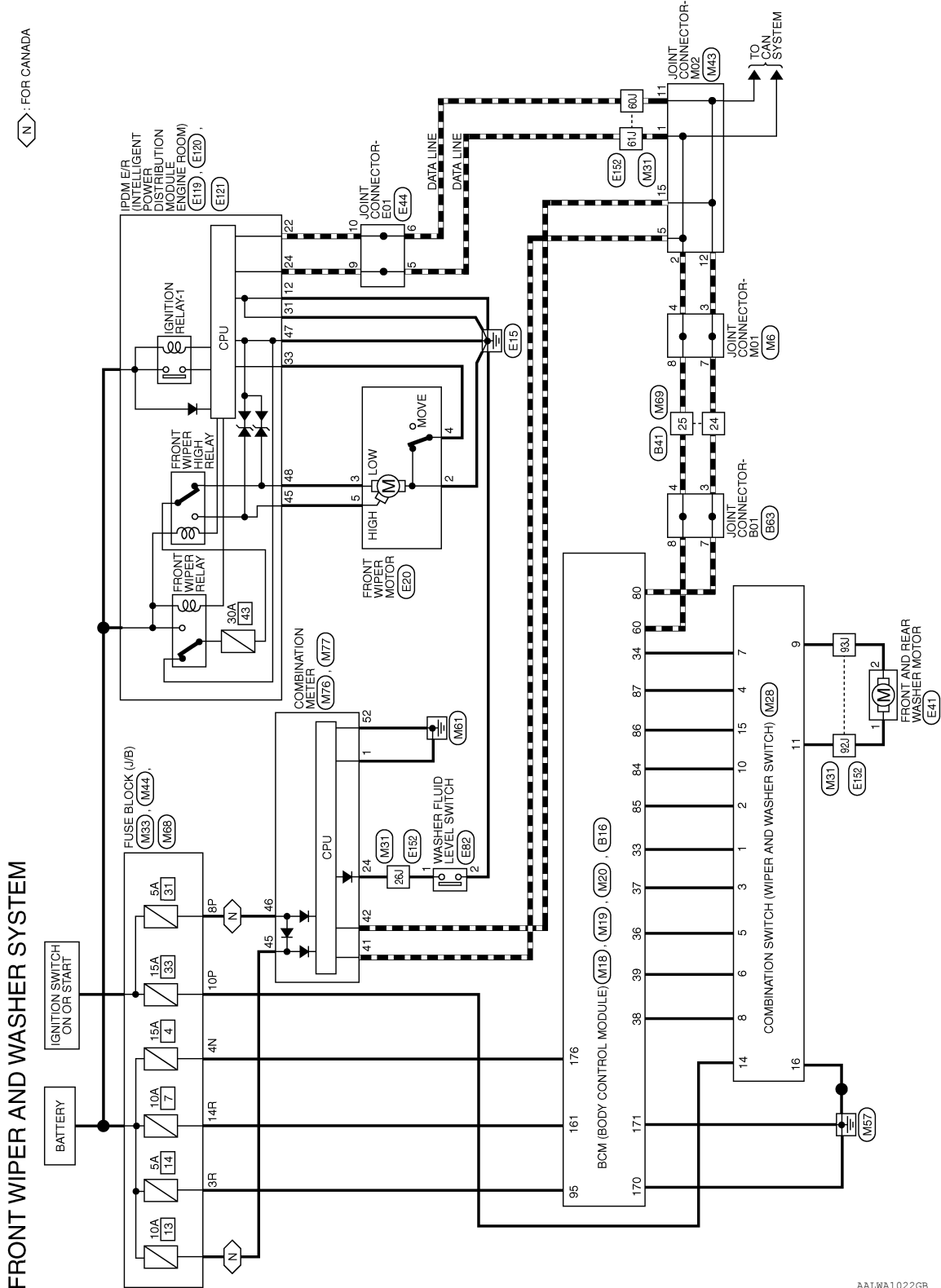
< WIRING DIAGRAM >

## WIRING DIAGRAM

### FRONT WIPER AND WASHER SYSTEM

Wiring Diagram

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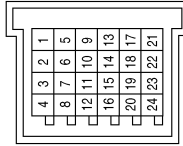
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# FRONT WIPER AND WASHER SYSTEM

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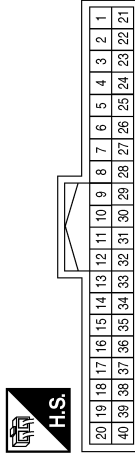
## FRONT WIPER AND WASHER SYSTEM CONNECTORS

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M6                  |
| Connector Name  | JOINT CONNECTOR-M01 |
| Connector Color | GRAY                |



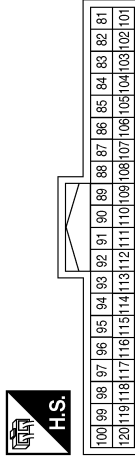
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | P             | -           |
| 4            | L             | -           |
| 7            | P             | -           |
| 8            | L             | -           |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M18                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | GRAY                      |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 33           | LG            | I CSW 5     |
| 34           | Y             | 0 CSW 5     |
| 36           | G             | I CSW 3     |
| 37           | GR            | I CSW 4     |
| 38           | V             | I CSW 1     |
| 39           | W             | I CSW 2     |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M19                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | BLACK                     |



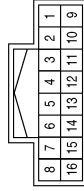
| Terminal No. | Color of Wire | Signal Name    |
|--------------|---------------|----------------|
| 84           | BR            | 0 CSW 2        |
| 85           | SB            | 0 CSW 1        |
| 86           | P             | 0 CSW 3        |
| 87           | BG            | 0 CSW 4        |
| 95           | V             | I SHORTING PIN |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M20                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | BROWN                     |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 161          | W             | I PWR ECU   |
| 170          | B             | I GND1      |
| 171          | B             | I GND2      |
| 176          | LG            | I PWR WIPER |

|                 |                    |
|-----------------|--------------------|
| Connector No.   | M28                |
| Connector Name  | COMBINATION SWITCH |
| Connector Color | WHITE              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | -           |
| 2            | SB            | -           |
| 3            | GR            | -           |
| 4            | BG            | -           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | G             | -           |
| 6            | W             | -           |
| 7            | Y             | -           |
| 8            | V             | -           |
| 9            | G             | -           |
| 10           | BR            | -           |
| 11           | Y             | -           |
| 14           | LG            | -           |
| 15           | P             | -           |
| 16           | GR            | -           |

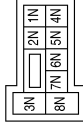
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# FRONT WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

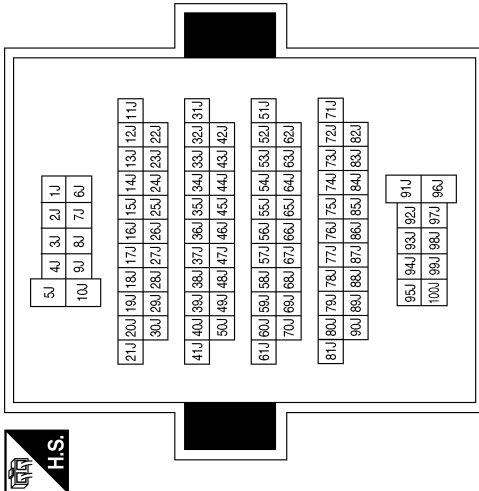
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|-----------------|------------------|
| Connector No.   | M33              |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



|              |    |               |    |             |   |
|--------------|----|---------------|----|-------------|---|
| Terminal No. | 4N | Color of Wire | LG | Signal Name | - |
|--------------|----|---------------|----|-------------|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 26J          | BR            | -           |
| 60J          | P             | -           |
| 61J          | L             | -           |
| 92J          | Y             | -           |
| 93J          | G             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M31          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|                 |                  |
|-----------------|------------------|
| Connector No.   | M68              |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | BROWN            |



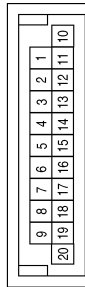
|              |     |               |   |             |   |
|--------------|-----|---------------|---|-------------|---|
| Terminal No. | 3R  | Color of Wire | V | Signal Name | - |
|              | 14R | W             |   |             | - |

|                 |                  |
|-----------------|------------------|
| Connector No.   | M44              |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



|              |     |               |       |             |   |
|--------------|-----|---------------|-------|-------------|---|
| Terminal No. | 8P  | Color of Wire | LA/BR | Signal Name | - |
|              | 10P | LG            |       |             | - |
|              | 13P | LA/G          |       |             | - |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M43                 |
| Connector Name  | JOINT CONNECTOR-M02 |
| Connector Color | BLUE                |



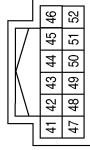
|              |    |               |   |             |   |
|--------------|----|---------------|---|-------------|---|
| Terminal No. | 1  | Color of Wire | L | Signal Name | - |
|              | 2  | L             |   |             | - |
|              | 5  | L             |   |             | - |
|              | 11 | P             |   |             | - |
|              | 12 | P             |   |             | - |
|              | 15 | P             |   |             | - |

AALIA2920GB

# FRONT WIPER AND WASHER SYSTEM

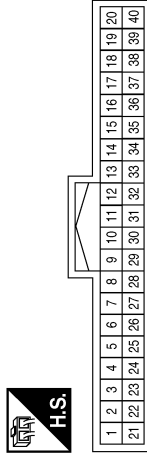
< WIRING DIAGRAM >

|                 |                   |
|-----------------|-------------------|
| Connector No.   | M77               |
| Connector Name  | COMBINATION METER |
| Connector Color | WHITE             |



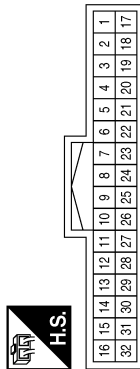
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 41           | L             | CAN-H       |
| 42           | P             | CAN-L       |
| 45           | L             | BAT         |
| 46           | L/BR          | IGN         |
| 52           | B             | G1          |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | M76               |
| Connector Name  | COMBINATION METER |
| Connector Color | WHITE             |



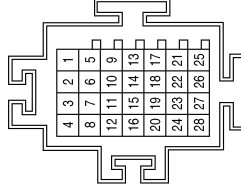
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | GND         |
| 24           | BR            | WASHER SW   |

|                 |              |
|-----------------|--------------|
| Connector No.   | M69          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 24           | P             | -           |
| 25           | L             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | E44                 |
| Connector Name  | JOINT CONNECTOR-E01 |
| Connector Color | WHITE               |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | L             | -           |
| 6            | P             | -           |
| 9            | L             | -           |
| 10           | P             | -           |

|                 |                             |
|-----------------|-----------------------------|
| Connector No.   | E41                         |
| Connector Name  | FRONT AND REAR WASHER MOTOR |
| Connector Color | BLACK                       |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | -           |
| 2            | L             | -           |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | E20               |
| Connector Name  | FRONT WIPER MOTOR |
| Connector Color | GRAY              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | -             | -           |
| 2            | B             | -           |
| 3            | Y             | -           |
| 4            | BR            | -           |
| 5            | V             | -           |

AALIA2921GB

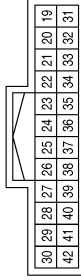
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WW

# FRONT WIPER AND WASHER SYSTEM

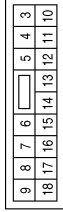
< WIRING DIAGRAM >

|                 |  |
|-----------------|--|
| Connector No.   | E120   |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | GRAY   |



| Terminal No. | Color of Wire | Signal Name       |
|--------------|---------------|-------------------|
| 22           | P             | CAN-L             |
| 24           | L             | CAN-H             |
| 31           | B             | 2ND SIGNAL GROUND |
| 33           | BR            | I AUTO STOP WIPER |

|                 |  |
|-----------------|--|
| Connector No.   | E119   |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | GRAY   |



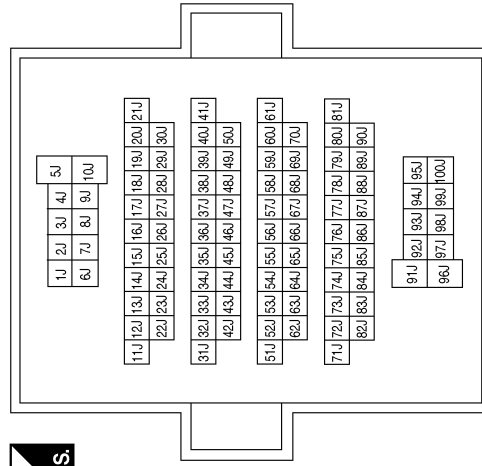
| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 12           | B             | SIGNAL GROUND |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | E82                       |
| Connector Name  | WASHER FLUID LEVEL SWITCH |
| Connector Color | WHITE                     |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | BR            | -           |
| 2            | B             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E152         |
| Connector Name  | WIPE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 26J          | BR            | -           |
| 60J          | P             | -           |
| 61J          | L             | -           |
| 92J          | LG            | -           |
| 93J          | L             | -           |

|                 |  |
|-----------------|--|
| Connector No.   | E121   |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | RED  |



| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 45           | V             | O FR WIPER HI |
| 47           | B             | POWER GROUND  |
| 48           | Y             | O FR WIPER LO |

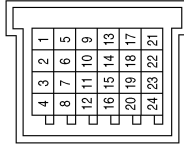
AALIA2986GB



# FRONT WIPER AND WASHER SYSTEM

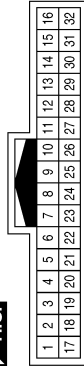
< WIRING DIAGRAM >

|                 |                     |
|-----------------|---------------------|
| Connector No.   | B63                 |
| Connector Name  | JOINT CONNECTOR-B01 |
| Connector Color | GRAY                |



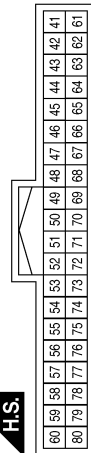
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | P             | -           |
| 4            | L             | -           |
| 7            | P             | -           |
| 8            | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B41          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 24           | P             | -           |
| 25           | L             | -           |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | B16                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | GREEN                     |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 60           | L             | CAN-H       |
| 80           | P             | CAN-L       |

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WW

AALIA2922GB

# REAR WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

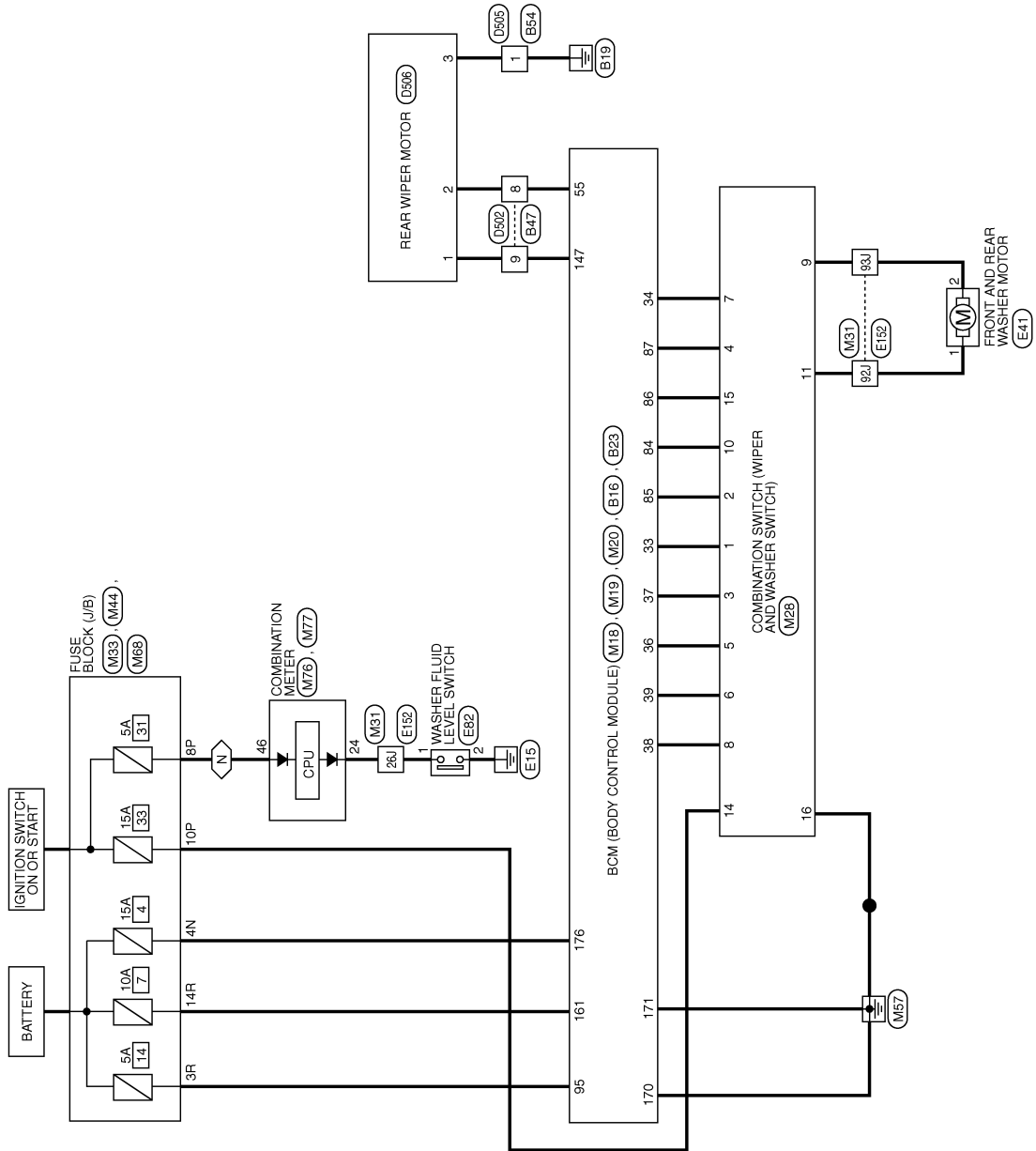
## REAR WIPER AND WASHER SYSTEM

Wiring Diagram

INFOID:000000011280388

N : FOR CANADA

### REAR WIPER AND WASHER SYSTEM



AALWA0781GB

# REAR WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

## REAR WIPER AND WASHER SYSTEM CONNECTORS

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M18                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | GRAY                      |



