

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:000000006113782

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" 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 that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the "SRS AIR BAG".
- 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

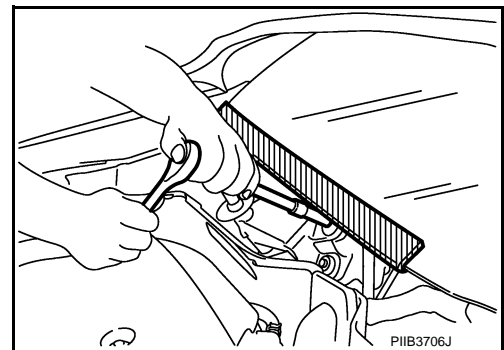
#### **WARNING:**

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag 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 3 minutes before performing any service.

#### Precaution for Procedure without Cowl Top Cover

INFOID:000000006046632

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



# PREPARATION

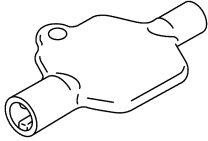
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## PREPARATION

### PREPARATION

#### Commercial Service Tool

INFOID:000000006134072

Tool name	Description
<p data-bbox="191 516 431 543">Washer nozzle adjuster</p>  <p data-bbox="776 632 859 646">JSLIA0149ZZ</p>	<p data-bbox="927 449 1425 531">Adjusting washer nozzle. (Available in SEC. 289 of PARTS CATALOG: Part No. 28949 1EA0A)</p> <p data-bbox="927 533 1425 611"><b>NOTE:</b> Washer nozzle adjuster is included with shipment of nozzle.</p>

# COMPONENT PARTS

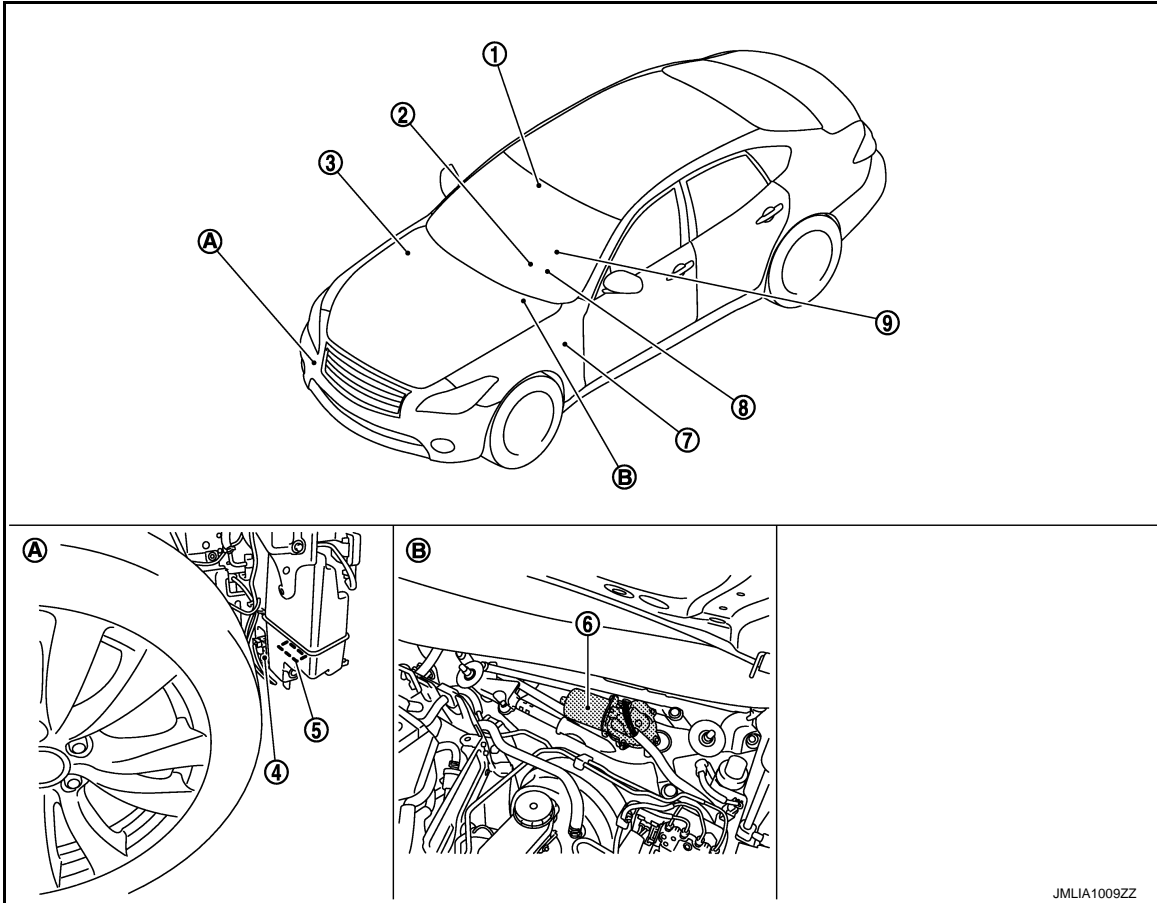
< SYSTEM DESCRIPTION >

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000006046633



- |  |                                       |  |
|--|---------------------------------------|--|
| 1. Rain sensor   | 2. Combination switch                 | 3. IPDM E/R<br>Refer to <a href="#">PCS-5, "IPDM E/R : Component Parts Location"</a>     |
| 4. Washer pump   | 5. Washer level switch                | 6. Front wiper motor   |
| 7. BCM<br>Refer to <a href="#">BCS-4, "BODY CONTROL SYSTEM : Component Parts Location"</a> | 8. Combination meter                  | 9. TCM<br>Refer to <a href="#">TM-8, "A/T CONTROL SYSTEM : Component Parts Location"</a> |
| A. Cowl top, left side of engine room  | B. Behind front fender protector (RH) |  |

#### Component Description

INFOID:000000006046634

Part	Description
IPDM E/R	<ul style="list-style-type: none"> <li>Controls the each relay according to the request (via CAN communication) from BCM.</li> <li>Performs the auto stop control of the front wiper.</li> </ul>
BCM	<ul style="list-style-type: none"> <li>Judges the each switch status by the combination switch reading function.</li> <li>Requests (via CAN communication) front wiper operation to IPDM E/R.</li> </ul>
TCM	Transmits the selector lever position signal to IPDM E/R.
Rain sensor	Detects water droplets on the windshield with infrared rays, and transmits the rain sensor signal to BCM via the rain sensor serial link.

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## COMPONENT PARTS

### < SYSTEM DESCRIPTION >

Part	Description
Combination switch (Wiper & washer switch)	Refer to <a href="#">BCS-6, "COMBINATION SWITCH READING SYSTEM : System Description"</a> .
Washer pump	Washer fluid is sprayed according to washer switch states.
Front wiper motor	<ul style="list-style-type: none"><li>• IPDM E/R controls front wiper operation.</li><li>• Front wiper position signal is transmitted to IPDM E/R.</li></ul>
Combination meter	Transmits the vehicle speed signal to BCM via CAN communication.

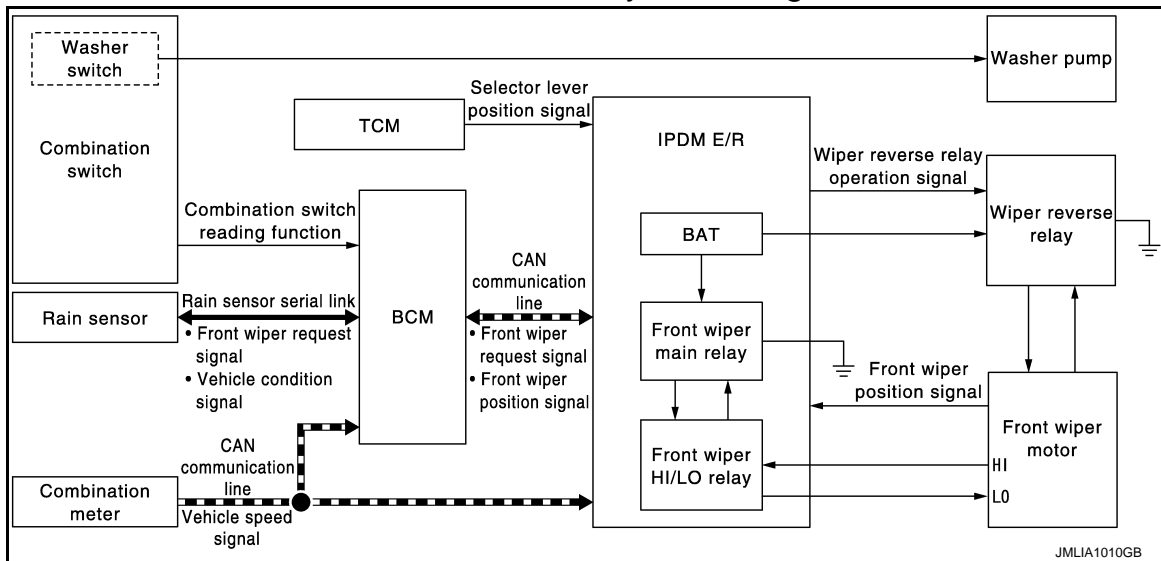
# SYSTEM

< SYSTEM DESCRIPTION >

## SYSTEM

### FRONT WIPER AND WASHER SYSTEM

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



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

INFOID:000000006046636

##### OUTLINE

For improving front visibility in rainy weather, front wiper motor and front wiper drive are controlled according to LO or HI operation of front wiper. Wiping angle is enlarged. The front wiper is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Front wiper control function

Control by IPDM E/R

- Front wiper control function
- Relay control function

Combination meter indicates low washer fluid warning judged by the signal from the washer level switch. For details of low washer fluid warning, refer to [MWI-19. "INFORMATION DISPLAY : System Description"](#).

##### FRONT WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front wiper request signal to IPDM E/R via CAN communication depending on each operating condition of the front wiper.
- Front wiper motor transmits the front wiper position signal to IPDM E/R.
- IPDM E/R operates ON/OFF of front wiper main relay, front wiper HI/LO relay, and wiper reverse relay according to front wiper request signal and front wiper position signal. Rotation direction, ON/OFF of wiper motor, and HI/LO operation of front wiper are controlled by IPDM E/R.

##### FRONT WIPER LO OPERATION

- BCM transmits the front wiper request signal (LO) to IPDM E/R via CAN communication according to the front wiper LO operating condition.

Front wiper LO operating condition

- Ignition switch ON
- Front wiper switch LO or front wiper switch MIST (while pressing)
- When detecting that front wiper request signal changes from OFF to LO, IPDM E/R turns front wiper main relay ON. Power supply is supplied to LO terminal of front wiper motor. Being connected to ground by wiper reverse relay, front wiper motor operates clockwise at LO.
- When detecting that front wiper request signal changes from HI to LO, IPDM E/R performs HI operation (front wiper motor rotation is counter clockwise) until detecting that front wiper position signal from front

# SYSTEM

## < SYSTEM DESCRIPTION >

wiper motor is in near range of the upper or lower reversal position. When detecting the upper or lower reversal position, IPDM E/R turns front wiper main relay ON, front wiper HI/LO relay OFF, and wiper reverse relay OFF. Front wiper motor operates clockwise at LO.

### FRONT WIPER HI OPERATION

- BCM transmits the front wiper request signal (HI) to IPDM E/R via CAN communication according to the front wiper HI operating condition.

Front wiper HI operating condition

- Ignition switch ON
- Front wiper switch HI

- When detecting that front wiper request signal changes from OFF to HI or from LO to HI, IPDM E/R performs LO operation (front wiper motor rotation is clockwise) until detecting front wiper position signal from front wiper motor is in near range of the upper or lower reversal position. When detecting the upper or lower reversal position, IPDM E/R turns front wiper main relay OFF, front wiper HI/LO relay ON, and wiper reverse relay ON. Front wiper motor operates counterclockwise at HI.

### FRONT WIPER AUTO OPERATION

Rain Detection

Rain level and sensor conditions are detected by rain sensor.

- BCM transmits the vehicle condition signal (vehicle speed, front wiper condition, rain sensor sensitivity setting, etc.) to the rain sensor via the rain sensor serial link.
- Rain sensor judges a wiping speed for front wiper by rain condition and the vehicle conditions. And it transmits the front wiper request signal to the BCM via the rain sensor serial link.

Auto Wiping Operation

- BCM receives the wiping speed request signal from the rain sensor via the rain sensor serial link.
- BCM controls front wiper operation according to the front wiper request signal. And it transmits the front wiper request signals (LO or HI) to the IPDM E/R via CAN communication line.

Front wiper AUTO operating condition

- Ignition switch ON
- Front wiper switch AUTO

#### **NOTE:**

When the front wiper switch is turned to AUTO position, front wiper operates once regardless of rainy conditions.

Rain Sensor Sensitivity Setting

BCM determines rain sensor sensitivity according to wiper volume dial position.

Wiper volume dial position	Sensitivity
1	High sensitivity
2	
3	Medium-high sensitivity
4	
5	Low-medium sensitivity
6	
7	Low sensitivity

#### **NOTE:**

When the wiper volume dial position is turned up by 1 level under front wiper AUTO operating condition, front wiper operates once.

Splash Mode Operation

Front wiper is operated at HI regardless of the wiper volume adjustment position, when water drops are instantaneously sprayed over the windshield glass due to water splash from oncoming vehicles or other causes. After that, AUTO operation is performed depending on the amount of water drops.

Splash mode operation conditions

- Front wiper switch AUTO
- Ignition switch ON

#### **NOTE:**



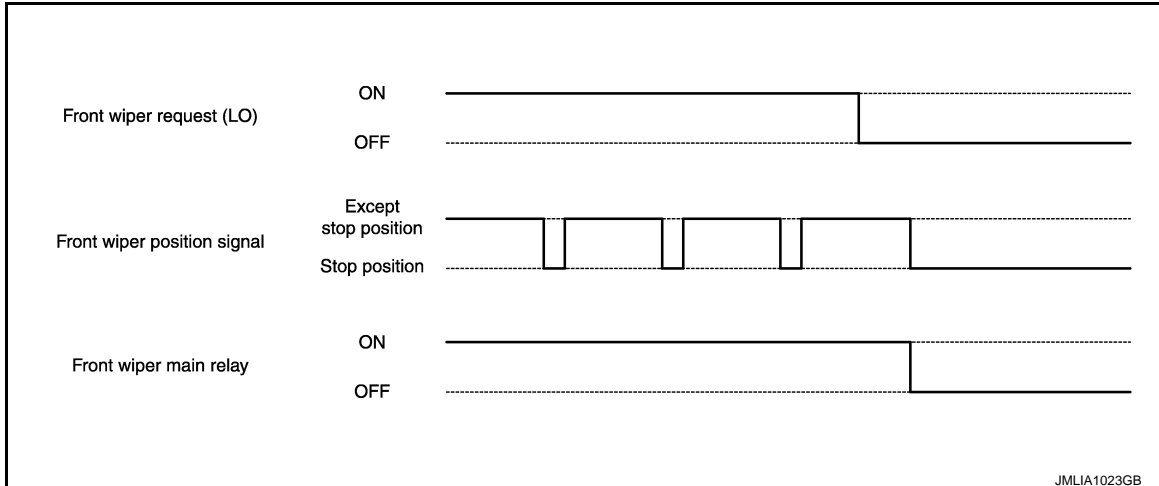
# SYSTEM

## < SYSTEM DESCRIPTION >

Splash mode is not operated and auto wiping operation is performed, while the vehicle is stopped.

### FRONT WIPER AUTO STOP OPERATION

- BCM stops transmitting the front wiper request signal when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper position signal from the front wiper motor and detects the front wiper motor position (stop position/except stop position).
- When the front wiper request signal is stopped, IPDM E/R turns ON the front wiper main relay until the front wiper motor returns to the stop position.



#### NOTE:

- BCM stops the transmitting of the front wiper request signal when the ignition switch is OFF.
- IPDM E/R turns the front wiper main relay OFF when the ignition switch is OFF.

### FRONT WIPER OPERATION LINKED WITH WASHER

- BCM transmits the front wiper request signal (LO) to IPDM E/R via CAN communication according to the washer linked operating condition of the front wiper.
- BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 2 times when the front washer switch OFF is detected.

Washer linked operating condition of front wiper

- Ignition switch ON
- Front washer switch ON (0.4 second or more)
- IPDM E/R turns ON the integrated front wiper main relay according to the front wiper request signal (LO).
- The washer pump is grounded through the combination switch with the front washer switch ON.

### FRONT WIPER DROP WIPE OPERATION

- BCM controls the front wiper to operate once according to the conditions of front wiper drop wipe operation.

Front wiper drop wipe operating condition

- Ignition switch ON
- Front wiper switch OFF
- Front washer switch OFF
- BCM transmits the front wiper request signal (LO) to IPDM E/R with CAN communication so that the front wiper operate once three seconds after front wiper operation linked with washer.
- IPDM E/R turns ON the integrated front wiper main relay according to the front wiper request signal (LO).

### FRONT WIPER SERVICE POSITION OPERATION

- When front wiper switch MIST is operated 2 times, front wiper operates at LO and stops so that front wiper can be locked back.

Front wiper service position operation conditions

- Ignition switch ON.
- Front wiper switch OFF.
- Shift position N or P
- Vehicle speed is 4 km/h or less
- Front wiper operates at LO and stops, when IPDM E/R detects that front wiper request signal from BCM via CAN communication changes from LO to OFF 2 times while the stop position of front wiper position signal is detected (last detection is OFF).