|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9  | 8  | 7  | 6  | 5  | 4  | 3  | 2  | 1  |
| 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 33           | LG            | I CSW 5     |
| 34           | Y             | 0 CSW 5     |
| 36           | G             | I CSW 3     |
| 37           | GR            | I CSW 4     |
| 38           | V             | I CSW 1     |
| 39           | W             | I CSW 2     |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M19                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | BLACK                     |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 100 | 99  | 98  | 97  | 96  | 95  | 94  | 93  | 92  | 91  | 90  | 89  | 88  | 87  | 86  | 85  | 84  | 83  | 82  | 81  |
| 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 |

| Terminal No. | Color of Wire | Signal Name    |
|--------------|---------------|----------------|
| 84           | BR            | 0 CSW 2        |
| 85           | SB            | 0 CSW 1        |
| 86           | P             | 0 CSW 3        |
| 87           | BG            | 0 CSW 4        |
| 95           | V             | I SHORTING PIN |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M20                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | BROWN                     |



|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 167 | 166 | 165 | 164 | 163 | 162 | 161 |     |     |
| 176 | 175 | 174 | 173 | 172 | 171 | 170 | 169 | 168 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 161          | W             | I PWR ECU   |
| 170          | B             | I GND1      |
| 171          | B             | I GND2      |
| 176          | LG            | I PWR WIPER |

|                 |                    |
|-----------------|--------------------|
| Connector No.   | M28                |
| Connector Name  | COMBINATION SWITCH |
| Connector Color | WHITE              |



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

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | -           |
| 2            | SB            | -           |
| 3            | GR            | -           |
| 4            | BG            | -           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | G             | -           |
| 6            | W             | -           |
| 7            | Y             | -           |
| 8            | V             | -           |
| 9            | G             | -           |
| 10           | BR            | -           |
| 11           | Y             | -           |
| 14           | LG            | -           |
| 15           | P             | -           |
| 16           | GR            | -           |

AALIA2915GB

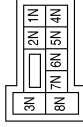
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WW

# REAR WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

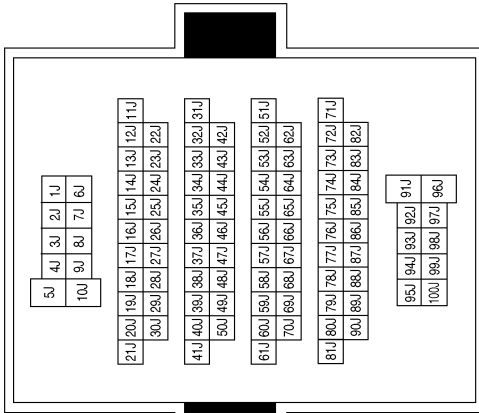
|                 |                  |
|-----------------|------------------|
| Connector No.   | M33              |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



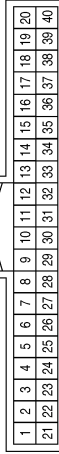
|              |    |               |    |             |   |
|--------------|----|---------------|----|-------------|---|
| Terminal No. | 4N | Color of Wire | LG | Signal Name | - |
|--------------|----|---------------|----|-------------|---|

|              |               |             |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 26J          | BR            | -           |
| 92J          | Y             | -           |
| 93J          | G             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M31          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|                 |                   |
|-----------------|-------------------|
| Connector No.   | M76               |
| Connector Name  | COMBINATION METER |
| Connector Color | WHITE             |



|              |               |             |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 24           | BR            | WASHER SW   |

|                 |                  |
|-----------------|------------------|
| Connector No.   | M68              |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | BROWN            |



|              |               |             |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 3R           | V             | -           |
| 14R          | W             | -           |

|                 |                  |
|-----------------|------------------|
| Connector No.   | M44              |
| Connector Name  | FUSE BLOCK (J/B) |
| Connector Color | WHITE            |



|              |               |             |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 8P           | LA/BR         | -           |
| 10P          | LG            | -           |

AALIA2206GB

# REAR WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | E82                       |
| Connector Name  | WASHER FLUID LEVEL SWITCH |
| Connector Color | WHITE                     |



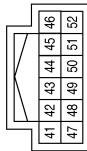
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | BR            | -           |
| 2            | B             | -           |

|                 |                             |
|-----------------|-----------------------------|
| Connector No.   | E41                         |
| Connector Name  | FRONT AND REAR WASHER MOTOR |
| Connector Color | BLACK                       |



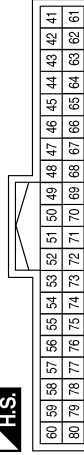
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | -           |
| 2            | L             | -           |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | M77               |
| Connector Name  | COMBINATION METER |
| Connector Color | WHITE             |



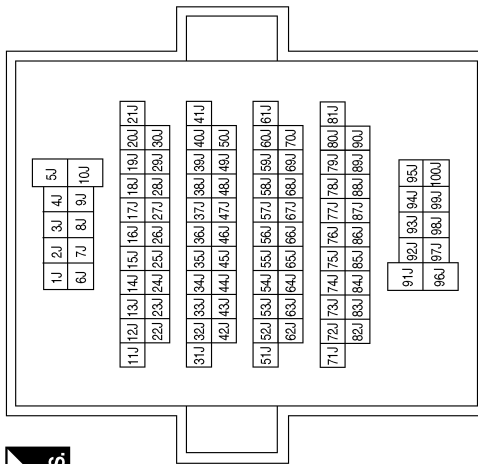
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 46           | LA/BR         | IGN         |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | B16                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | GREEN                     |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 26J          | BR            | -           |
| 92J          | LG            | -           |
| 93J          | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E152         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name     |
|--------------|---------------|-----------------|
| 55           | LA/G          | IRR AUTOSTOP SW |

AALIA2914GB

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# REAR WIPER AND WASHER SYSTEM

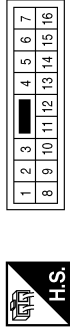
< WIRING DIAGRAM >

|                 |              |
|-----------------|--------------|
| Connector No.   | B54          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B47          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



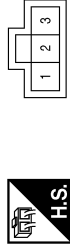
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 8            | LA/G          | -           |
| 9            | LA/R          | -           |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | B23                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | GRAY                      |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 147          | LA/R          | 0 RR WIPER  |

|                 |                  |
|-----------------|------------------|
| Connector No.   | D506             |
| Connector Name  | REAR WIPER MOTOR |
| Connector Color | WHITE            |



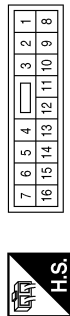
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | -           |
| 2            | G             | -           |
| 3            | B             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D505         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D502         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 8            | G             | -           |
| 9            | GR            | -           |

AALIA22086B

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

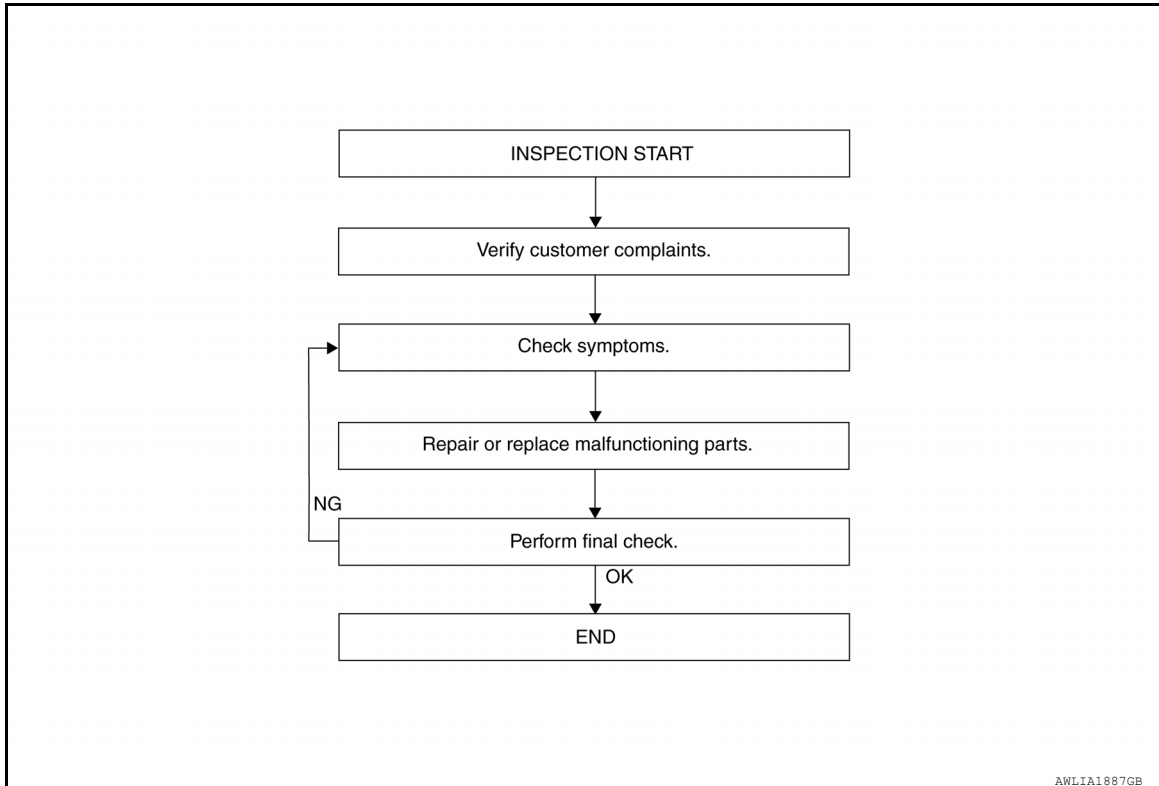
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000011280389

WORK FLOW



DETAILED FLOW

#### 1. REVIEW CUSTOMER COMPLAINT

Review customer complaint. Try to obtain detailed information about the conditions when the symptom occurs.

>> GO TO 2.

#### 2. VERIFY THE SYMPTOM

Verify the symptom by performing an operational check. Refer to [WW-8. "FRONT WIPER AND WASHER SYSTEM : System Description"](#).

>> GO TO 3.

#### 3. PERFORM TROUBLE DIAGNOSIS BY SYMPTOM

Diagnose the vehicle by performing the appropriate trouble diagnosis. Refer to [WW-48. "Symptom Table"](#).

>> GO TO 4.

#### 4. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the specific parts.

>> GO TO 5.

#### 5. FINAL CHECK

## DIAGNOSIS AND REPAIR WORKFLOW

### < BASIC INSPECTION >

---

Perform a final inspection of the system.

Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 2.



# WIPER AND WASHER FUSE

< DTC/CIRCUIT DIAGNOSIS >

## DTC/CIRCUIT DIAGNOSIS

### WIPER AND WASHER FUSE

#### Description

INFOID:0000000011280390

| Component                   | Capacity | Fuse No. | Location         |
|-----------------------------|----------|----------|------------------|
| Front wiper motor           | 30A      | 43       | IPDM E/R         |
| Front and rear washer motor | 15A      | 33       | Fuse block (J/B) |

#### Diagnosis Procedure

INFOID:0000000011280391

#### 1. CHECK FUSES

Check that the following fuses are not blown:

| Component                   | Capacity | Fuse No. | Location         |
|-----------------------------|----------|----------|------------------|
| Front wiper motor           | 30A      | 43       | IPDM E/R         |
| Front and rear washer motor | 15A      | 33       | Fuse block (J/B) |

#### Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.
- NO >> Inspection End.

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# FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR LO CIRCUIT

### Component Function Check

INFOID:000000011280392

#### 1. CHECK FRONT WIPER LO OPERATION

##### ⓐ CONSULT ACTIVE TEST

1. Select "FRONT WIPER" in "Active Test" of "IPDM E/R".
2. Check front wiper operation.

**LO** : Front wiper (LO) operation

**OFF** : Front wiper OFF

##### Is the inspection result normal?

- YES >> Front wiper motor LO circuit is normal.  
NO >> Refer to [WW-34, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000011280393

Regarding Wiring Diagram information, refer to [WW-20, "Wiring Diagram"](#).

#### 1. CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuse is not blown:

| Component         | Capacity | Fuse No. | Location |
|-------------------|----------|----------|----------|
| Front wiper motor | 30A      | 43       | IPDM E/R |

##### Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.  
NO >> GO TO 2.

#### 2. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Select "FRONT WIPER" in "Active Test" of "IPDM E/R".
3. While performing the active test, check voltage between IPDM E/R harness connector and ground.

| IPDM E/R  |          | Ground | FRONT WIPER | Voltage (Approx.) |
|-----------|----------|--------|-------------|-------------------|
| Connector | Terminal |        |             |                   |
| E121      | 48       |        | LO          | Battery voltage   |
|           |          |        | OFF         | 0V                |

##### Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace IPDM E/R. Refer to [PCS-40, "Removal and Installation"](#).

#### 3. CHECK FRONT WIPER MOTOR (LO) OPEN CIRCUIT

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

| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E121      | 48       | E20               | 3        | Yes        |

##### Is the inspection result normal?

- YES >> Replace front wiper motor. Refer to [WW-69, "Removal and Installation"](#).

# FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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NO >> Repair or replace harness.

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# FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR HI CIRCUIT

### Component Function Check

INFOID:000000011280394

#### 1. CHECK FRONT WIPER HI OPERATION

##### Ⓟ CONSULT ACTIVE TEST

1. Select "FRONT WIPER" in "Active Test" of "IPDM E/R".
2. Check front wiper operation.

**HI** : Front wiper (HI) operation

**OFF** : Front wiper OFF

##### Is the inspection result normal?

- YES >> Front wiper motor HI circuit is normal.  
NO >> Refer to [WW-36, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000011280395

Regarding Wiring Diagram information, refer to [WW-20, "Wiring Diagram"](#).

#### 1. CHECK FRONT WIPER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuse is not blown:

| Component         | Capacity | Fuse No. | Location |
|-------------------|----------|----------|----------|
| Front wiper motor | 30A      | 43       | IPDM E/R |

##### Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.  
NO >> GO TO 2.

#### 2. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Select "FRONT WIPER" in "Active Test" of "IPDM E/R".
3. While performing the active test, check voltage between IPDM E/R harness connector and ground.

| IPDM E/R  |          | Ground | FRONT WIPER | Voltage (Approx.) |
|-----------|----------|--------|-------------|-------------------|
| Connector | Terminal |        |             |                   |
| E121      | 45       |        | HI          | Battery voltage   |
|           |          |        | OFF         | 0V                |

##### Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace IPDM E/R. Refer to [PCS-40, "Removal and Installation"](#).

#### 3. CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

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

| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E121      | 45       | E20               | 5        | Yes        |

##### Is the inspection result normal?

- YES >> Replace front wiper motor. Refer to [WW-69, "Removal and Installation"](#).

# FRONT WIPER MOTOR HI CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

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NO >> Repair or replace harness.

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# FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER AUTO STOP SIGNAL CIRCUIT

### Component Function Check

INFOID:000000011280396

#### 1. CHECK FRONT WIPER (AUTO STOP) SIGNAL

1. Select "FR WIPER STOP" in "Data Monitor" of "BCM (WIPER)".
2. Operate the front wiper.
3. Check that FR WIPER STOP changes from ON to OFF according to the wiper position.

| Data monitor  | Condition         |                      | Status |
|---------------|-------------------|----------------------|--------|
| FR WIPER STOP | Front wiper motor | Stop position        | ON     |
|               |                   | Except stop position | OFF    |

Is the inspection result normal?