# SYSTEM

## < SYSTEM DESCRIPTION >

### WIPER LINKED AUTO LIGHTING FUNCTION

When light switch is in the AUTO position, front wiper operates, and then headlamp illuminates. Refer to [EXL-15, "AUTO LIGHT SYSTEM \(WITH DTRL\) : System Description"](#).

### FRONT WIPER AND WASHER SYSTEM : Fail-safe

INFOID:000000006115326

### CAN COMMUNICATION CONTROL (IPDM E/R)

When CAN communication with BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With BCM

Control part	Fail-safe operation
Front wiper motor	<ul style="list-style-type: none"><li>• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed.</li><li>• The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the AUTO mode and the front wiper motor is operating.</li><li>• Returns automatically wiper to stop position when ignition switch is turned ON if fail-safe control is activated while front wiper motor is operated and wiper stop in the other than stop position.</li></ul>

### 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 five times.

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.

### FAIL-SAFE CONTROL BY RAIN SENSOR MALFUNCTION

BCM detects the light and rain sensor serial link error and the rain sensor malfunction.

BCM controls the following fail-safe when rain sensor has a malfunction.

- Front wiper switch AUTO and sensing rain drop: The condition just before the activation of fail-safe is maintained until the front wiper switch is turned OFF.
- Front wiper switch AUTO and not sensing rain drop: Front wiper is LO operation until the front wiper switch is turned off.

# DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (BCM)

### COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:000000006115323

### APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM. Refer to CONSULT-III operation manual.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	<ul style="list-style-type: none"> <li>Read and save the vehicle specification.</li> <li>Write the vehicle specification when replacing BCM.</li> </ul>

### SYSTEM APPLICATION

BCM can perform the following functions for each system.

#### NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

x: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	x	x	x
Rear window defogger	REAR DEFOGGER		x	x
Warning chime	BUZZER		x	x
Interior room lamp timer	INT LAMP	x	x	x
Exterior lamp	HEAD LAMP	x	x	x
Wiper and washer	WIPER	x	x	x
Turn signal and hazard warning lamps	FLASHER	x	x	x
—	AIR CONDITONER*		x	x
<ul style="list-style-type: none"> <li>Intelligent Key system</li> <li>Engine start system</li> </ul>	INTELLIGENT KEY	x	x	x
Combination switch	COMB SW		x	
Body control system	BCM	x		
IVIS - NATS	IMMU	x	x	x
Interior room lamp battery saver	BATTERY SAVER	x	x	x
Trunk lid open	TRUNK		x	
Vehicle security system	THEFT ALM	x	x	x
RAP system	RETAINED PWR		x	
Signal buffer system	SIGNAL BUFFER		x	x

\*: This item is not used.

### FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT-III.

# DIAGNOSIS SYSTEM (BCM)

## < SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected	While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK")
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode (Power supply position is "OFF".)
	LOCK>ACC		While turning power supply position from "LOCK" to "ACC"
	ACC>ON		While turning power supply position from "ACC" to "IGN"
	RUN>ACC		While turning power supply position from "RUN" to "ACC" (Vehicle is stopping and selector lever is except P position.)
	CRANK>RUN		While turning power supply position from "CRANKING" to "RUN" (From cranking up the engine to run it)
	RUN>URGENT		While turning power supply position from "RUN" to "ACC" (Emergency stop operation)
	ACC>OFF		While turning power supply position from "ACC" to "OFF"
	OFF>LOCK		While turning power supply position from "OFF" to "LOCK"
	OFF>ACC		While turning power supply position from "OFF" to "ACC"
	ON>CRANK		While turning power supply position from "IGN" to "CRANKING"
	OFF>SLEEP		While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply position is "LOCK".) to low power consumption mode
	LOCK		Power supply position is "LOCK" (Ignition switch OFF with steering is locked.)
	OFF		Power supply position is "OFF" (Ignition switch OFF with steering is unlocked.)
	ACC		Power supply position is "ACC" (Ignition switch ACC)
	ON		Power supply position is "IGN" (Ignition switch ON with engine stopped)
ENGINE RUN	Power supply position is "RUN" (Ignition switch ON with engine running)		
CRANKING	Power supply position is "CRANKING" (At engine cranking)		
IGN Counter	0 - 39	<p>The number of times that ignition switch is turned ON after DTC is detected</p> <ul style="list-style-type: none"> <li>The number is 0 when a malfunction is detected now.</li> <li>The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON.</li> <li>The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.</li> </ul>	

## WIPER

### WIPER : CONSULT-III Function (BCM - WIPER)

INFOID:000000006046647

## WORK SUPPORT

Service item	Setting item	Description	
RAIN SEN WIP FUNC SET	On*	With rain sensor (Front wiper intermittent time linked with the rain sensor, vehicle speed, and AUTO dial position)	The setting of front wiper AUTO operation can be changed
	Off	Without rain sensor (Front wiper intermittent time linked with the vehicle speed and AUTO dial position)	

# DIAGNOSIS SYSTEM (BCM)

## < SYSTEM DESCRIPTION >

Service item	Setting item	Description	
DROP WIPE FUNC SET	MODE1	Front wiper drop wipe OFF	The setting of drop wipe operation can be changed
	MODE2*	Front wiper drop wipe ON	
	MODE3	The same setting as MODE1	
	MODE4	The same setting as MODE2	

\*: Factory setting

## DATA MONITOR

Monitor Item [Unit]	Description
PUSH SW [Off/On]	The switch status input from push-button ignition switch.
VEH SPEED 1 [km/h]	Displays the value of the vehicle speed signal received from combination meter via CAN communication.
FR WIPER HI [Off/On]	Status of each switch judged by BCM using the combination switch reading function
FR WIPER LOW [Off/On]	
FR WASHER SW [Off/On]	
FR WIPER INT [Off/On]	
FR WIPER STOP [Off/On]	Displays the status of the front wiper position signal received from IPDM E/R via CAN communication.
INT VOLUME [1 – 7]	Status of each switch judged by BCM using the combination switch reading function
H/L WASH SW [Off/On]	<b>NOTE:</b> This item is indicated, but not monitored
RAIN SENSOR [OFF/LOW/HIGH/SPLASH/NG]	Request signal from rain sensor detected by BCM is displayed

## ACTIVE TEST

Test item	Operation	Description
FR WIPER	Hi	Transmits the front wiper request signal (HI) to IPDM E/R via CAN communication to operate the front wiper HI operation.
	Lo	Transmits the front wiper request signal (LO) to IPDM E/R via CAN communication to operate the front wiper LO operation.
	INT	Transmits the front wiper request signal (INT) to IPDM E/R via CAN communication to operate the front wiper INT operation.
	Off	Stops transmitting the front wiper request signal to stop the front wiper operation.

# DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (IPDM E/R)

### Diagnosis Description

INFOID:000000006115324

#### AUTO ACTIVE TEST

##### Description

In auto active test, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure warning lamp (only for models with VQ37VHR engine)
- Front wiper (LO, HI)
- Parking lamp
- License plate lamp
- Tail lamp
- Side marker lamp
- Front fog lamp
- Headlamp (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (cooling fan control module)

##### Operation Procedure

##### **CAUTION:**

**Never perform auto active test in the following condition.**

- Engine is running
- CONSULT-III is connected

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)

##### **NOTE:**

When auto active test is performed with hood opened, sprinkle water on windshield beforehand.

2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch (driver side) 10 times. Then turn the ignition switch OFF.

##### **CAUTION:**

**Close passenger door.**

4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.

##### **CAUTION:**

**Engine starts when ignition switch is turned ON while brake pedal is depressed.**

5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

##### **NOTE:**

- When auto active test has to be cancelled halfway through test, turn the ignition switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to [DLK-72](#), "[Component Function Check](#)".