- YES >> Front wiper auto stop signal circuit is normal.  
 NO >> Refer to [WW-38, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000011280397

Regarding Wiring Diagram information, refer to [WW-20, "Wiring Diagram"](#).

#### 1. CHECK FRONT WIPER MOTOR (AUTO STOP) OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

| IPDM E/R  |          | Ground | FRONT WIPER          | Voltage (Approx.) |
|-----------|----------|--------|----------------------|-------------------|
| Connector | Terminal |        | Except stop position | Battery voltage   |
| E120      | 33       |        | Stop position        | 0 V               |

Is the inspection result normal?

- YES >> Check for intermittent failure.  
 NO >> GO TO 2.

#### 2. CHECK FRONT WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

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

| IPDM E/R  |          | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        | No         |
| E120      | 33       |        | No         |

Is the inspection result normal?

- YES >> Repair or replace harness.  
 NO >> GO TO 3.

#### 3. CHECK FRONT WIPER MOTOR (AUTO STOP) CIRCUIT CONTINUITY

Check continuity between IPDM E/R harness connector and front wiper motor harness connector.

| IPDM E/R  |          | Front wiper motor |          | Continuity |
|-----------|----------|-------------------|----------|------------|
| Connector | Terminal | Connector         | Terminal |            |
| E120      | 33       | E20               | 4        | Yes        |

Is the inspection result normal?

## FRONT WIPER AUTO STOP SIGNAL CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

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YES >> Replace front wiper motor. Refer to [WW-69. "Removal and Installation"](#).  
NO >> Repair or replace harness.

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# FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR GROUND CIRCUIT

### Diagnosis Procedure

INFOID:000000011280398

Regarding Wiring Diagram information, refer to [WW-20. "Wiring Diagram"](#).

### 1. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect front wiper motor.
3. Check continuity between front wiper motor harness connector and ground.

| Front wiper motor |          | Ground | Continuity |
|-------------------|----------|--------|------------|
| Connector         | Terminal |        |            |
| E20               | 2        |        | Yes        |

Is the inspection result normal?

- YES >> Front wiper motor ground circuit is normal.  
NO >> Repair or replace harness.



# WASHER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## WASHER MOTOR CIRCUIT

### Diagnosis Procedure

INFOID:000000011280399

Regarding Wiring Diagram information, refer to [WW-20, "Wiring Diagram"](#).

#### 1. CHECK FRONT AND REAR WASHER MOTOR FUSE

1. Turn the ignition switch OFF.
2. Check that the following fuse is not blown:

| Unit                        | Location         | Fuse No. | Capacity |
|-----------------------------|------------------|----------|----------|
| Front and rear washer motor | Fuse block (J/B) | 33       | 15A      |

##### Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.  
NO >> GO TO 2.

#### 2. CHECK FRONT AND REAR WASHER MOTOR POWER SUPPLY

1. Disconnect front and rear washer motor.
2. Turn ignition switch ON.
3. Check voltage between front and rear washer motor harness connector and ground.

| Front and rear washer motor |          | Ground | Voltage (Approx.) |
|-----------------------------|----------|--------|-------------------|
| Connector                   | Terminal |        | Battery voltage   |
| E41                         | 1        |        |                   |

##### Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Repair or replace the harness or connectors.

#### 3. CHECK FRONT AND REAR WASHER MOTOR CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect combination switch (wiper and washer switch).
3. Check continuity between combination switch (wiper and washer switch) harness connector and front and rear washer motor.

| Combination switch (wiper and washer switch) |          | Front and rear washer motor |          | Continuity |
|--|----------|-----------------------------|----------|------------|
| Connector                                    | Terminal | Connector                   | Terminal |            |
| M28  | 11       | E41                         | 1        | Yes        |

##### Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Repair or replace the harness or connectors.

#### 4. CHECK WIPER AND WASHER SWITCH GROUND CIRCUIT

Check continuity between combination switch (wiper and washer switch) harness connector and ground.

| Combination switch (wiper and washer switch) |          | Ground | Continuity |
|--|----------|--------|------------|
| Connector                                    | Terminal |        | Yes        |
| M28  | 16       |        |            |

##### Is the inspection result normal?

- YES >> GO TO 5.  
NO >> Repair or replace the harness or connectors.

#### 5. CHECK WIPER AND WASHER SWITCH

Check wiper and washer switch. Refer to [WW-43, "Component Inspection"](#).

## WASHER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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Is the inspection result normal?

YES >> Replace front and rear washer motor. Refer to [WW-56, "Removal and Installation"](#).

NO >> Replace wiper and washer switch. Refer to [BCS-76, "Removal and Installation"](#).

# WASHER SWITCH

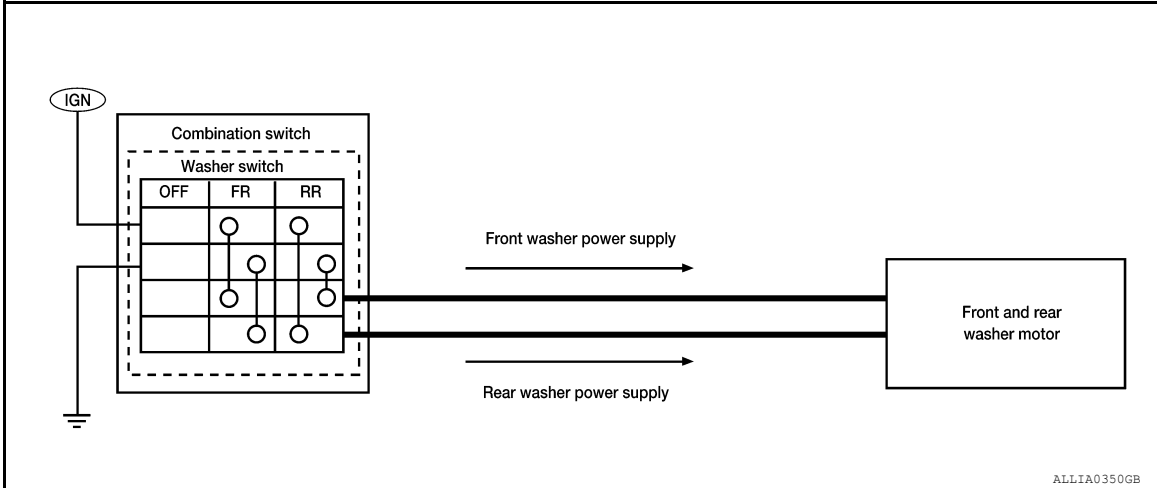
< DTC/CIRCUIT DIAGNOSIS >

## WASHER SWITCH

### Description

INFOID:000000011280400

- Washer switch is integrated with the combination switch.
- Combination switch (wiper and washer switch) switches polarity between front washer operating and rear washer operating to supply power and ground to the front and rear washer motor.



### Component Inspection

INFOID:000000011280401

#### 1. CHECK FRONT WASHER SWITCH

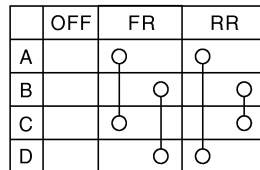
1. Turn the ignition switch OFF.
2. Disconnect combination switch (wiper and washer switch).
3. Check continuity between the combination switch (wiper and washer switch) terminals.

A: Terminal 4

B: Terminal 6

C: Terminal 3

D: Terminal 1



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| Combination switch (wiper and washer switch) |   | Condition              | Continuity |
|--|---|------------------------|------------|
| Terminal                                     |   |                        |            |
| 1  | 6 | Front washer switch ON | Yes        |
| 3  | 4 |                        |            |

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace combination switch (wiper and washer switch). Refer to [BCS-76, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-136, "Removal and Installation"](#) (without Intelligent Key system).

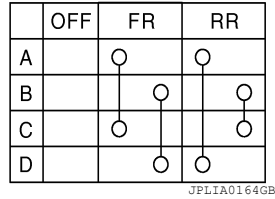
#### 2. CHECK REAR WASHER SWITCH

1. Check continuity between the combination switch (wiper and washer switch) terminals.

# WASHER SWITCH

## < DTC/CIRCUIT DIAGNOSIS >

- A: Terminal 4
- B: Terminal 6
- C: Terminal 3
  
- D: Terminal 1



| Combination switch (wiper and washer switch) |   | Condition             | Continuity |
|--|---|-----------------------|------------|
| Terminal                                     |   |                       |            |
| 1  | 4 | Rear washer switch ON | Yes        |
| 6  | 3 |                       |            |

**Is the inspection result normal?**

- YES >> Wiper and washer switch is normal.
- NO >> Replace combination switch (wiper and washer switch). Refer to [BCS-76, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-136, "Removal and Installation"](#) (without Intelligent Key system).

# REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## REAR WIPER MOTOR CIRCUIT

### Component Function Check

INFOID:000000011280402

#### 1. CHECK REAR WIPER ON OPERATION

##### CONSULT ACTIVE TEST

1. Select "RR WIPER" in "Active Test" of "BCM".
2. While operating the test item, check rear wiper operation.

**ON** : Rear wiper ON operation

**OFF** : Stop the rear wiper.

##### Is rear wiper operation normal?

- YES >> Rear wiper motor circuit is normal.  
NO >> Refer to [WW-45, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000011280403

Regarding Wiring Diagram information, refer to [WW-26, "Wiring Diagram"](#).

#### 1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

##### CONSULT ACTIVE TEST

1. Turn the ignition switch OFF.
2. Disconnect rear wiper motor.
3. Turn the ignition switch ON.
4. Select "RR WIPER" in "Active Test" of "BCM".
5. While operating the test item, check voltage between BCM harness connector and ground.

| BCM       |          | Ground | Test item  | Voltage (Approx.) |
|-----------|----------|--------|------------|-------------------|
| Connector | Terminal |        | REAR WIPER |                   |
| B16       | 55       | Ground | ON         | Battery voltage   |
|           |          |        | OFF        | 0V                |

##### Is the inspection result normal?

- YES >> GO TO 2.  
NO >> GO TO 3.

#### 2. CHECK REAR WIPER MOTOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Check continuity between rear wiper motor harness connector and ground.

| Rear wiper motor |          | Ground | Continuity |
|------------------|----------|--------|------------|
| Connector        | Terminal |        | Yes        |
| D506             | 3        | Ground | Yes        |

##### Is the inspection result normal?

- YES >> Replace rear wiper motor. Refer to [WW-73, "Removal and Installation"](#).  
NO >> Repair or replace harness.

#### 3. CHECK REAR WIPER MOTOR OPEN CIRCUIT

Check continuity between BCM harness connector and rear wiper motor harness connector.

## REAR WIPER MOTOR CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

| BCM       |          | Rear wiper motor |          | Continuity |
|-----------|----------|------------------|----------|------------|
| Connector | Terminal | Connector        | Terminal |            |
| B23       | 147      | D506             | 1        | Yes        |

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

### 4. CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

| BCM       |          | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| B16       | 55       |        | No         |

#### Is the inspection result normal?

YES >> Repair or replace harness.

NO >> Replace BCM. Refer to [BCS-75, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-135, "Removal and Installation"](#) (without Intelligent Key system).

# REAR WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## REAR WIPER AUTO STOP SIGNAL CIRCUIT

### Component Function Check

INFOID:000000011280404

#### 1. CHECK REAR WIPER (AUTO STOP) OPERATION

##### CONSULT DATA MONITOR

1. Select "WIPER" in "Data Monitor" of "BCM".
2. Operate the rear wiper.
3. Check that RR WIPER STOP changes to ON and OFF linked with the wiper operation.

| Monitor item  | Condition        |                      | Monitor status |
|---------------|------------------|----------------------|----------------|
| RR WIPER STOP | Rear wiper motor | Stop position        | ON             |
|               |                  | Except stop position | OFF            |

##### Is the inspection result normal?

- YES >> Rear wiper auto stop signal circuit is normal.  
NO >> Refer to [WW-47, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000011280405

Regarding Wiring Diagram information, refer to [WW-26, "Wiring Diagram"](#).

#### 1. CHECK REAR WIPER MOTOR AUTO STOP CIRCUITS FOR OPEN

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

| BCM       |          | Rear wiper motor |          | Continuity |
|-----------|----------|------------------|----------|------------|
| Connector | Terminal | Connector        | Terminal |            |
| B16       | 55       | D506             | 2        | Yes        |

##### Is inspection result normal?

- YES >> GO TO 2.  
NO >> Repair or replace harness.

#### 2. CHECK AUTO STOP CIRCUITS FOR SHORT TO GROUND

Check continuity between BCM harness connector terminal and ground.

| BCM       |          | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal |        |            |
| B16       | 55       |        | No         |

##### Is inspection result normal?

- YES >> Replace BCM. Refer to [BCS-75, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-135, "Removal and Installation"](#) (with Intelligent Key system).  
NO >> Repair or replace harness.

# WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### WIPER AND WASHER SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000011280406

**CAUTION:**

Perform the “Self Diagnostic Result” with CONSULT before performing the diagnosis by symptom. Perform the diagnosis by DTC if DTC is detected.

| Symptom                            |            | Possible malfunction  | Reference  |
|------------------------------------|------------|---|--|
| Front wiper does not operate in... | HI only    | <ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between combination switch (wiper and washer switch) and BCM</li> <li>BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|                                    |            | <ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>   | Front wiper motor (HI) circuit<br>Refer to <a href="#">WW-36, "Component Function Check"</a> .   |
|                                    |            | Front wiper request signal (IPDM E/R)   | Check “FR WIP REQ” in “Data Monitor” of “IPDM E/R”.<br>Refer to <a href="#">PCS-11, "CONSULT Function (IPDM E/R)"</a> .  |
|                                    | LO and INT | <ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between combination switch (wiper and washer switch) and BCM</li> <li>BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|                                    |            | <ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>   | Front wiper motor (LO) circuit<br>Refer to <a href="#">WW-34, "Component Function Check"</a> .   |
|                                    |            | Front wiper request signal (IPDM E/R)   | Check “FR WIP REQ” in “Data Monitor” of “IPDM E/R”.<br>Refer to <a href="#">PCS-11, "CONSULT Function (IPDM E/R)"</a> .  |
|                                    | INT only   | <ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between combination switch (wiper and washer switch) and BCM</li> <li>BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|                                    |            | Front wiper request signal (IPDM E/R)   | Check “FR WIP REQ” in “Data Monitor” of “IPDM E/R”.<br>Refer to <a href="#">PCS-11, "CONSULT Function (IPDM E/R)"</a> .  |
|                                    | Any mode   | —   | Refer to <a href="#">WW-51, "Diagnosis Procedure"</a> .  |



## WIPER AND WASHER SYSTEM SYMPTOMS

### < SYMPTOM DIAGNOSIS >

| Symptom                                    |   | Possible malfunction  | Reference  |
|--|---|---|--|
| Front wiper does not stop in...            | Any mode  | Front wiper auto stop signal (IPDM E/R)   | Refer to <a href="#">WW-38, "Component Function Check"</a> .   |
|  |   | <ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• BCM</li> </ul>   | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
| Front wiper operates abnormally because... | Intermittent adjustments cannot be made.  | <ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|  | Wiper/washer will not operate together.   | <ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|  | Wipers will not return to stop position (repeatedly operates for 10 seconds and then stops for 20 seconds. Wipers then stop operating). | <ul style="list-style-type: none"> <li>• IPDM E/R</li> <li>• Harness between IPDM E/R and front wiper motor</li> <li>• Front wiper motor</li> </ul>   | Front wiper auto stop signal circuit<br>Refer to <a href="#">WW-38, "Component Function Check"</a> .   |
| Rear wiper does not operate.               | ON only   | <ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|  | INT only  | <ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|  | ON and INT  | <ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|  |   | <ul style="list-style-type: none"> <li>• BCM</li> <li>• Harness between rear wiper motor and BCM</li> <li>• Harness between rear wiper motor and ground</li> <li>• Rear wiper motor</li> </ul>  | Rear wiper motor circuit<br>Refer to <a href="#">WW-45, "Diagnosis Procedure"</a> .  |

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## WIPER AND WASHER SYSTEM SYMPTOMS

### < SYMPTOM DIAGNOSIS >

| Symptom   |  | Possible malfunction  | Reference  |
|---|--|---|--|
| Rear wiper does not stop.   | ON only  | <ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>BCM</li> </ul>   | Rear wiper motor circuit<br>Refer to <a href="#">WW-45, "Diagnosis Procedure"</a> .  |
|   | INT only   | <ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>BCM</li> </ul>   | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
| Rear wiper does not operate normally.                                     | Wiper is not linked to the washer operation.   | <ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between rear wiper motor and BCM</li> <li>BCM</li> </ul>                             | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|   |  | BCM   | —  |
|   | Rear wiper does not return to the Stop position (Stops after a five-second operation). | <ul style="list-style-type: none"> <li>BCM</li> <li>Harness between rear wiper motor and BCM</li> <li>Rear wiper motor</li> </ul>   | Rear wiper auto stop signal circuit<br>Refer to <a href="#">WW-47, "Diagnosis Procedure"</a> .   |
| Front and rear washer motor does not operate when the washing windshield. | Front and rear washer motor does not operate when the washing windshield.              | <ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between combination switch (wiper and washer switch) and BCM</li> <li>BCM</li> </ul> | Combination switch (wiper and washer switch)<br>Refer to <a href="#">BCS-73, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-133, "Symptom Table"</a> (without Intelligent Key system). |
|   |  | <ul style="list-style-type: none"> <li>Harness between rear combination switch (wiper and washer switch) and front and rear washer motor.</li> <li>Front and rear washer motor</li> </ul> | Front and rear washer motor circuit<br>Refer to <a href="#">WW-41, "Diagnosis Procedure"</a> .   |

# FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

## FRONT WIPER DOES NOT OPERATE

### Description

INFOID:0000000011280407

The front wiper does not operate under any operation conditions.

### Diagnosis Procedure

INFOID:0000000011280408

Regarding Wiring Diagram information, refer to [WW-20, "Wiring Diagram"](#).

## 1. CHECK WIPER RELAY OPERATION

### CONSULT ACTIVE TEST

1. Select "FR WIPER" in "Active Test" of "BCM (WIPER)".
2. Check front wiper operation.

- LO** : Front wiper LO operation
- HI** : Front wiper HI operation
- OFF** : Front wiper stop

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> GO TO 2.

## 2. CHECK FRONT WIPER MOTOR FUSE

Refer to [WW-33, "Diagnosis Procedure"](#).

Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.
- NO >> GO TO 3.

## 3. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

Refer to [WW-40, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace harness.

## 4. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Select "FRONT WIPER" in "Active Test" of "IPDM E/R" with CONSULT.
3. Check voltage between IPDM E/R harness connector and ground while wipers are operating.

| IPDM E/R  |          | Ground | FRONT WIPER | Voltage (Approx.) |
|-----------|----------|--------|-------------|-------------------|
| Connector | Terminal |        |             |                   |
| E121      | 48       |        | LO          | Battery voltage   |
|           |          |        | OFF         | 0 V               |
|           | 45       |        | HI          | Battery voltage   |
|           |          |        | OFF         | 0 V               |

Is the inspection result normal?

- YES >> Replace front wiper motor. Refer to [WW-69, "Removal and Installation"](#).
- NO >> Replace IPDM E/R. Refer to [PCS-40, "Removal and Installation"](#).

## 5. CHECK FRONT WIPER REQUEST SIGNAL INPUT

1. Select "FR WIP REQ" in "Data Monitor" of "IPDM E/R" with CONSULT.
2. Switch the front wiper switch to HI and LO.
3. Check the status of FR WIP REQ while operating the switch.

# FRONT WIPER DOES NOT OPERATE

## < SYMPTOM DIAGNOSIS >

---

| Data monitor | Condition              | Status |
|--------------|------------------------|--------|
| FR WIP REQ   | Front wiper switch OFF | STOP   |
|              | Front wiper switch LO  | LOW    |
|              | Front wiper switch HI  | HI     |

---

### Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-40. "Removal and Installation"](#) .

NO >> GO TO 6.

## **6. CHECK COMBINATION SWITCH (WIPER AND WASHER SWITCH)**

---

Check combination switch (wiper and washer switch). Refer to [WW-43. "Component Inspection"](#).

### Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-75. "Removal and Installation"](#) (with Intelligent Key system) or [BCS-135. "Removal and Installation"](#) (without Intelligent Key system).

NO >> Repair or replace the applicable parts.

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

## NORMAL OPERATING CONDITION

### Description

INFOID:0000000011280409

#### FRONT WIPER PROTECTION FUNCTION

IPDM E/R detects front wiper stop position by a front wiper stop position signal.

When a front wiper stop position signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 seconds activation and 20 seconds stop.

| Ignition switch | Front wiper switch | Front wiper stop position signal   |
|-----------------|--------------------|--|
| ON              | OFF                | The front wiper stop position signal (stop position) cannot be input for 10 seconds. |
|                 | ON                 | The front wiper stop position signal does not change for 10 seconds.                 |

#### NOTE:

This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

#### REAR WIPER MOTOR PROTECTION FUNCTION

- BCM may stop rear wiper to protect the rear wiper motor when the rear wiper is stopped for 5 seconds or more due to a snowfall.
- Rear wiper operates normally one minute after the obstacles are removed with rear wiper OFF.

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WW

# WASHER TANK

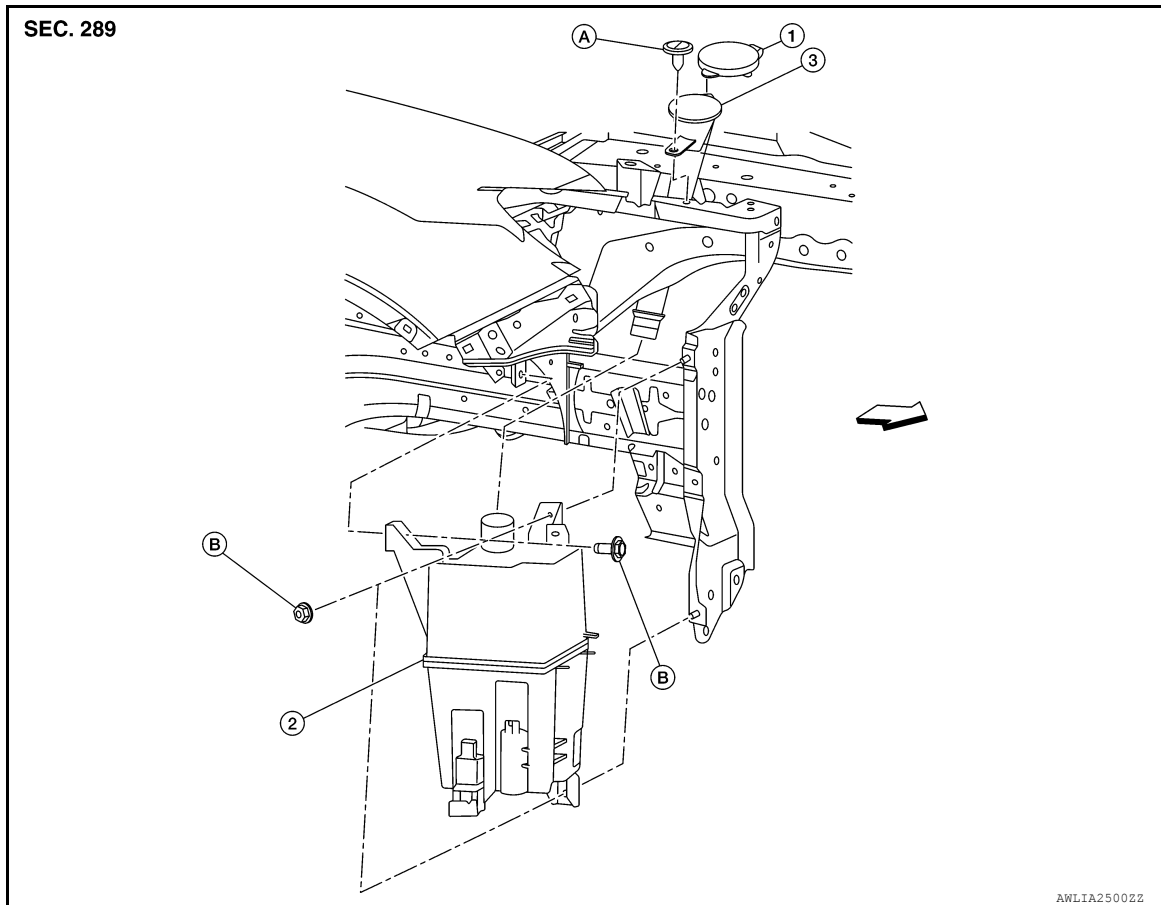
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### WASHER TANK

Exploded View

INFOID:000000011280410



1. Cap  
A. Clip

2. Washer tank  
B. Refer to INSTALLATION

3. Washer tank inlet  
⇨ Front

## Removal and Installation

INFOID:000000011280411

### REMOVAL

1. Drain washer fluid.
2. Using a suitable tool release washer tank inlet clip and remove washer tank inlet.
3. Remove front over fender (RH). Refer to [EXT-30, "FRONT OVER FENDER : Removal and Installation"](#).
4. Remove wind deflector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
5. Remove engine side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
6. Partially remove front fender protector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
7. Disconnect harness connector from rear view camera washer motor then front and rear washer motor.
8. Disconnect washer level switch harness connector (if equipped).
9. Disconnect front and rear washer motor tubes and the rear view camera washer motor tube (if equipped).
10. Remove washer tank nuts and bolt and remove the washer tank.

### INSTALLATION

Installation is in the reverse order of removal.

**CAUTION:**

# WASHER TANK

## < REMOVAL AND INSTALLATION >

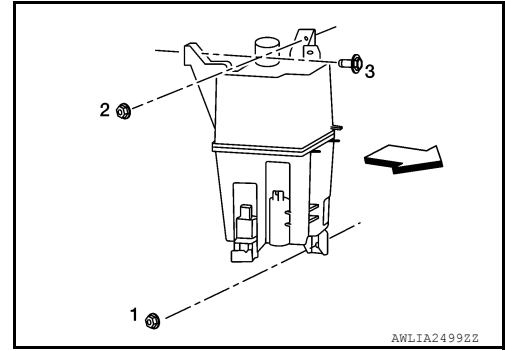
- Add water up to the top of washer tank inlet after installing. Check that no leaks exist.
- Fill washer tank with specified amount of fluid. Refer to [WW-78, "Specifications"](#).
- Tighten the washer tank nuts and bolt to specification in the sequence shown.

⇐: Front

**Nuts and bolt : 4.5 N·m (0.46 kg-m, 40 in-lb)**

**USA Production : No. 1, 2, 3**

**Korea Production : No. 2, 1, 3**



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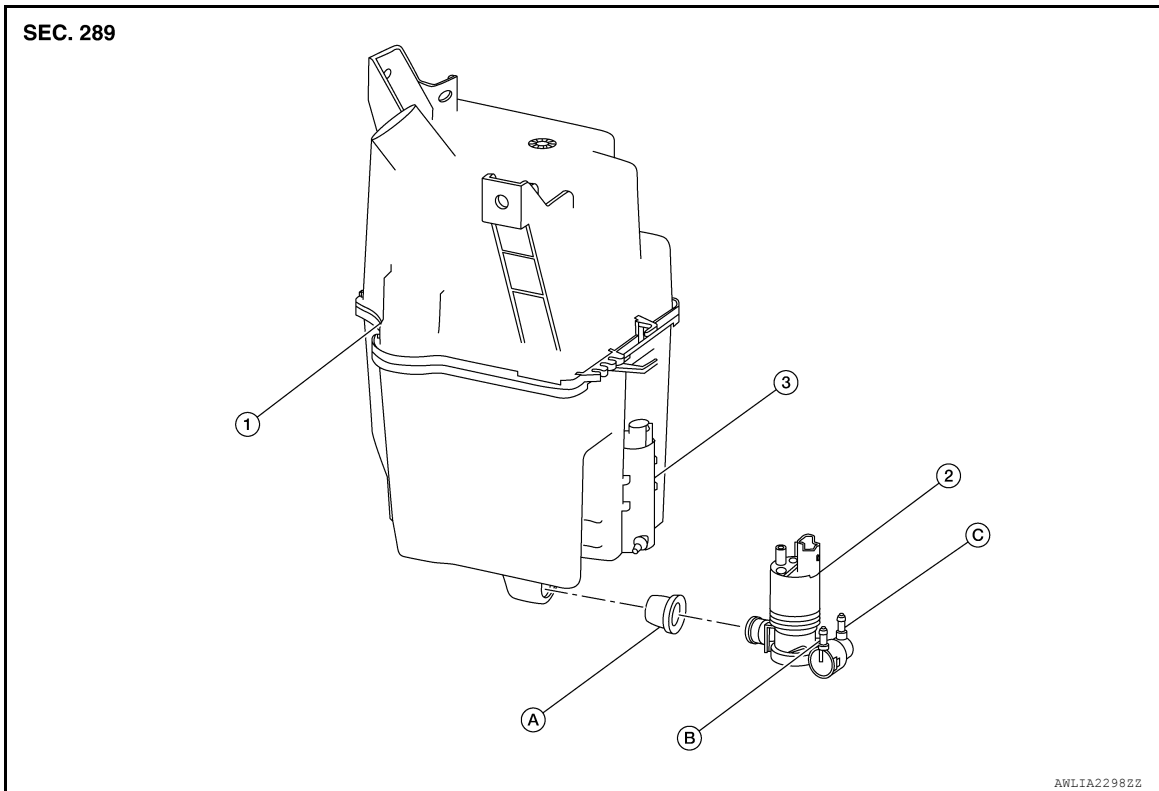
# FRONT AND REAR WASHER MOTOR

< REMOVAL AND INSTALLATION >

## FRONT AND REAR WASHER MOTOR

Exploded View

INFOID:000000011280412



- |                |                                |  |
|----------------|--------------------------------|--|
| 1. Washer tank | 2. Front and rear washer motor | 3. Rear view camera washer motor (if equipped) |
| A. Seal        | B. Rear washer outlet          | C. Front washer outlet                         |

## Removal and Installation

INFOID:000000011280413

### REMOVAL

1. Drain washer fluid.
2. Remove front over fender (RH). Refer to [EXT-30, "FRONT OVER FENDER : Removal and Installation"](#).
3. Remove wind deflector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
4. Remove engine side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
5. Partially remove front fender protector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
6. Disconnect harness connector from front and rear washer motor.
7. Disconnect front and rear washer outlet tubes.
8. Remove front and rear washer motor from washer tank.

### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Add water up to the top of washer tank inlet after installing. Check that no leaks exist.
- Fill washer tank with specified amount of fluid. Refer to [WW-78, "Specifications"](#).



# WASHER FLUID LEVEL SWITCH

< REMOVAL AND INSTALLATION >

---

## WASHER FLUID LEVEL SWITCH

### Removal and Installation

INFOID:000000011280414

The washer fluid level switch is serviced as a part of the washer tank. Refer to [WW-54. "Removal and Installation"](#).

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WW

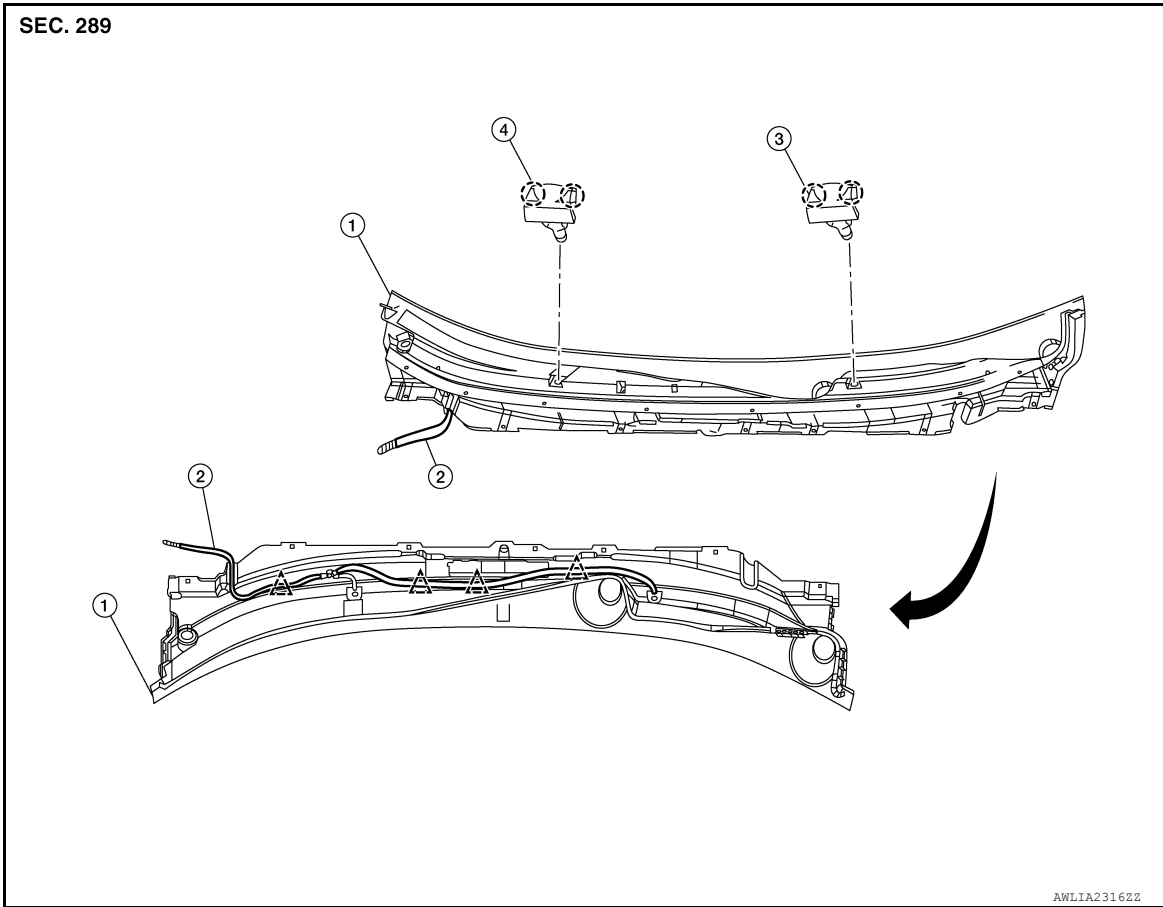
# FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## FRONT WASHER NOZZLE AND TUBE