##### Inspection in Auto Active Test

When auto active test is actuated, the following 6 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
1	Oil pressure warning lamp (only for models with VQ37VHR engine)	Blinks continuously during operation of auto active test
2	Front wiper motor	LO for 5 seconds → HI for 5 seconds
3	<ul style="list-style-type: none"><li>• Parking lamp</li><li>• License plate lamp</li><li>• Tail lamp</li><li>• Side marker lamp</li><li>• Front fog lamp</li></ul>	10 seconds
4	Headlamp	<ul style="list-style-type: none"><li>• LO 10 seconds</li><li>• HI ON ↔ OFF 5 times</li></ul>

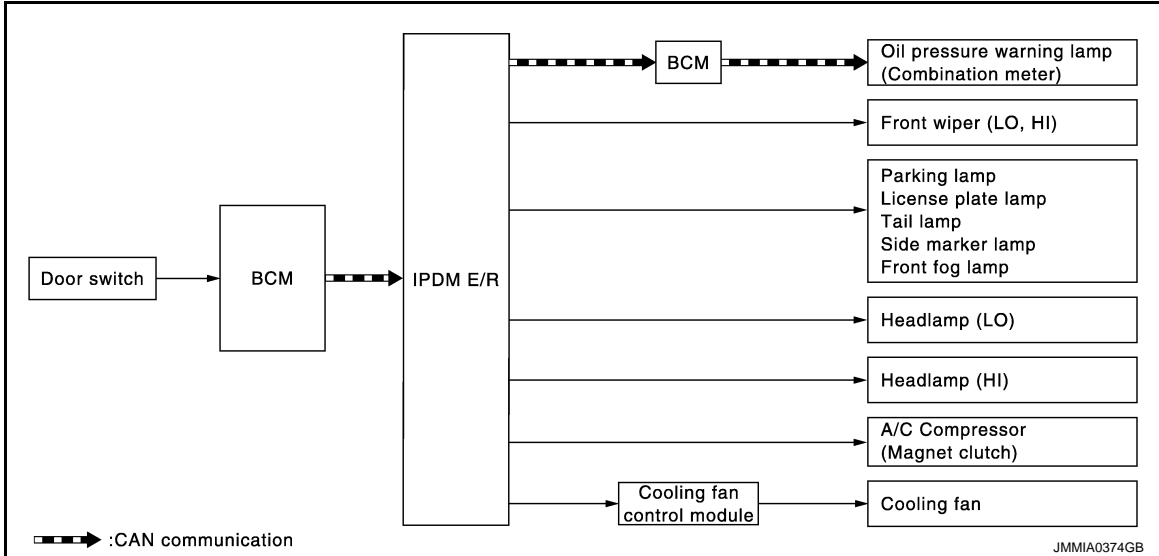
# DIAGNOSIS SYSTEM (IPDM E/R)

## < SYSTEM DESCRIPTION >

Operation sequence	Inspection location	Operation
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	MID for 5 seconds → HI for 5 seconds

\*: Outputs duty ratio of 50% for 5 seconds → duty ratio of 100% for 5 seconds on the cooling fan control module.

### Concept of auto active test



- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

### Diagnosis chart in auto active test

Symptom	Inspection contents	Possible cause
Any of the following components do not operate <ul style="list-style-type: none"> <li>• Parking lamp</li> <li>• License plate lamp</li> <li>• Tail lamp</li> <li>• Side marker lamp</li> <li>• Front fog lamp</li> <li>• Headlamp (HI, LO)</li> <li>• Front wiper motor</li> </ul>	Perform auto active test. Does the applicable system operate?	YES BCM signal input circuit
		NO <ul style="list-style-type: none"> <li>• Lamp or motor</li> <li>• Lamp or motor ground circuit</li> <li>• Harness or connector between IPDM E/R and applicable system</li> <li>• IPDM E/R</li> </ul>
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES <ul style="list-style-type: none"> <li>• Combination meter signal input circuit</li> <li>• CAN communication signal between Combination meter and ECM</li> <li>• CAN communication signal between ECM and IPDM E/R</li> </ul>
		NO <ul style="list-style-type: none"> <li>• Magnet clutch</li> <li>• Harness or connector between IPDM E/R and magnet clutch</li> <li>• IPDM E/R</li> </ul>
Oil pressure warning lamp does not operate (only for models with VQ37VHR engine)	Perform auto active test. Does the oil pressure warning lamp blink?	YES <ul style="list-style-type: none"> <li>• Harness or connector between IPDM E/R and oil pressure switch</li> <li>• Oil pressure switch</li> <li>• IPDM E/R</li> </ul>
		NO <ul style="list-style-type: none"> <li>• CAN communication signal between IPDM E/R and BCM</li> <li>• CAN communication signal between BCM and Combination meter</li> <li>• Combination meter</li> </ul>

# DIAGNOSIS SYSTEM (IPDM E/R)

## < SYSTEM DESCRIPTION >

Symptom	Inspection contents	Possible cause
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES <ul style="list-style-type: none"> <li>• ECM signal input circuit</li> <li>• CAN communication signal between ECM and IPDM E/R</li> </ul>
		NO <ul style="list-style-type: none"> <li>• Cooling fan</li> <li>• Harness or connector between cooling fan and cooling fan control module</li> <li>• Cooling fan control module</li> <li>• Harness or connector between IPDM E/R and cooling fan control module</li> <li>• Cooling fan relay</li> <li>• Harness or connector between IPDM E/R and cooling fan relay</li> <li>• IPDM E/R</li> </ul>

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

INFOID:000000006115325

### APPLICATION ITEM

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

Diagnosis mode	Description
Ecu Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

### SELF DIAGNOSTIC RESULT

Refer to [PCS-24, "DTC Index"](#).

### DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIG- NALS	Description
RAD FAN REQ [%]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.



# DIAGNOSIS SYSTEM (IPDM E/R)

## < SYSTEM DESCRIPTION >

Monitor Item [Unit]	MAIN SIG- NALS	Description
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the push-button ignition switch judged by IPDM E/R.
INTER/NP SW [Off/On]		Displays the status of the shift position judged by IPDM E/R.
ST RLY CONT [Off/On]		Displays the status of the starter relay status signal received from BCM via CAN communication.
IHBT RLY -REQ [Off/On]		Displays the status of the starter control relay signal received from BCM via CAN communication.
ST/INHI RLY [Off/ ST /INHI/UNKWN]		Displays the status of the starter relay and starter control relay judged by IPDM E/R.
DETENT SW [Off/On]		Displays the status of the A/T shift selector (detention switch) judged by IPDM E/R.
S/L RLY -REQ [Off/On]		Displays the status of the steering lock relay request received from BCM via CAN communication.
S/L STATE [LOCK/UNLOCK/UNKWN]		Displays the status of the steering lock judged by IPDM E/R.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication. <b>NOTE:</b> This item is monitored only on the vehicle with daytime running light system.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R. <b>NOTE:</b> This item is monitored only on the vehicle with VQ37VHR engine models.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.
CRNRNG LMP REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.

## ACTIVE TEST

### Test item

Test item	Operation	Description
CORNERING LAMP	Off	<b>NOTE:</b> The item is indicated, but cannot be tested.
	LH	
	RH	
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.

## DIAGNOSIS SYSTEM (IPDM E/R)

### < SYSTEM DESCRIPTION >

Test item	Operation	Description
MOTOR FAN	1	OFF
	2	Transmits 50% pulse duty signal (PWM signal) to the cooling fan control module.
	3	Transmits 75% pulse duty signal (PWM signal) to the cooling fan control module.
	4	Transmits 100% pulse duty signal (PWM signal) to the cooling fan control module.
HEAD LAMP WASHER	On	<b>NOTE:</b> The item is indicated, but cannot be tested.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and the daytime running light relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

# BCM, IPDM E/R

< ECU DIAGNOSIS INFORMATION >

## ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:000000006046650

ECU	Reference
BCM	<a href="#">BCS-32, "Reference Value"</a>
	<a href="#">BCS-52, "Fail-safe"</a>
	<a href="#">BCS-54, "DTC Inspection Priority Chart"</a>
	<a href="#">BCS-55, "DTC Index"</a>
IPDM E/R	<a href="#">PCS-16, "Reference Value"</a>
	<a href="#">PCS-23, "Fail-safe"</a>
	<a href="#">PCS-24, "DTC Index"</a>