Exploded View

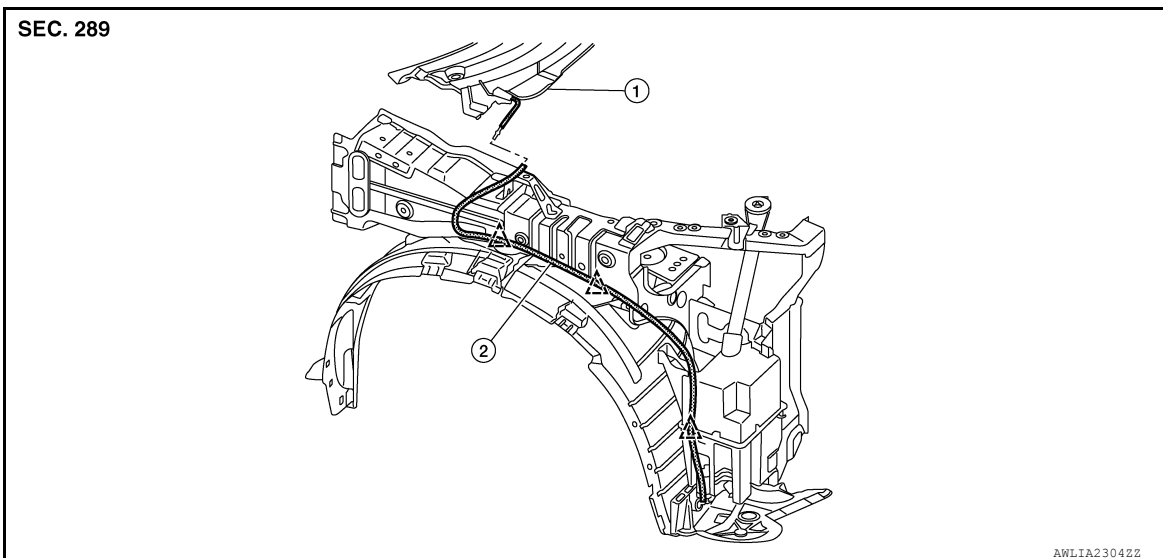
INFOID:000000011280415



- 1. Cowl top cover
  - 2. Front washer tube
  - 3. Front washer nozzle (LH)
  - 4. Front washer nozzle (RH)
- Pawl  
△ Clip

Exploded View

INFOID:000000011280416

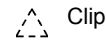


# FRONT WASHER NOZZLE AND TUBE

## < REMOVAL AND INSTALLATION >

1. Cowl top cover

2. Front washer tube



A

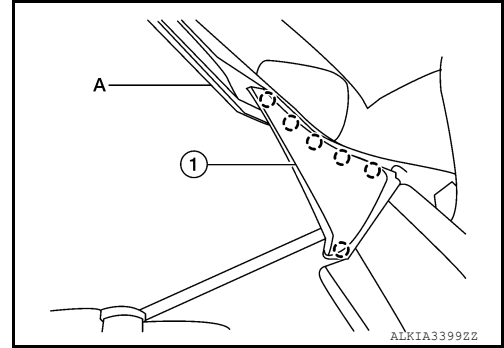
### Removal and Installation - Front Washer Nozzle

INFOID:0000000011280417

#### REMOVAL

1. Remove front wiper arms (LH/RH). Refer to [WW-62, "Removal and Installation"](#).
2. Release pawls using suitable tool (A) and remove cowl top side trim cover (1) (LH/RH).

○: Pawl



B

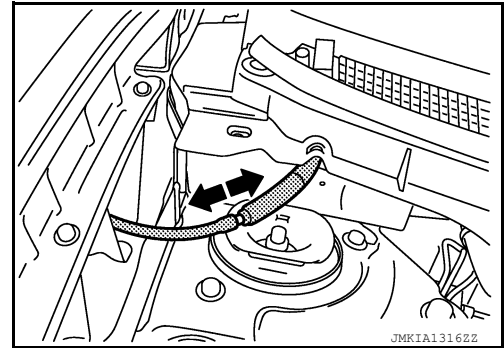
C

D

E

F

3. Disconnect front washer tube connector.



G

H

I

4. Release pawls and remove front washer nozzle (LH/RH).

#### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

Adjust the nozzle spray pattern. Refer to [WW-60, "Inspection and Adjustment"](#).

J

K

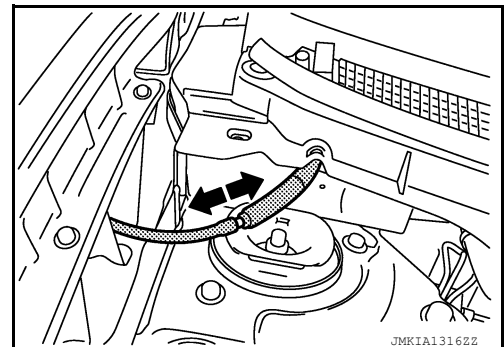
### Removal and Installation - Front Washer Tube

INFOID:0000000011280418

WW

#### REMOVAL

1. Disconnect front washer tube connector.



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2. Remove front over fender (RH). Refer to [EXT-30, "FRONT OVER FENDER : Removal and Installation"](#).
3. Remove wind deflector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
4. Remove engine side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
5. Partially remove front fender protector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
6. Unclip front washer hose and remove.

# FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## INSTALLATION

Installation is in the reverse order of removal.

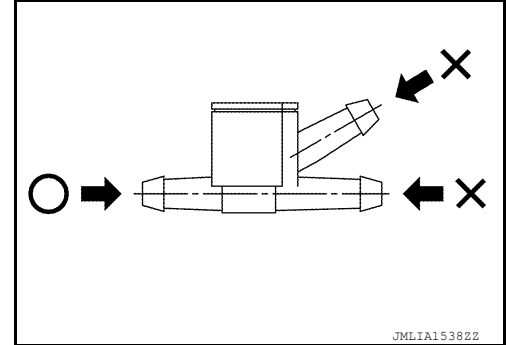
## Inspection and Adjustment

INFOID:000000011280419

## WASHER TUBE INSPECTION

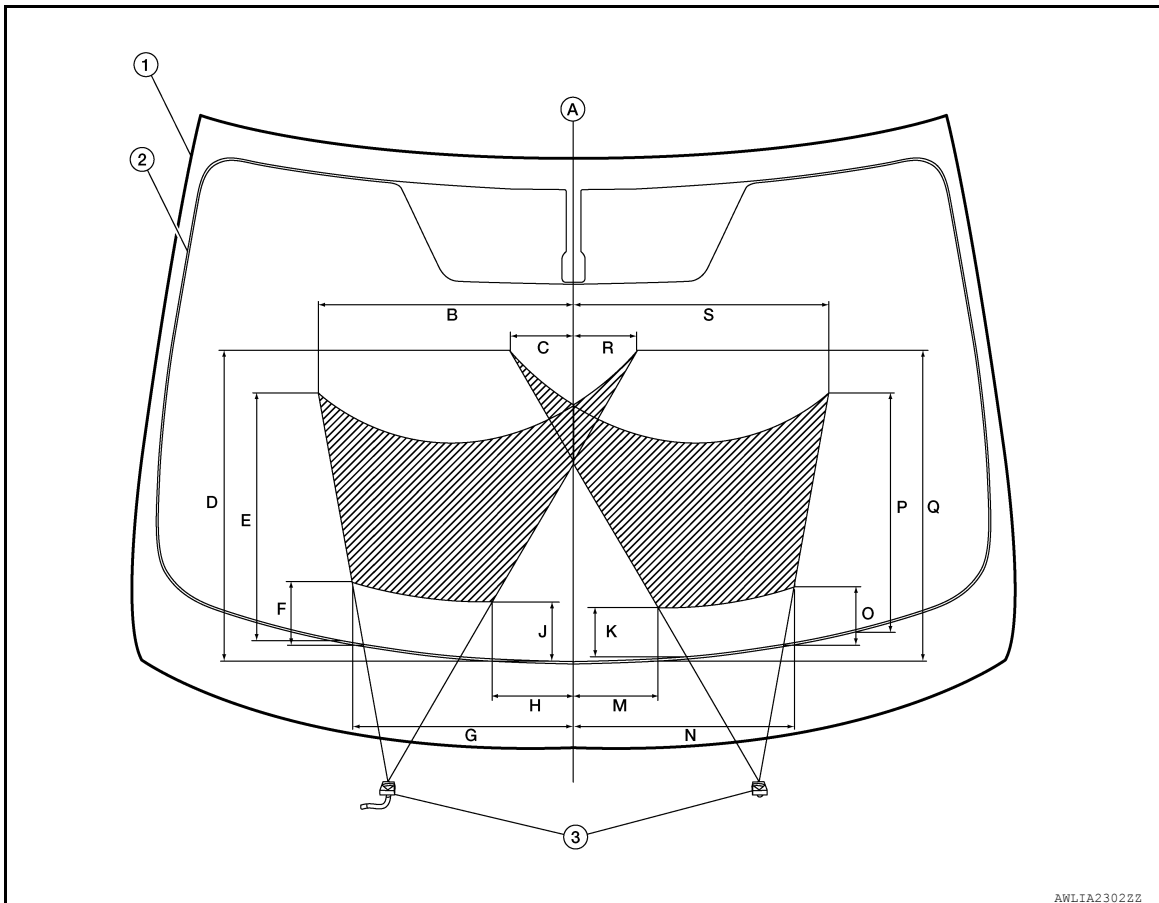
Check that air can pass through the check valve splitter by blowing into the check valve splitter and that air cannot flow in the opposite direction.

- O: Air can flow
- X: Air cannot flow



## ADJUSTMENT

If operating properly, spray positions should match the positions shown. If spray positions do not match, confirm the rear washer nozzle is properly seated and working properly. If the spray positions still do not match as shown, then replace the front washer nozzle. Refer to [WW-59. "Removal and Installation - Front Washer Nozzle"](#)



- |                      |                            |                                |
|----------------------|----------------------------|--------------------------------|
| 1. Windshield glass  | 2. Black printed area line | 3. Front washer nozzle (LH/RH) |
| A. Center line       | B. 409 mm (16.10 in)       | C. 103 mm (4.06 in)            |
| D. 497 mm (19.57 in) | E. 398 mm (15.67 in)       | F. 100 mm (3.94 in)            |

# FRONT WASHER NOZZLE AND TUBE

## < REMOVAL AND INSTALLATION >

---

G. 356 mm (14.02 in)

H. 127 mm (5.00 in)

J. 93 mm (3.66 in)

K. 80 mm (3.15 in)

M. 133 mm (5.24 in)

N. 354 mm (13.94 in)

O. 90 mm (3.54 in)

P. 380 mm (14.96 in)

Q. 496 mm (19.53 in)

R. 103 mm (4.06 in)

S. 409 mm (16.10 in)

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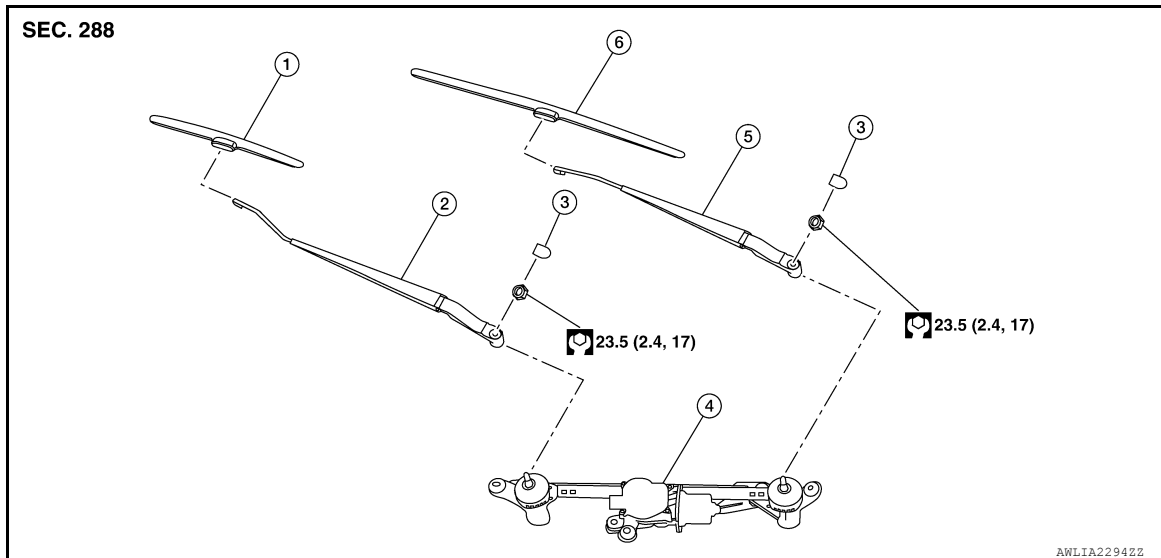
# FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

## FRONT WIPER ARM

Exploded View

INFOID:000000011280420



- |                               |                         |                           |
|-------------------------------|-------------------------|---------------------------|
| 1. Front wiper blade (RH)     | 2. Front wiper arm (RH) | 3. Front wiper arm cover  |
| 4. Front wiper drive assembly | 5. Front wiper arm (LH) | 6. Front wiper blade (LH) |

## Removal and Installation

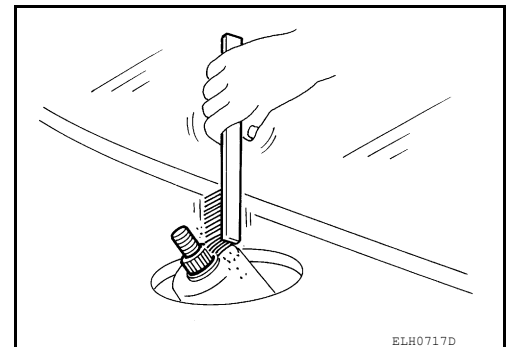
INFOID:000000011280421

### REMOVAL

1. Move front wiper into the service position by turning the ignition switch ON, then quickly push the wiper washer switch to the mist position two times within 0.5 seconds.
2. Turn the ignition switch OFF.
3. Remove front wiper arm covers.
4. Remove nuts and remove front wiper arms.