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WW

# WIPER AND WASHER SYSTEM

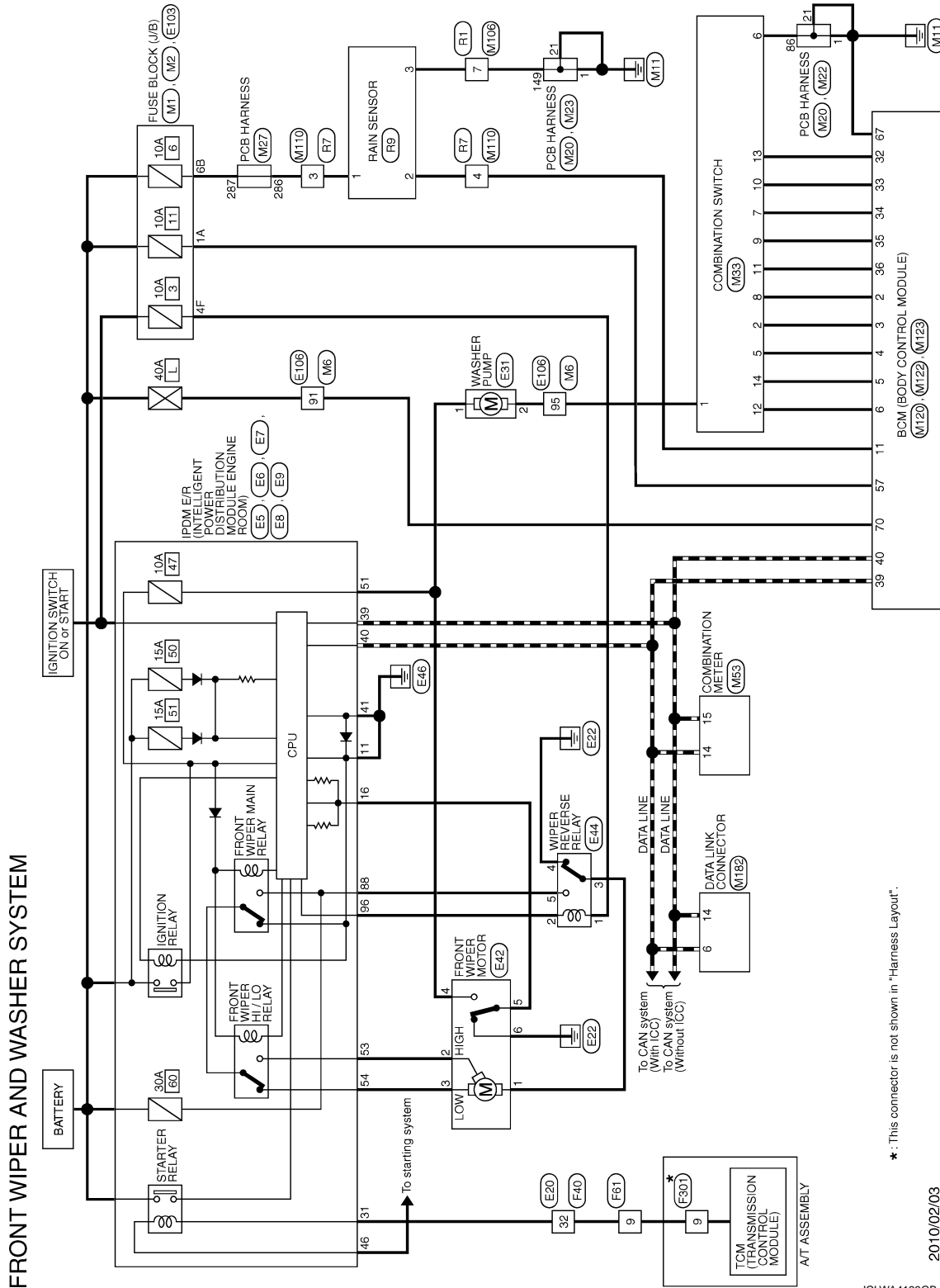
< WIRING DIAGRAM >

## WIRING DIAGRAM

### WIPER AND WASHER SYSTEM

Wiring Diagram

INFOID:000000006046651



\*: This connector is not shown in "Harness Layout".

2010/02/03

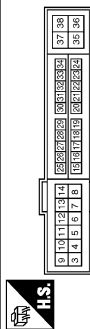
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# WIPER AND WASHER SYSTEM

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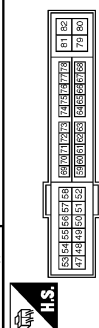
## FRONT WIPER AND WASHER SYSTEM

Connector No.	E5
Connector Name	IPD/E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4-IV



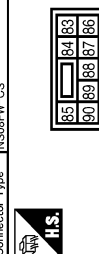
Terminal No.	41	B	-
	42	V	-
	43	SB	-
	44	GR	-
	45	G	-
	46	BR	-

Connector No.	E7
Connector Name	IPD/E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH20FW-CS12-M4



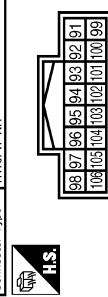
Terminal No.	49	BR	-
	51	O	-
	52	G	-
	53	L	-
	54	P	-
	55	R	-
	56	GR	-
	57	V	-
	58	BR	-
	70	LG	-
	71	O	-
	73	G	-
	74	R	-
	75	Y	-
	77	B	-
	80	W	-

Connector No.	E8
Connector Name	IPD/E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS08FW-CS



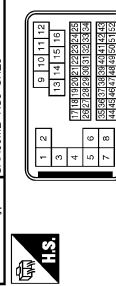
Terminal No.	83	R	-
	84	W	-
	85	G	-
	87	L	-
	88	O	-
	89	Y	-
	90	P	-

Connector No.	E9
Connector Name	IPD/E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH16FW-NH



Terminal No.	84	LG	-
	86	R	-
	87	V	-
	102	O	-

Connector No.	E20
Connector Name	WIRE TO WIRE
Connector Type	SA336MB-FSB-SH28



Terminal No.	9	P	-
	10	G	-
	11	W	- [With VK engines]
	11	Y	- [With VQ engines]
	12	L	-
	13	L	-
	14	LG	- [With VK engines]
	14	V	- [With VQ engines]
	15	SB	-
	16	GR	-
	19	W	-
	20	BR	-
	21	G	-
	22	O	-
	23	L	-
	24	GR	-
	25	Y	-
	28	V	-
	29	Y	-
	30	B	-
	31	LG	-
	32	W	-
	33	BR	-
	34	O	-
	37	SHIELD	-
	38	G	-
	39	Y	-
	40	R	-
	41	W	-
	42	L	-
	43	B	-
	46	SHIELD	-
	47	R	-
	48	L	-
	49	G	-
	50	B	-
	51	Y	-
	52	W	-

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WW

# WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

## FRONT WIPER AND WASHER SYSTEM

Connector No.	E31
Connector Name	WASHER PUMP
Connector Type	E02FGY-RS



Terminal No.	Color of Wire	Signal Name [Specification]
1	O	
2	W	

Connector No.	E42
Connector Name	FRONT WIPER MOTOR
Connector Type	RS08FGY-PR



Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	
2	L	
3	P	
4	O	
5	V	
6	B	

Connector No.	E44
Connector Name	WIPER REVERSE RELAY
Connector Type	MS03FB-M2-LC



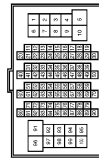
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	
2	R	
3	SB	
4	B	
5	O	

Connector No.	E103
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1F	SB	
2F	V	
4F	G	
6F	O	
8F	W	
9F	R	
12F	Y	

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	
2	W	
3	SB	
4	LG	
5	L	
7	GR	

8	G	-
9	Y	-
10	BR	-
11	SR	-
12	V	-
13	GR	-
14	GR	-
15	V	-
16	Y	-
17	GR	-
18	V	-
20	BR	-
21	P	-
22	L	-
23	P	-
27	SHIELD	-
28	L/O	-
29	W/L	-
31	BR	-
32	G	-
33	O	-
34	Y	-
40	BR	-
41	BR	-
42	L	-
43	P	-
44	W	-
45	L	-
46	GR	-
47	V	-
48	G	-
49	O	-
50	LG	-
60	W	-
61	G	-
62	Y	-
63	BR	-
64	B	-
65	Y	-
66	R	-
67	SB	-
77	O	-
78	SB	-
80	G	-
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84	Y	-
85	Y	-
86	L	-
87	V	-
88	BR	-

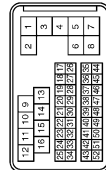
89	LG	-
90	W	-
91	W	-
92	P	-
93	LG	-
94	BR	-
95	W	-
96	R	-
97	R	-
98	Y	-
99	V	-
100	V	-

# WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

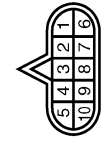
## FRONT WIPER AND WASHER SYSTEM

Connector No.	F40
Connector Name	WIRE TO WIRE
Connector Type	SA-A3FB-RS8-SH23



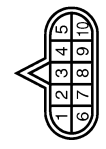
Terminal No.	Color of Wire	Signal Name [Specification]
39	L/Y	- [With VK engine]
39	P	- [With VG engine]
40	W/L	- [With VK engine]
40	R	- [With VG engine]
41	O/L	- [With VK engine]
41	W	- [With VG engine]
42	O	- [With VK engine]
42	LG	- [With VG engine]
43	W	- [With VK engine]
43	B	- [With VG engine]
46	SHIELD	-
47	L/G	- [With VK engine]
47	W	- [With VG engine]
48	L/Y	- [With VK engine]
48	BR	- [With VG engine]
49	W/L	- [With VK engine]
49	O/L	- [With VG engine]
50	O/L	- [With VK engine]
50	W/L	- [With VG engine]
51	O	- [With VK engine]
51	SB	- [With VG engine]
52	W	- [With VK engine]
52	O	- [With VG engine]

Connector No.	F61
Connector Name	A/T ASSEMBLY
Connector Type	FK10FG-DGY



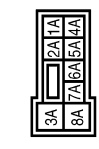
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	-
2	R	-
3	L	-
4	V	-
5	B	-
6	G	-
7	SB	-
8	P	-
9	LG	-
10	B	-