### INSTALLATION

1. Clean wiper arm mount as shown in the figure to prevent nuts from being loosened.



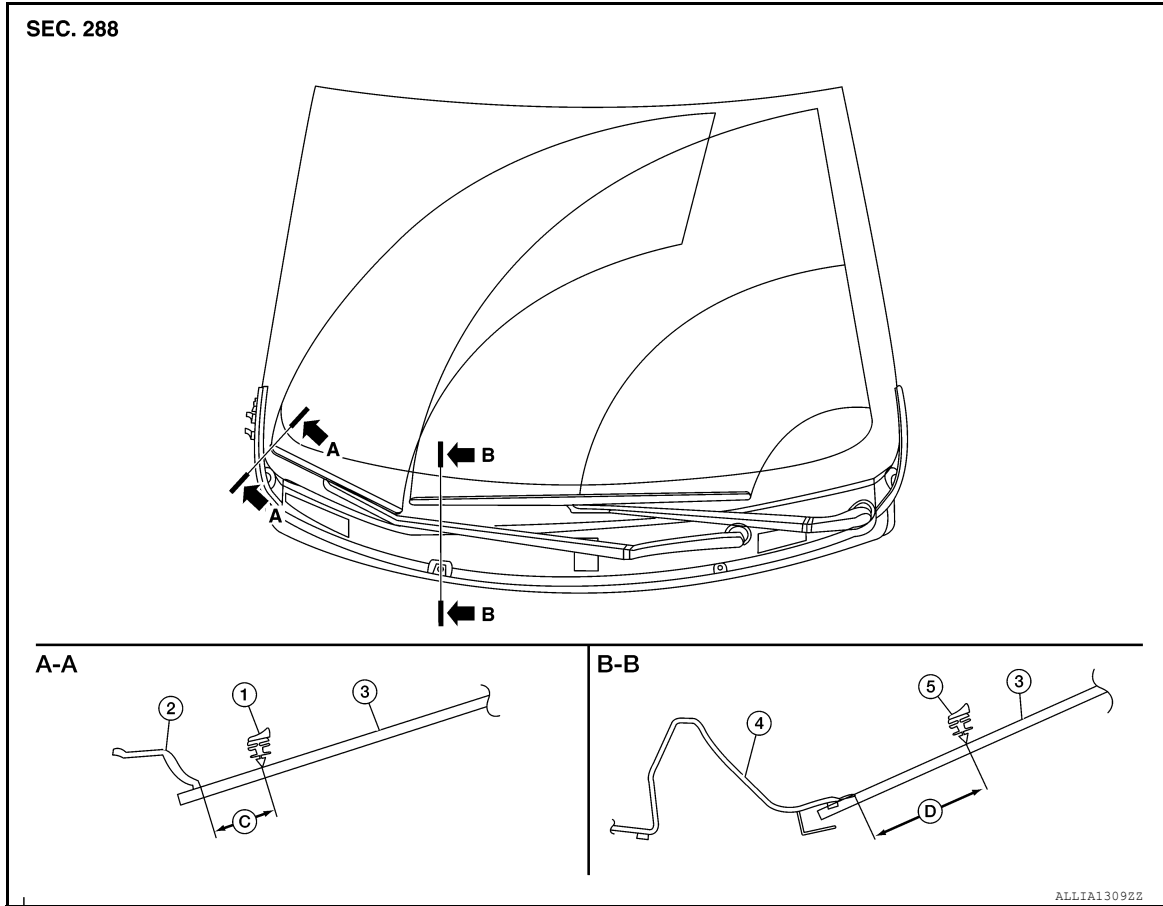
2. Move front wiper into the service position by turning the ignition switch ON, then quickly push the wiper washer switch to the mist position two times within 0.5 seconds.
3. Turn the ignition switch OFF.
4. Adjust front wiper blade position. Refer to [WW-63. "Adjustment"](#).
5. Install front wiper arm by tightening the nuts.
6. Install front wiper arm covers.
7. Check that the front wiper blades stop at the specified position.

# FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

## Adjustment

INFOID:000000011280422



- |   |                      |  |
|---|----------------------|--|
| 1. Wiper blade (RH)                         | 2. Front fender (RH) | 3. Windshield glass                        |
| 4. Cowl top cover                           | 5. Wiper blade (LH)  | C. $38.2 \pm 7.5$ mm ( $1.50 \pm 0.30$ in) |
| D. $34.88 \pm 7.5$ mm ( $1.37 \pm 0.30$ in) |                      |  |

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WW

# FRONT WIPER BLADE

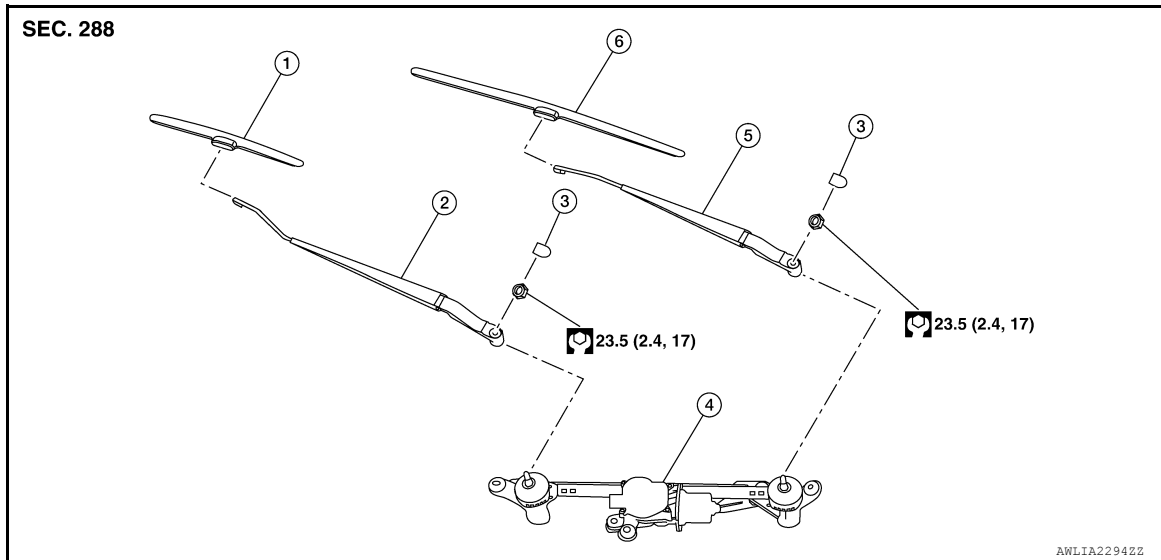
< REMOVAL AND INSTALLATION >

## FRONT WIPER BLADE

### WIPER BLADE

#### WIPER BLADE : Exploded View

INFOID:000000011280423



- |                               |                   |                     |
|-------------------------------|-------------------|---------------------|
| 1. Wiper blade (RH)           | 2. Wiper arm (RH) | 3. Wiper arm cover  |
| 4. Front wiper drive assembly | 5. Wiper arm (LH) | 6. Wiper blade (LH) |

#### WIPER BLADE : Removal and Installation

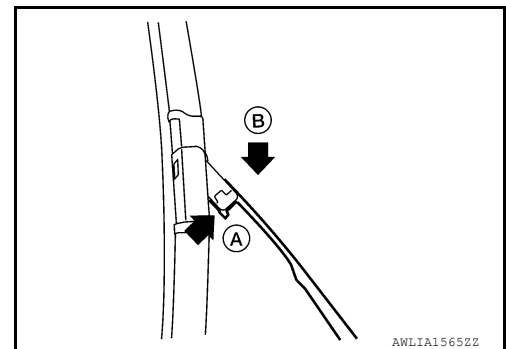
INFOID:000000011280424

##### REMOVAL

1. Move front wiper into the service position by turning the ignition switch ON, then quickly push the wiper washer switch to the mist position two times within 0.5 seconds.
2. Turn the ignition switch OFF.
3. Lift the wiper arm and wiper blade away from the windshield glass.
4. Rotate the wiper blade and push the release tab (A), then move the wiper blade down (B) the wiper arm.

**CAUTION:**

**Be careful not to drop the wiper arm onto the windshield glass.**



5. Remove the wiper blade.

##### INSTALLATION

Installation is in the reverse order of removal.

**NOTE:**

Insert the front wiper blade onto the front wiper arm until it clicks into place.

#### WIPER BLADE REFILL



# FRONT WIPER BLADE

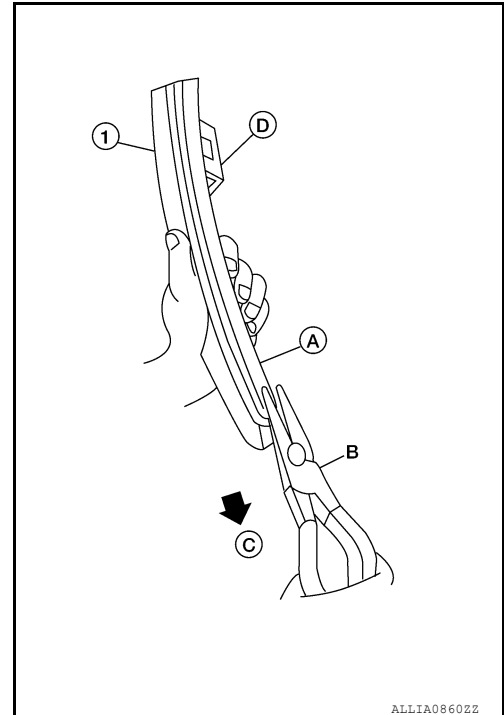
< REMOVAL AND INSTALLATION >

## WIPER BLADE REFILL : Removal and Installation

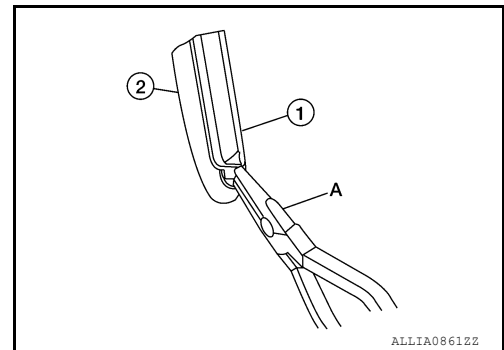
INFOID:000000011395501

### REMOVAL

1. Remove the wiper blade. Refer to [WW-64, "WIPER BLADE : Removal and Installation"](#).
2. Hold the wiper blade refill lip at the end (A) of the wiper blade (1) with a suitable tool (B) as shown, and pull it firmly in the direction (C).  
(D): U clip (part of wiper blade)

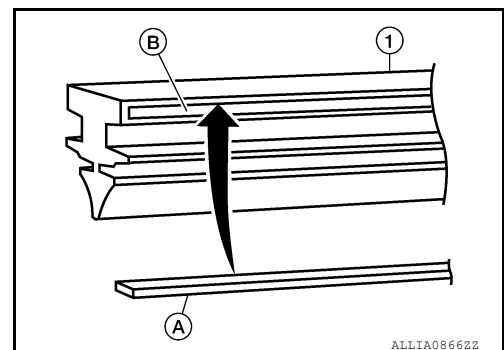


- If the wiper blade refill lip is torn due to wear, insert a suitable tool (A) into the space between the end of the wiper blade refill (1) and the wiper blade (2) and pull the wiper blade refill (1) out as shown.



### INSTALLATION

1. If the rib (A) has become detached from the wiper blade refill (1), check that the curve of the rib (A) is in the same direction as the curve of the wiper blade refill (1) and insert the rib (A) into the slit (B) in the wiper blade refill (1) as shown.



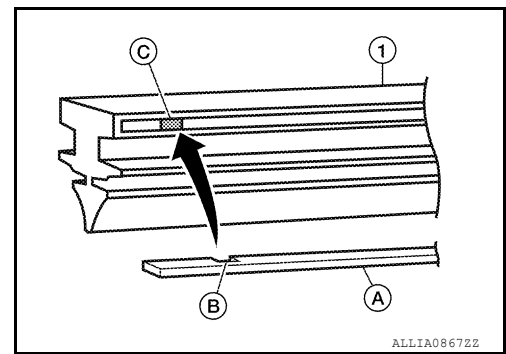
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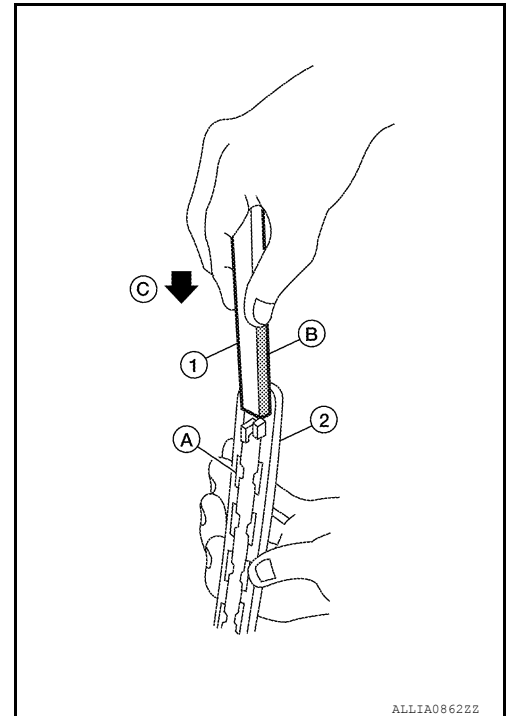
## FRONT WIPER BLADE

### < REMOVAL AND INSTALLATION >

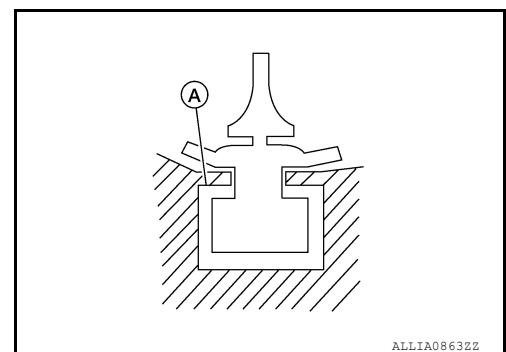
- If the rib (A) has a notch (B), insert the rib (A) into the wiper blade refill (1) so the notch (B) fits over the protrusion (C) in the wiper blade refill (1) as shown.



2. Insert the wiper blade refill (1) tip into the end of the wiper blade (2) in the direction (C). Push the wiper blade refill (1) in while pressing it into the end of the wiper blade (2) as shown. After the wiper blade refill is fully inserted, remove the holder (B). (A): Tab (part of wiper blade) (2)



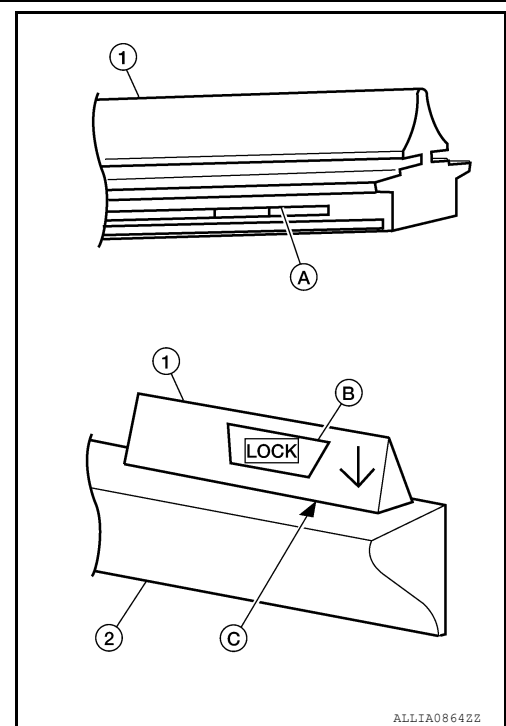
- Make sure to slide the refill into the wiper blade so that the wiper blade refill is held by the tabs (A) on the wiper blade as shown.



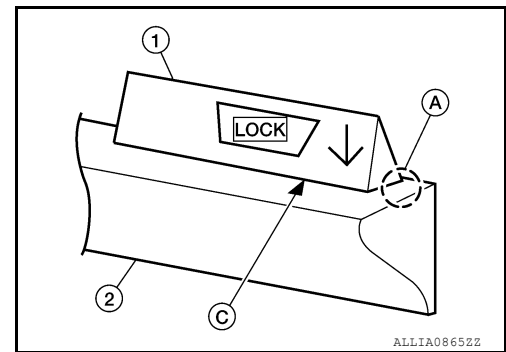
## FRONT WIPER BLADE

### < REMOVAL AND INSTALLATION >

3. Push the wiper blade refill (1) until the tabs on the wiper blade (2) fit into the stoppers (A) in the end of the wiper blade refill (1). Make sure the LOCK mark (B) on the wiper blade refill (1) is aligned with the lock point symbol (C) on the wiper blade (2) as shown.



4. Before installing the wiper blade, make sure that the wiper blade refill (1) end is fully covered by the wiper blade (2) in area (A) and locked at point (C).