Connector No.	F001
Connector Name	TOM (TRANSMISSION CONTROL MODULE)
Connector Type	SP10FG



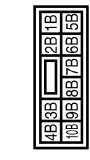
Terminal No.	Color of Wire	Signal Name [Specification]
1	W	VIGN
2	B	BATT
3	R	CAN-H
4	O	K LINE
5	G	GND
6	GR	VIGN
7	L	REV LAMP RLY
8	BR	CAN-L
9	Y	START RLY
10	W/B	GND

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS36FW-M2



Terminal No.	Color of Wire	Signal Name [Specification]
1A	R	-
2A	W	-
3A	Y	-
4A	W	-
5A	V	-
6A	Y	-
8A	Y	-

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1B	B	-
3B	P	-
4B	G	-
5B	SB	-
6B	Y	-
7B	P	-
8B	R	-
9B	R	-

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WW

# WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

## FRONT WIPER AND WASHER SYSTEM

Connector No.	M16
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	-
2	W	-
3	SB	-
4	LG	-
5	W	-
7	BG	-
8	G	-
9	Y	-
10	W	-
11	R	-
12	V	-
13	LG	-
14	L	-
15	V	-
16	B	-
17	GR	-
18	V	-
20	SB	-
21	BR	-
22	L	-
23	P	-
27	SHIELD	-
28	V	-
29	SB	-
31	BG	-
32	P	-
33	R	-
34	BG	-
40	BR	-
41	BR	-
42	L	-
43	P	-
44	BR	-
45	Y	-
46	BG	-
47	V	-
48	G	-
49	BG	-

50	W	-
60	GR	-
61	B	-
62	LG	-
62	BR	-
64	L	-
65	R	-
66	P	-
67	L	-
77	B	-
78	V	-
80	G	-
81	L	-
82	B	-
83	BG	-
84	SB	-
85	Y	-
86	L	-
87	V	-
88	V	-
89	LG	-
90	BG	-
91	W	-
92	BG	-
93	G	-
94	Y	-
95	W	-
96	R	-
97	SB	-
98	R	-
99	W	-
100	L	-

Connector No.	M20
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
11	BR	-
12	R	-
14	L	-

15	B	-
17	R	-
19	W	-
20	BR	-
21	B	-
22	R	-
23	L	-
24	L	-
27	P	-
30	SHIELD	-
31	V	-
33	V	-
35	L	-
36	P	-
38	L	-
40	Y	-

Connector No.	M22
Connector Name	PCB HARNESS
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
81	L	-
82	P	-
83	B	-
84	B	-
85	B	-
86	B	-
87	B	-
88	B	-
89	Y	-
91	V	-
92	V	-
93	B	-
94	B	-
95	LG	-
96	BR	-
97	G	-
98	G	-
99	G	-
100	G	-
101	L	-

102	P	-
103	B	-
104	BR	-
105	R	-
107	Y	-
108	Y	-
109	BR	-
110	Y	-
112	B	-
113	P	-
114	L	-
116	B	-
117	B	-
117	BG	- [With VK engine]
118	B	- [With VQ engine]
119	G	-
120	V	-



# WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

## FRONT WIPER AND WASHER SYSTEM

Connector No.	M23
Connector Name	POB HARNESS
Connector Type	TH4DFW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
121	R	-
122	V	-
123	BG	-
124	BG	-
128	BR	-
130	B	-
131	SB	-
132	LG	-
133	L	-
135	P	-
137	Y	-
138	L	-
139	P	-
140	L	-
141	W	-
142	W	-
144	P	-
145	R	-
146	LG	-
147	B	-
148	L	-
149	B	-
150	P	-
151	L	-
152	B	-
153	W	-
154	W	-
155	W	-
157	W	-
158	R	-
159	R	-

Connector No.	M27
Connector Name	POB HARNESS
Connector Type	TH4DFB-NH

Terminal No.	Color of Wire	Signal Name [Specification]
282	BG	-
283	BG	-
284	LG	-
286	W	-
287	Y	-
288	W	-
290	B	-
292	B	-
293	B	-
294	B	-
295	B	-
299	V	-
301	R	-
302	R	-
303	R	-
319	V	-
320	W	-

8	BG	OUTPUT 5
9	Y	INPUT 2
10	R	INPUT 4
11	LG	INPUT 1
12	P	OUTPUT 1
13	BR	INPUT 5
14	G	OUTPUT 2

Connector No.	M33
Connector Name	COMBINATION METER
Connector Type	TH4DFW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY POWER SUPPLY
2	BG	IGNITION SIGNAL
3	GR	VEHICLE SPEED SIGNAL (2-PULSE)
4	R	VEHICLE SPEED SIGNAL (6-PULSE)
5	B	ILLUMINATION CONTROL SIGNAL
6	B	METER CONTROL SWITCH GROUND
7	SB	ENTER SWITCH SIGNAL
8	LG	SELECT SWITCH SIGNAL
9	G	ILLUMINATION CONTROL SWITCH SIGNAL (2)
10	GR	ILLUMINATION CONTROL SWITCH SIGNAL (-)
11	L	TRIP RESET SWITCH SIGNAL
12	B	GROUND
14	L	GAIN-H
15	P	GAIN-L
16	R	AIR BAG SIGNAL
23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	W	ALTERNATOR SIGNAL
26	V	PARKING BRAKE SWITCH SIGNAL
27	V	BRAKE FLUID LEVEL SWITCH SIGNAL
28	G	SECURITY SIGNAL
29	L	WASHER LEVEL SWITCH SIGNAL
32	G	PADDLE SHIFTER SHIFT DOWN SIGNAL
33	BG	PADDLE SHIFTER SHIFT UP SIGNAL
34	G	FUEL LEVEL SENSOR SIGNAL
35	W	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G	PASSENGER SEAT BELT WARNING SIGNAL
37	G	NON-MANUAL MODE SIGNAL
38	V	MANUAL MODE SHIFT DOWN SIGNAL

39	L	MANUAL MODE SHIFT UP SIGNAL
40	W	MANUAL MODE SIGNAL

Connector No.	M106
Connector Name	WIRE TO WIRE
Connector Type	NS06MW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
3	R	-
4	BG	-
5	Y	-
6	R	-
7	B	-
8	L	-

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
3	R	-
4	BG	-
5	Y	-
6	R	-
7	B	-
8	L	-

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	BATTERY POWER SUPPLY
2	BG	IGNITION SIGNAL
3	GR	VEHICLE SPEED SIGNAL (2-PULSE)
4	R	VEHICLE SPEED SIGNAL (6-PULSE)
5	B	ILLUMINATION CONTROL SIGNAL
6	B	METER CONTROL SWITCH GROUND
7	SB	ENTER SWITCH SIGNAL
8	LG	SELECT SWITCH SIGNAL
9	G	ILLUMINATION CONTROL SWITCH SIGNAL (2)
10	GR	ILLUMINATION CONTROL SWITCH SIGNAL (-)
11	L	TRIP RESET SWITCH SIGNAL
12	B	GROUND
14	L	GAIN-H
15	P	GAIN-L
16	R	AIR BAG SIGNAL
23	B	GROUND
24	B	FUEL LEVEL SENSOR GROUND
25	W	ALTERNATOR SIGNAL
26	V	PARKING BRAKE SWITCH SIGNAL
27	V	BRAKE FLUID LEVEL SWITCH SIGNAL
28	G	SECURITY SIGNAL
29	L	WASHER LEVEL SWITCH SIGNAL
32	G	PADDLE SHIFTER SHIFT DOWN SIGNAL
33	BG	PADDLE SHIFTER SHIFT UP SIGNAL
34	G	FUEL LEVEL SENSOR SIGNAL
35	W	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G	PASSENGER SEAT BELT WARNING SIGNAL
37	G	NON-MANUAL MODE SIGNAL
38	V	MANUAL MODE SHIFT DOWN SIGNAL

Connector No.	M33
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	FR WASHER (-)
2	SB	OUTPUT 4
6	L	OUTPUT 3
6	B	GRD
7	V	INPUT 3

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	FR WASHER (-)
2	SB	OUTPUT 4
6	L	OUTPUT 3
6	B	GRD
7	V	INPUT 3

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

WW

# WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

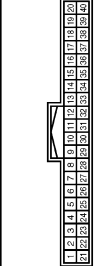
## FRONT WIPER AND WASHER SYSTEM

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-RH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	
2	Y	
3	W	
4	R	
7	BR	
8	R	
9	B	
13	L	
14	B	
15	LG	
16	Y	
17	W	
18	B	
19	B	
20	V	
21	R	
22	L	
23	L	
24	LG	

Connector No.	M120
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	RR WINDOW DEFG RLY CONT
2	BG	COMBI SW INPUT 5
3	SB	COMBI SW INPUT 4

4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	P	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	P	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	W	OPTICAL SENSOR
16	SB	DIMMER SIGNAL
17	Y	SENSOR PWR SPLY
18	B	RECEIVER / SENSOR GND
19	R	RECEIVER PWR SPLY
20	BR	KYLS ENT RECEIVER COMM
21	P	NATS ANT AMP
22	GR	KYLS ENT RECEIVER RSSI
23	G	SECURITY IND CONT
24	L	DONGLE LINK
25	G	NATS ANT AMP
26	GR	I-KEY IDENTIFICATION
29	G	HAZARD SW
30	BG	TR LID OPNR SW
31	W	DR DOOR UNLOCK SENSOR
32	BR	COMBI SW OUTPUT 5
33	R	COMBI SW OUTPUT 4
34	V	COMBI SW OUTPUT 3
35	Y	COMBI SW OUTPUT 2
36	LG	COMBI SW OUTPUT 1
37	R	P POSITION
38	P	CAN-H
40	P	CAN-L

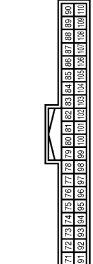
Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FE40PFW-FH46-SA



Terminal No.	Color of Wire	Signal Name [Specification]
56	R	INT ROOM LAMP PWR SPLY
57	R	BAT (FUSE)
58	L	AIR BAG
59	G	PASS DOOR UNLK OUTPUT
60	G	TURN SIG LH OUTPUT
61	V	TURN SIG RH OUTPUT
62	V	STEP LAMP CONT

63	L	ROOM LAMP TIMER CONT
65	V	ALL DOOR FL LID LOCK OUTPUT
66	LG	DR DOOR FL LID UNLK OUTPUT
67	B	GND
68	BG	PW PWR SPLY (GN)
69	V	PW PWR SPLY (BAT)
70	W	BAT (F/L)

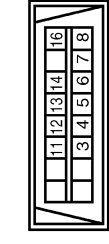
Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
72	B	OUTS HD LAMP OUTPUT
73	V	ON IND
75	G	DR DOOR REG SW
76	SB	PASS DOOR REG SW
78	BR	DRIVER DOOR ANT+
79	SB	DRIVER DOOR ANT-
80	LG	PASSENGER DOOR ANT+
81	V	PASSENGER DOOR ANT-
82	V	REAR EMPR ANT+
83	SB	REAR EMPR ANT-
84	BR	ROOM ANTI+
85	Y	ROOM ANTI-
86	R	ROOM ANTI2+
87	G	ROOM ANTI2-
88	V	TRUNK ROOM ANTI+
89	SB	TRUNK ROOM ANTI-
90	R	PUSH-BTN IGN SW ILL PWR
91	GR	LOCK IND
92	B	PUSH-BTN IGN SW ILL GND
93	V	I-KEY WARN BUZZER
94	Y	S/L UNIT COMM
95	W	S/L UNIT PWR SPLY
96	SB	ACC RELAY CONT
97	SB	STARTER RELAY CONT
98	B	IGN RELAY (P/D) E/R CONT
99	R	IGN RELAY (E/B) CONT
100	BR	PUSH SW
102	BR	P N POSITION
104	GR	A/T SHIFT SELECT PWR SPLY

105	R	STOP LAMP SW 2
106	B	BLWR RELAY CONT
107	L	S/L CONDITION1
108	P	S/L CONDITION2
109	Y	ACC IND

Connector No.	M182
Connector Name	DATA LINK CONNECTOR
Connector Type	BD18FW



Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	
4	B	
5	B	
6	L	
7	V	
8	LG	
11	SB	
12	P	
13	L	
14	P	
16	W	

# WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

## FRONT WIPER AND WASHER SYSTEM

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	HSDBFW-CS



3	2	1
8	7	6
5	4	

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
3	R	-
4	BG	-
5	Y	-
6	GR	-
7	B	-
8	BR	-

Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	THE4FW-NH



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

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	-
2	Y	-
3	W	-
4	R	-
7	R	-
8	P	-
9	B	-
13	L	-
14	L	-
15	LG	-
16	Y	-
17	W	-
18	R	-
19	B	-
20	R	-

21	R	-
22	G	-
23	L	-
24	LG	-

Connector No.	R9
Connector Name	RAIN SENSOR
Connector Type	AA609FB



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

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	HB
2	R	SIG
3	B	GND

JCLWA4206GB

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

WW

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

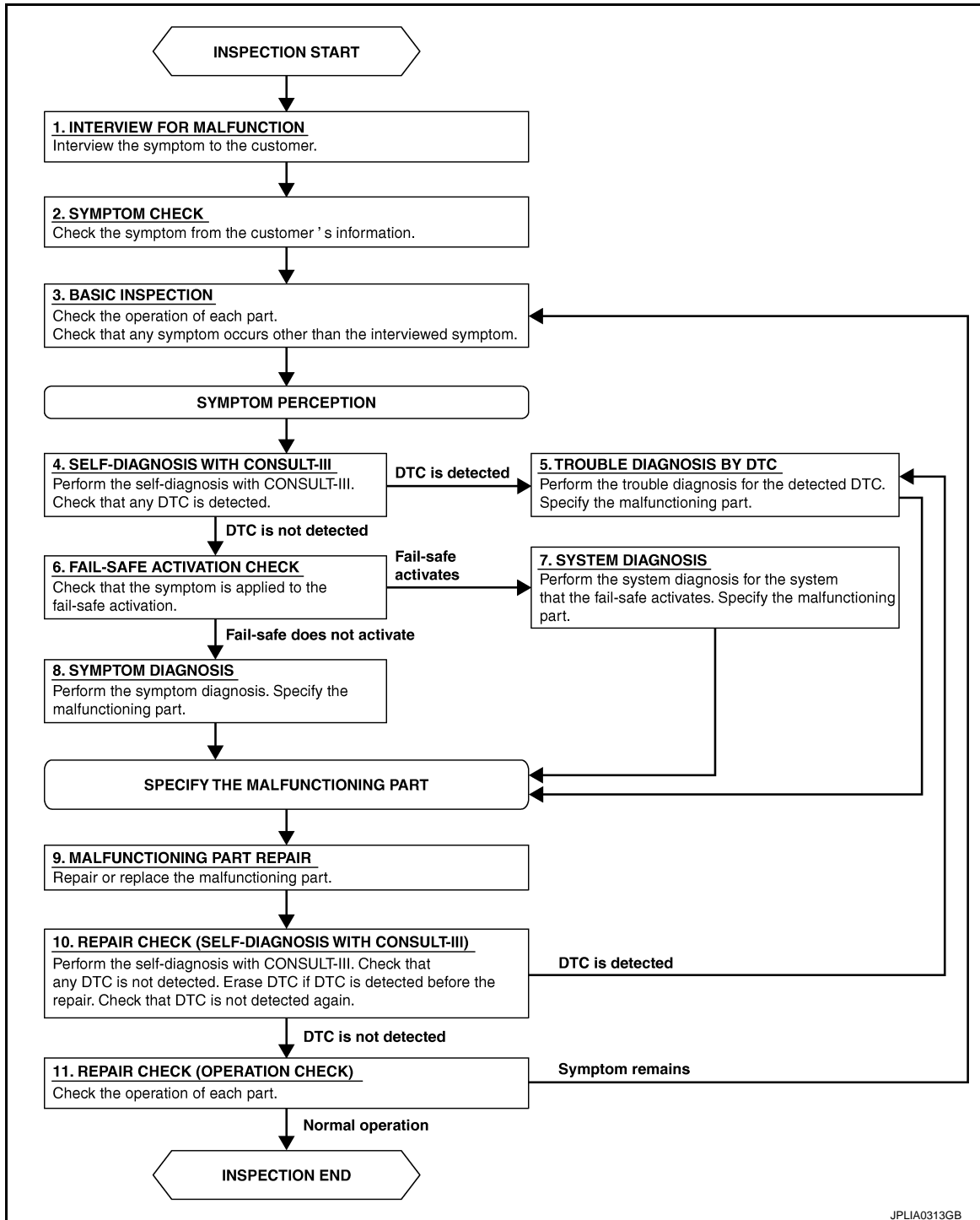
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000006046654

#### OVERALL SEQUENCE



#### DETAILED FLOW

##### 1. INTERVIEW FOR MALFUNCTION

Interview the symptom to the customer.

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

---

>> GO TO 2.

## 2. SYMPTOM CHECK

---

Check the symptom from the customer's information.

>> GO TO 3.

## 3. BASIC INSPECTION

---

Check the operation of each part. Check that any symptom occurs other than the interviewed symptom.

>> GO TO 4.

## 4. SELF-DIAGNOSIS WITH CONSULT-III

---

Perform the self-diagnosis with CONSULT-III. Check that any DTC is detected.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 6.

## 5. TROUBLE DIAGNOSIS BY DTC

---

Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part.