5. Install the wiper blade. Refer to [WW-64. "WIPER BLADE : Removal and Installation"](#).

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
M  
N  
O  
P

WW

# FRONT WIPER DRIVE ASSEMBLY

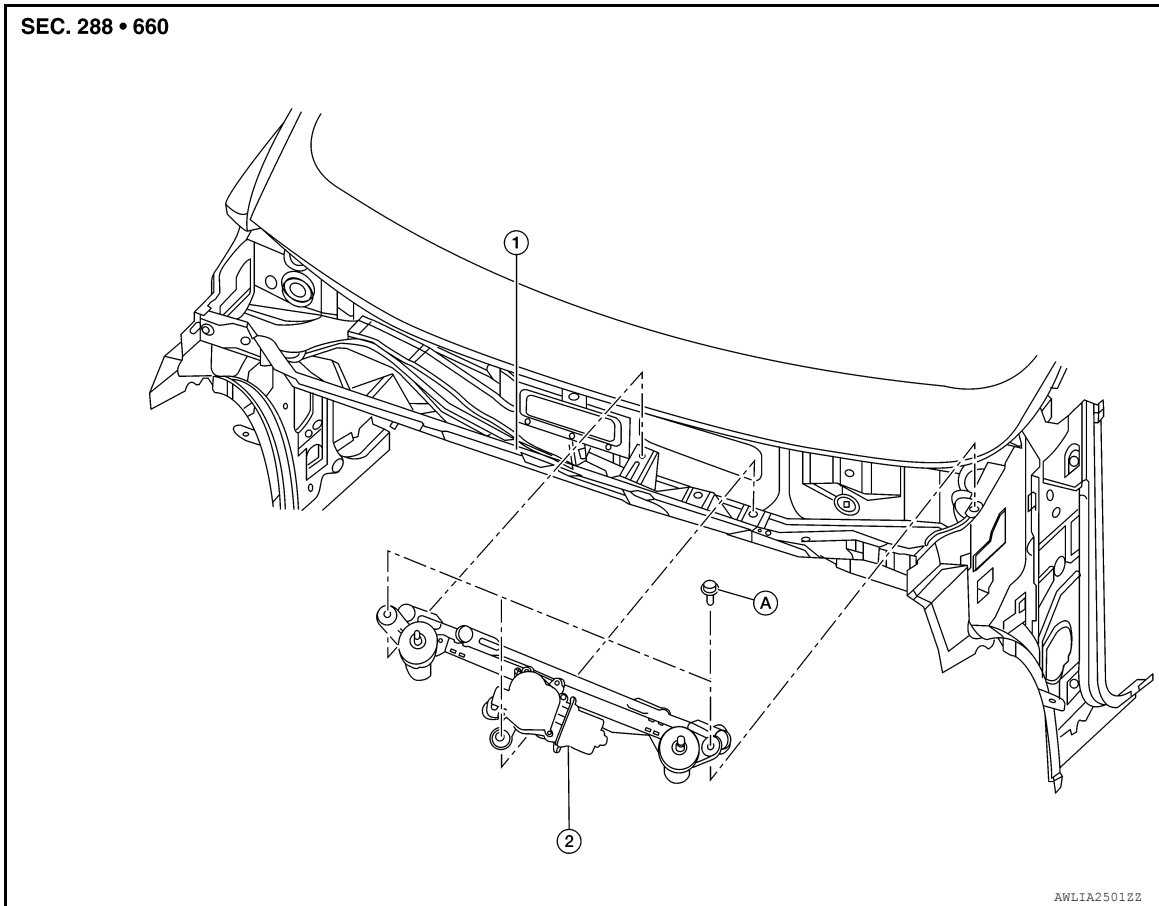
< REMOVAL AND INSTALLATION >

## FRONT WIPER DRIVE ASSEMBLY

Exploded View

INFOID:000000011280425

REMOVAL



1. Cowl top

2. Front wiper drive assembly

A. Refer to INSTALLATION

## Removal and Installation

INFOID:000000011280426

### REMOVAL

1. Remove cowl top cover. Refer to [EXT-25, "Removal and Installation"](#).
2. Disconnect harness connector from front wiper motor.
3. Remove bolts and front wiper drive assembly.

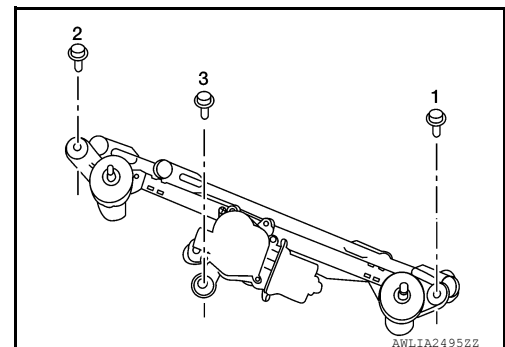
### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

**Tighten the bolts to specification in the sequence shown.**

**Bolts : 4.5 N·m (0.46 kg·m, 40 in·lb)**



# FRONT WIPER MOTOR

< REMOVAL AND INSTALLATION >

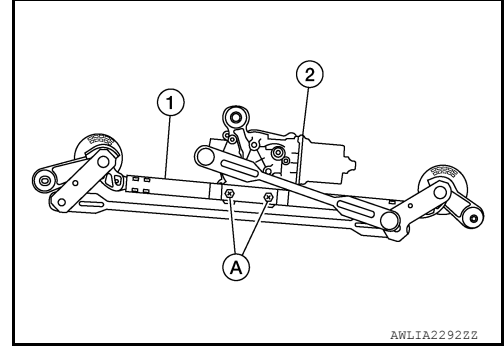
## FRONT WIPER MOTOR

### Removal and Installation

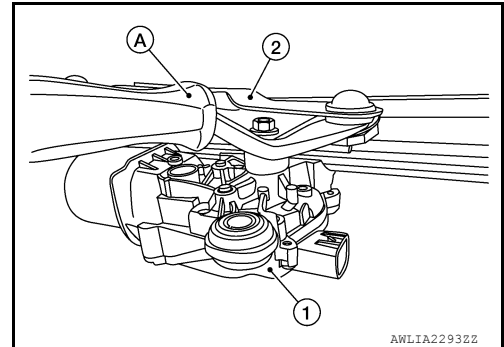
INFOID:000000011280427

#### REMOVAL

1. Remove the front drive assembly. Refer to [WW-68. "Removal and Installation"](#).
2. Remove the bolts (A) from the front wiper drive assembly (1) and the front wiper motor (2).



3. Separate the wiper motor (1) from the front wiper drive (2) using suitable tool (A).



4. Remove the front wiper motor.

#### INSTALLATION

Installation is in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
M  
N  
O  
P

WW

## WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

---

### WIPER AND WASHER SWITCH

#### Removal and Installation

INFOID:000000011280428

The wiper and washer switch is serviced as a part of the combination switch. Refer to [BCS-76. "Removal and Installation"](#).

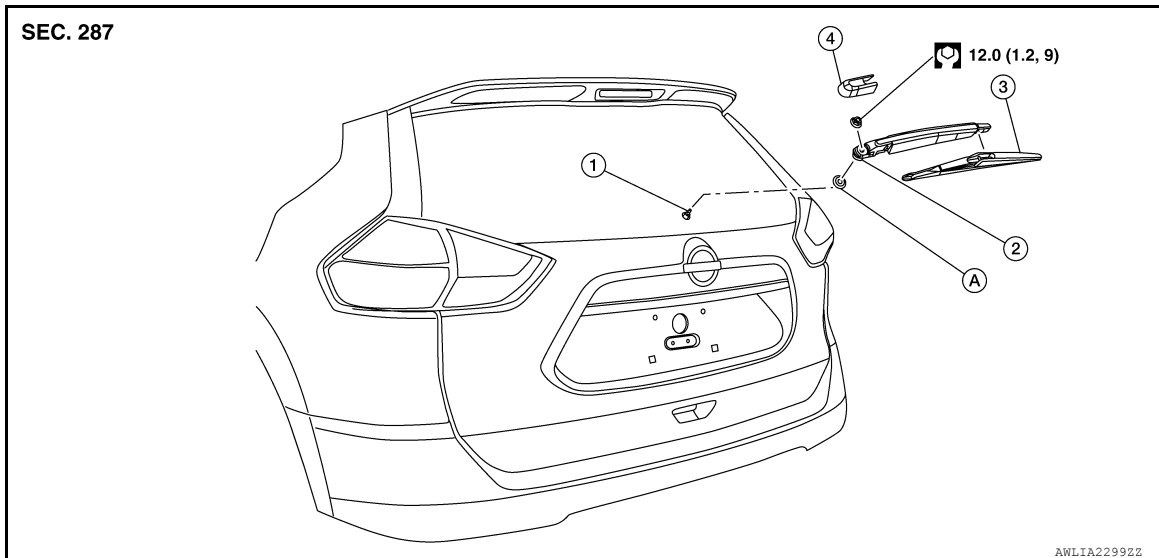
# REAR WIPER ARM

< REMOVAL AND INSTALLATION >

## REAR WIPER ARM

### Exploded View

INFOID:000000011280429



- |                         |                   |                     |
|-------------------------|-------------------|---------------------|
| 1. Rear wiper motor     | 2. Rear wiper arm | 3. Rear wiper blade |
| 4. Rear wiper arm cover | A. Seal           |                     |

### Removal and Installation

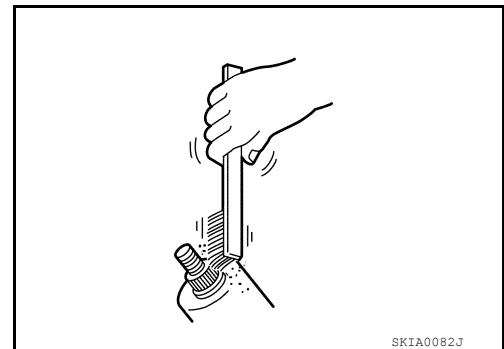
INFOID:000000011280430

#### REMOVAL

1. Check that the rear wiper arm is in the auto stop position.
2. Remove the rear wiper arm cover.
3. Remove the rear wiper arm nut from the rear wiper arm.
4. Remove the rear wiper arm.

#### INSTALLATION

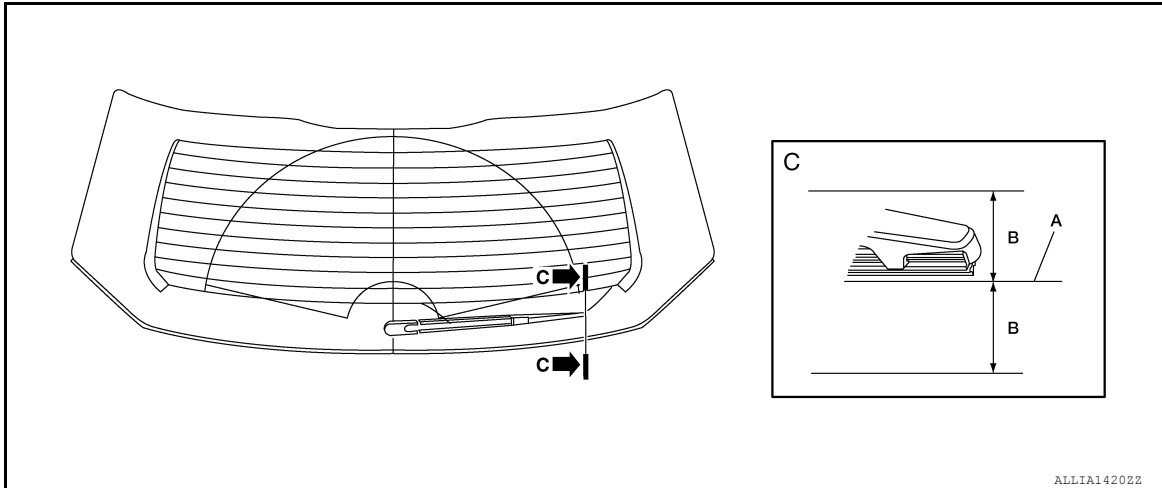
1. Clean the rear wiper arm mount as shown, to prevent the possibility of rear wiper arm looseness.



2. Check that the rear wiper motor is in the auto stop position.
3. Install the rear wiper arm by positioning the rear wiper blade on the rear window defogger wire (A) then tighten the rear wiper arm nut to specification.

# REAR WIPER ARM

## < REMOVAL AND INSTALLATION >



A. Rear window defogger wire

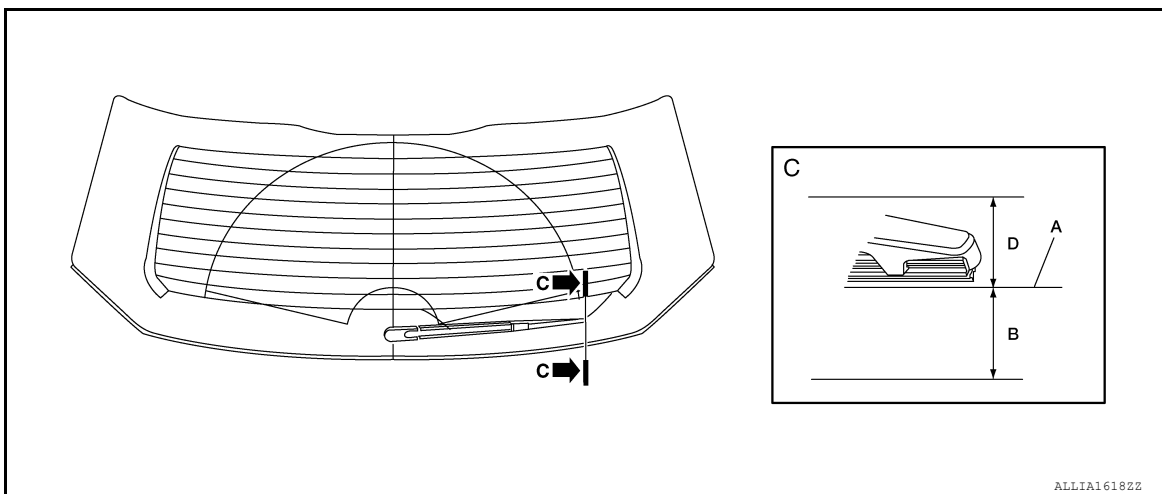
**B : ± 7.5 mm (± .30 in)**

4. Instal the rear wiper arm cover.

5. Check that the rear wiper blade stops at the specified position. Refer to [WW-72, "Inspection"](#).

### Inspection

INFOID:000000011280431



A. Rear window defogger wire

**D : 20.0 mm (0.79 in)**

**B : 7.5 mm (0.30 in)**

Auto stop position is on top of the rear window defogger wire (A).



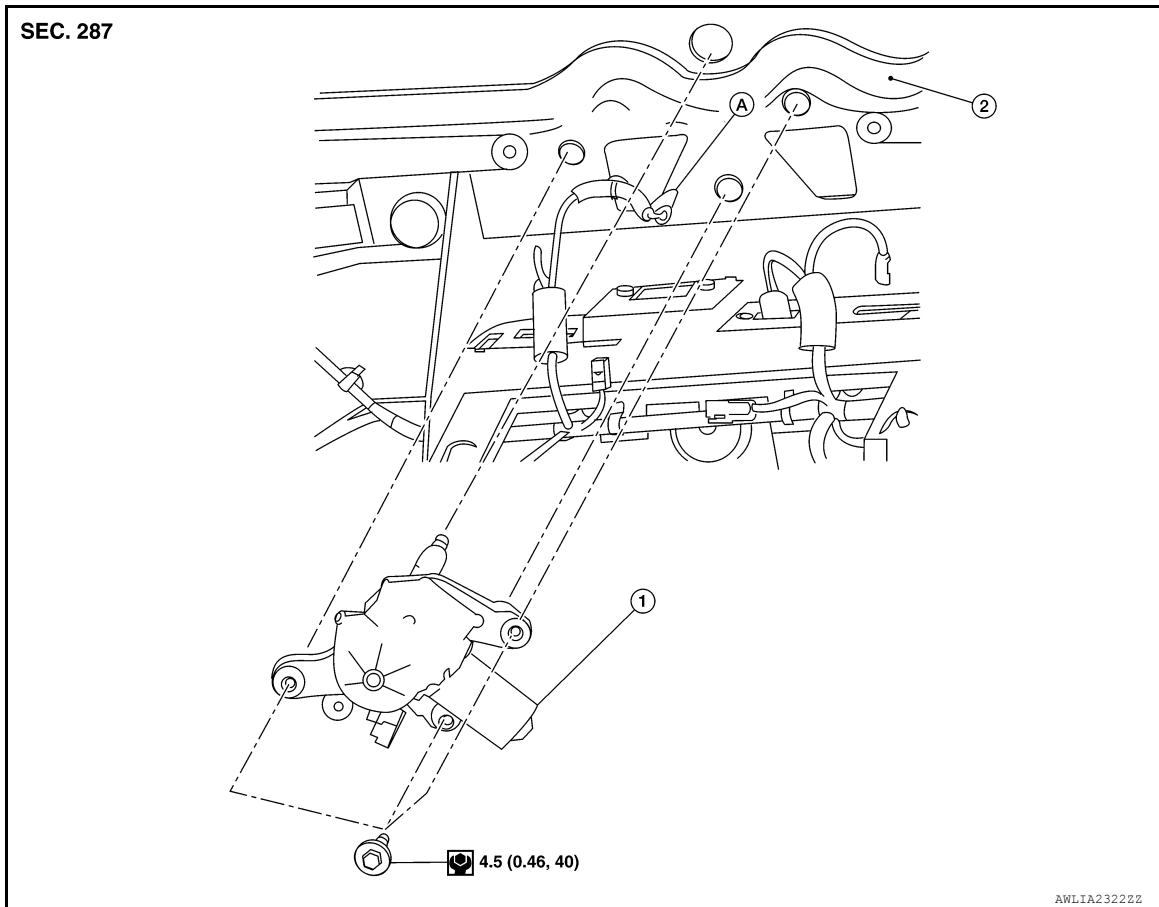
# REAR WIPER MOTOR

< REMOVAL AND INSTALLATION >

## REAR WIPER MOTOR

Exploded View

INFOID:000000011280432



1. Rear wiper motor

2. Back door

A. Rear wiper motor harness

## Removal and Installation

INFOID:000000011280433

### REMOVAL

1. Remove rear wiper arm. Refer to [WW-71, "Removal and Installation"](#).
2. Remove back door finisher. Refer to [INT-38, "Removal and Installation"](#).
3. Disconnect the harness connector from the rear wiper motor.
4. Remove bolts and the rear wiper motor.

### INSTALLATION

Install in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
M  
N  
O  
P

WW

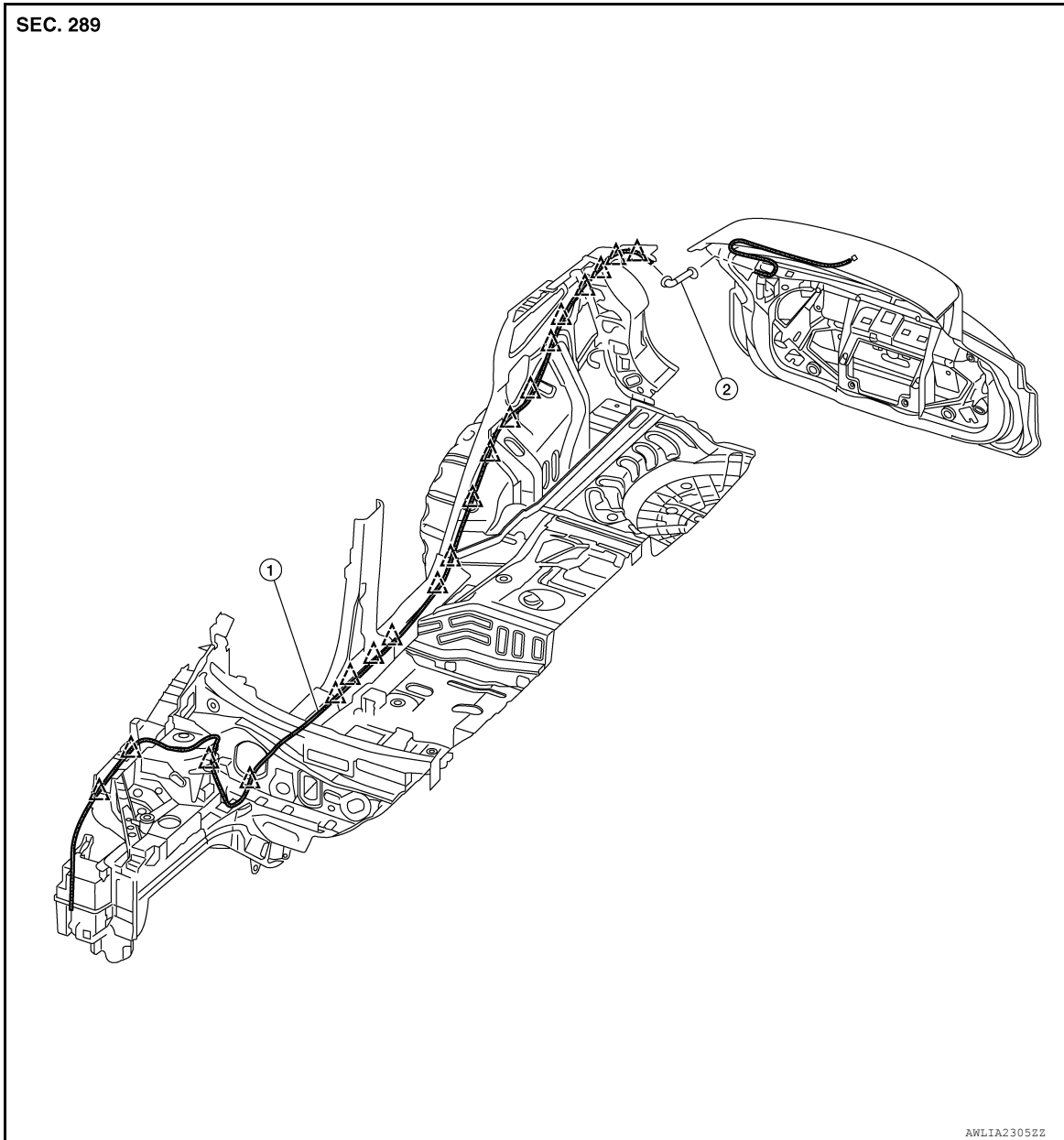
# REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## REAR WASHER NOZZLE AND TUBE


Exploded View

INFOID:000000011280434



1. Rear washer tube

2. Rear grommet

 Clip

### Removal and Installation - Rear Washer Nozzle

INFOID:000000011280435

#### REMOVAL

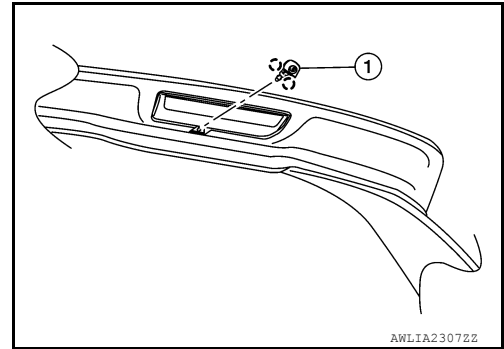
1. Remove rear access panel. Refer to [INT-38, "Exploded View"](#).

## REAR WASHER NOZZLE AND TUBE

### < REMOVAL AND INSTALLATION >

2. Release pawls and remove rear washer nozzle (1).

○: Pawl



### INSTALLATION

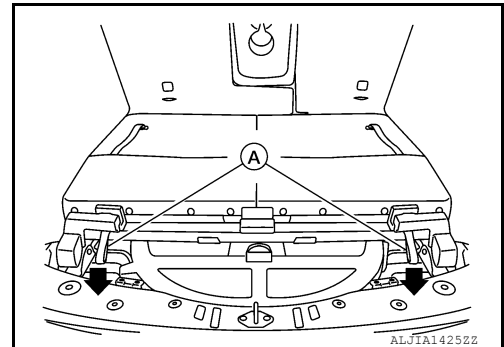
Installation in the reverse order of removal.

### Removal and Installation - Rear Washer Tube

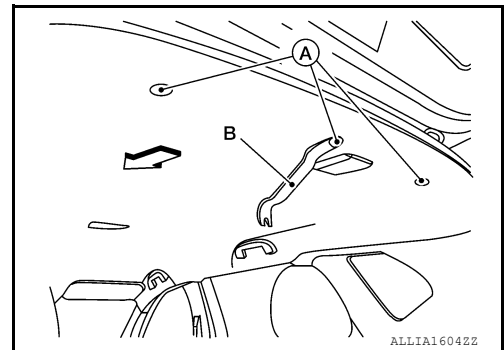
INFOID:000000011280436

### REMOVAL

1. Remove front over fender (RH). Refer to [EXT-30, "FRONT OVER FENDER : Removal and Installation"](#).
2. Remove wind deflector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
3. Remove engine side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
4. Partially remove front fender protector (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
5. Release seat latches by pulling straps (A) rearward, then lift seat from seat strikers (LH/RH).



6. Remove dash side finisher (RH). Refer to [INT-24, "DASH SIDE FINISHER : Removal and Installation"](#).
7. Remove center pillar lower finisher (RH). Refer to [INT-22, "CENTER PILLAR LOWER FINISHER : Removal and Installation"](#).
8. Remove luggage side upper finisher (LH/RH). Refer to [INT-36, "LUGGAGE SIDE UPPER FINISHER : Removal and Installation"](#).
9. Remove headlining clips (A) using suitable tool (B) and partially lower headlining (rear).



10. Disconnect rear washer tube from washer tank and rear washer nozzle.
11. Release clips and remove rear washer tube.

### INSTALLATION

Installation is in the reverse order of removal.

# REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## Inspection and Adjustment

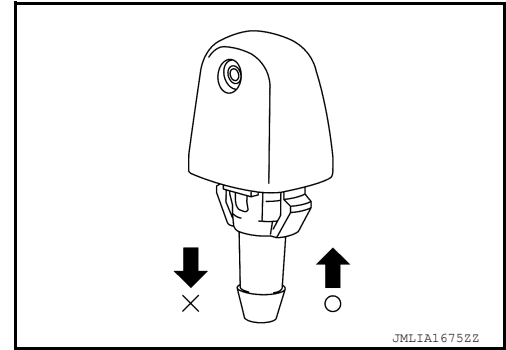
INFOID:000000011280437

### INSPECTION

Check that air can pass through the nozzle by blowing into the nozzle and that air cannot flow in the opposite direction.

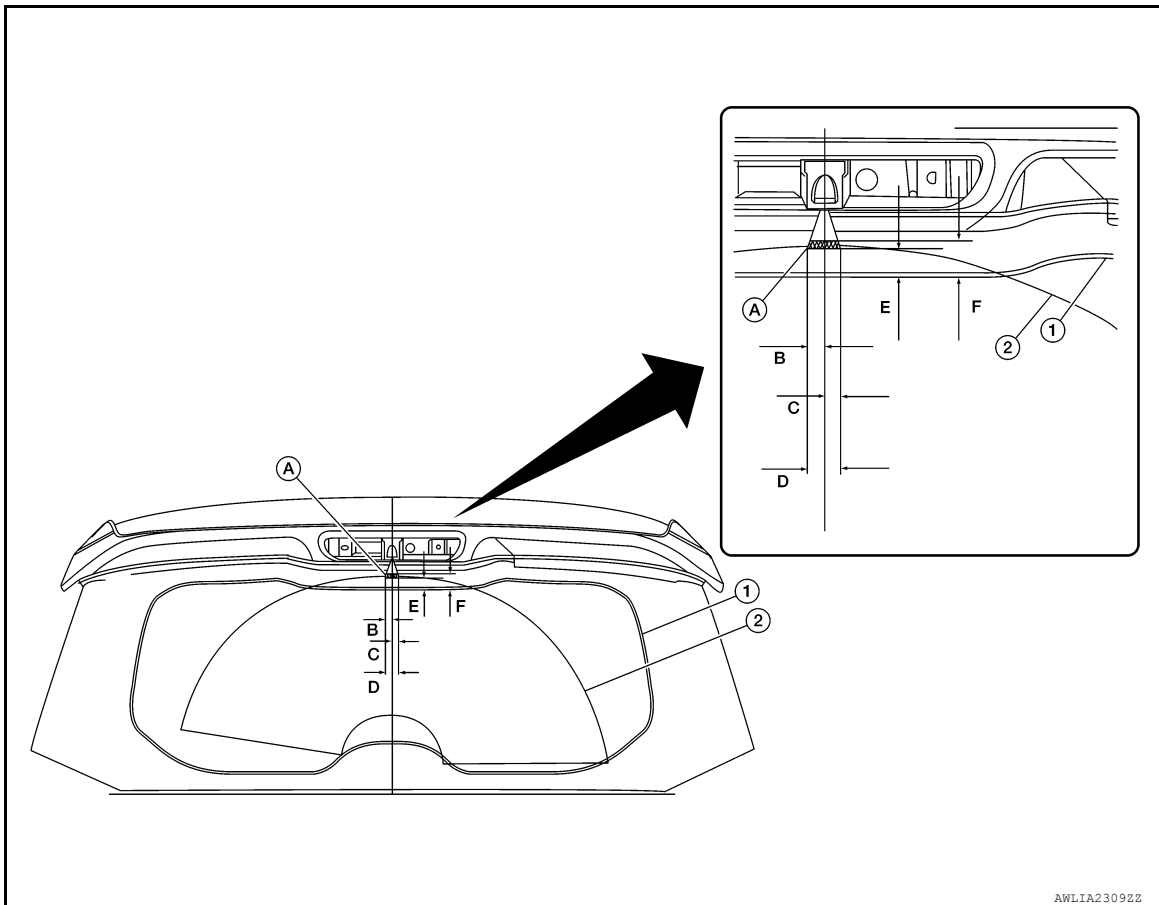
O: Air can go

X: Air cannot go



### ADJUSTMENT

If operating properly, spray positions should match the positions shown. If spray positions do not match, confirm the rear washer nozzle is properly seated and working properly. If the spray positions still do not match as shown, then replace the rear washer nozzle. Refer to [WW-74, "Removal and Installation - Rear Washer Nozzle"](#)



- 1. Black print
- B. 12.8 mm (0.5 in)
- E. 15.5 mm (0.6 in)

- 2. Wiping area
- C. 12.8 mm (0.5 in)
- F. 20.6 mm (0.8 in)

- A. Spray target area
- D. 25.7 mm (1.0 in)

# FRONT WIPER DRIVE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

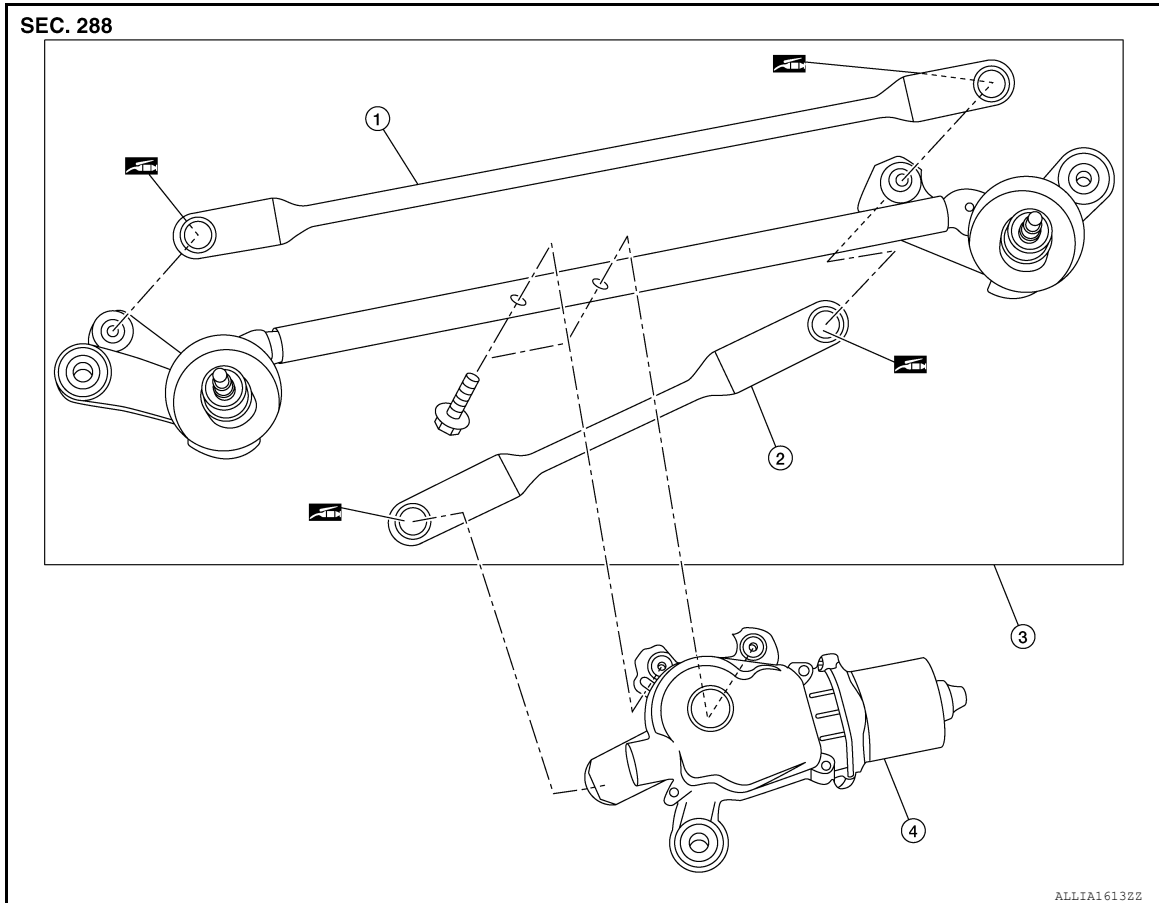
## UNIT DISASSEMBLY AND ASSEMBLY

### FRONT WIPER DRIVE ASSEMBLY

Exploded View

INFOID:000000011394503

DISASSEMBLY VIEW



1. Front wiper linkage 1
4. Front wiper motor

2. Front wiper linkage 2

3. Front wiper drive

### Disassembly and Assembly

INFOID:000000011394560

#### DISASSEMBLY

1. Remove front wiper motor. Refer to [WW-69, "Removal and Installation"](#).
2. Remove front wiper linkage 1 and 2 from the front wiper drive.

**CAUTION:**

**Do not bend the linkage or damage the plastic part of the ball joint when removing the front wiper linkage.**

#### ASSEMBLY

1. Install front wiper motor to front wiper drive.
2. Install front wiper linkage 1 to the front wiper motor and the front wiper drive.
3. Install front wiper linkage 2 to the front wiper drive.

**CAUTION:**

- Do not drop front wiper motor or cause it to come into contact with other parts.
- Apply multi-purpose grease or an equivalent grease if necessary.

## SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### Specifications

INFOID:000000011280438

### WINDSHIELD WASHER FLUID

|   |   |
|---|---|
| Windshield washer fluid capacity (with washer tank inlet) | 5.2 ℓ (5 1/2 US qt, 4 5/8 Imp qt)                         |
| Windshield washer fluid specification                     | Refer to <a href="#">MA-11. "Fluids and Lubricants"</a> . |