>> GO TO 9.

## 6. FAIL-SAFE ACTIVATION CHECK

---

Check that the symptom is applied to the fail-safe activation.

Does the fail-safe activate?

YES >> GO TO 7.

NO >> GO TO 8.

## 7. SYSTEM DIAGNOSIS

---

Perform the system diagnosis for the system that the fail-safe activates. Specify the malfunctioning part.

>> GO TO 9.

## 8. SYMPTOM DIAGNOSIS

---

Perform the symptom diagnosis. Specify the malfunctioning part.

>> GO TO 9.

## 9. MALFUNCTION PART REPAIR

---

Repair or replace the malfunctioning part.

>> GO TO 10.

## 10. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT-III)

---

Perform the self-diagnosis with CONSULT-III. Check that any DTC is not detected. Erase DTC if DTC is detected before the repair. Check that DTC is not detected again.

Is any DTC detected?

YES >> GO TO 5.

NO >> GO TO 11.

## 11. REPAIR CHECK (OPERATION CHECK)

---

Check the operation of each part.

Does it operate normally?

YES >> INSPECTION END

NO >> GO TO 3.

A

B

C

D

E

F

G

H

I

J

K

WW

M

N

O

P

## WIPER AND WASHER FUSE

< DTC/CIRCUIT DIAGNOSIS >

### DTC/CIRCUIT DIAGNOSIS

#### WIPER AND WASHER FUSE

##### Diagnosis Procedure

INFOID:000000006046655

##### 1. CHECK FUSES

Check that the following fuses are not fusing.

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	60	30 A
Washer pump	IPDM E/R	47	10 A

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the fuse with a new one after repairing the applicable circuit.

# FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR LO CIRCUIT

### Component Function Check

INFOID:000000006046656

#### 1. CHECK FRONT WIPER LO OPERATION

##### ⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [WW-14, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO operation.

##### Ⓜ CONSULT-III ACTIVE TEST

1. Select "FRONT WIPER" of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

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

**Off : Stop the front wiper.**

Is the inspection result normal?

- YES >> Front wiper motor LO circuit is normal.  
 NO >> Refer to [WW-31, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000006046657

#### 1. CHECK FRONT WIPER MOTOR (LO) INPUT VOLTAGE

##### Ⓜ CONSULT-III ACTIVE TEST

1. Turn ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn ignition switch ON.
4. Select "FRONT WIPER" of IPDM E/R active test item.
5. With operating the test item, check voltage between front wiper motor harness connector and ground.

(+)		(-)	Condition		Voltage (Approx.)
Front wiper motor					
Connector	Terminal	Ground	FRONT WIPER	Lo	Battery voltage
E42	3				

Is the inspection result normal?

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

#### 2. CHECK FRONT WIPER MOTOR (LO) CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
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	
E7	54	E42	3	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E7	54		Not existed

Is the inspection result normal?

- YES >> Replace IPDM E/R.  
 NO >> Repair or replace harness.

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

WW

## FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

1. Turn ignition switch OFF.
2. Remove wiper reverse relay.
3. Check continuity between wiper reverse relay harness connector and ground.

Wiper reverse relay		Ground	Continuity
Connector	Terminal		
E44	4		Existed

Is the inspection result normal?

- YES >> Replace front wiper motor.  
NO >> Repair or replace harness.



# FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR HI CIRCUIT

### Component Function Check

INFOID:000000006046658

#### 1. CHECK FRONT WIPER HI OPERATION

##### ⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [WW-14, "Diagnosis Description"](#).
2. Check that the front wiper operates at the HI operation.

##### Ⓜ CONSULT-III ACTIVE TEST

1. Select "FRONT WIPER" of IPDM E/R active test item.
2. With operating the test item, check front wiper operation.

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

**Off** : Stop the front wiper.

Is the inspection result normal?

- YES >> Front wiper motor HI circuit is normal.  
NO >> Refer to [WW-33, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000006046659

#### 1. CHECK FRONT WIPER MOTOR (HI) INPUT VOLTAGE

##### Ⓜ CONSULT-III ACTIVE TEST

1. Turn ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn ignition switch ON.
4. Select "FRONT WIPER" of IPDM E/R active test item.
5. With operating the test item, check voltage between front wiper motor harness connector and ground.

(+)		(-)	Condition		Voltage (Approx.)
Front wiper motor					
Connector	Terminal	Ground	FRONT WIPER	Hi	Battery voltage
E42	1				

Is the inspection result normal?

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

#### 2. CHECK FRONT WIPER MOTOR (HI) CIRCUIT-1 (SHORT TO BATTERY)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check voltage between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Voltage (Approx.)
Connector	Terminal		
E7	53		0 V

Is the inspection result normal?

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

#### 3. CHECK FRONT WIPER MOTOR (HI) CIRCUIT-2 (OPEN & SHORT TO GROUND)

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

# FRONT WIPER MOTOR HI CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E7	53	E42	2	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E7	53		Not existed

Is the inspection result normal?

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

### 4. CHECK FRONT WIPER MOTOR (HI) GROUND CIRCUIT

#### CONSULT-III ACTIVE TEST

1. Turn ignition switch OFF.
2. Connect IPDM E/R connector.
3. Turn ignition switch ON.
4. Select "FRONT WIPER" of IPDM E/R active test item.
5. With operating the test item, check continuity between front wiper motor harness connector and ground.

(+)		(-)	Condition	Continuity
Front wiper motor				
Connector	Terminal			
E7	53	Ground	FRONT WIPER	Hi Off
				Existed Not existed

Is the inspection result normal?

- YES >> Replace front wiper motor.  
 NO >> Replace IPDM E/R.

### 5. CHECK FRONT WIPER MOTOR (HI) POWER SUPPLY

1. Turn ignition switch OFF.
2. Remove wiper reverse relay.
3. Check voltage between wiper reverse relay harness connector and ground.

(+)		(-)	Voltage (Approx.)
Wiper reverse relay			
Connector	Terminal		
E44	5	Ground	Battery voltage

Is the inspection result normal?

- YES >> Check wiper reverse relay circuit. Refer to [WW-38, "Diagnosis Procedure"](#).  
 NO >> GO TO 6.

### 6. CHECK FRONT WIPER MOTOR (HI) POWER SUPPLY CIRCUIT

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

IPDM E/R		Wiper reverse relay		Continuity
Connector	Terminal	Connector	Terminal	
E8	88	E44	5	Existed

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

# FRONT WIPER MOTOR HI CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		Ground	Continuity
Connector	Terminal		
E8	88		Not existed

Is the inspection result normal?

- YES >> Replace IPDM E/R.
- NO >> Repair or replace harness.

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

WW

# FRONT WIPER POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER POSITION SIGNAL CIRCUIT

### Component Function Check

INFOID:000000006046660

#### 1. CHECK FRONT WIPER POSITION SIGNAL

##### CONSULT-III DATA MONITOR

1. Select "WIP AUTO STOP" of IPDM E/R data monitor item.
2. Operate the front wiper.
3. With the front wiper operation, check the monitor status.

Monitor item	Condition		Monitor status
WIP AUTO STOP	Front wiper motor	Stop position	STOP P
		Except stop position	ACT P

Is the inspection result normal?

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

### Diagnosis Procedure

INFOID:000000006046661

#### 1. CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10 A fuse, [No. 47, located in IPDM E/R].

Is the inspection result normal?

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

#### 2. CHECK FRONT WIPER MOTOR INPUT VOLTAGE

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

(+)		(-)	Voltage (Approx.)
Front wiper motor			
Connector	Terminal	Ground	Battery voltage
E42	4		

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> GO TO 3.

#### 3. CHECK FRONT WIPER MOTOR POSITION SIGNAL POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
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	
E7	51	E42	4	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E7	51		Not existed

Is the inspection result normal?

# FRONT WIPER POSITION SIGNAL CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

- YES >> Replace IPDM E/R.  
NO >> Repair or replace harness.

### 4. CHECK FRONT WIPER MOTOR POSITION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
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	
E5	16	E42	5	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E5	16		Not existed

Is the inspection result normal?

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

### 5. CHECK FRONT WIPER MOTOR POSITION SIGNAL GROUND CIRCUIT

Check continuity between front wiper motor harness connector and ground.

Front wiper motor		Ground	Continuity
Connector	Terminal		
E42	6		Existed

Is the inspection result normal?

- YES >> Replace front wiper motor.  
NO >> Repair or replace harness.

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# WIPER REVERSE RELAY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## WIPER REVERSE RELAY CIRCUIT

### Diagnosis Procedure

INFOID:00000006046670

#### 1. CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10 A fuse, [No. 3, located in fuse block (J/B)].

Is the inspection result normal?

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

#### 2. CHECK WIPER REVERSE RELAY CONTROL SIGNAL

##### ⓂCONSULT-III ACTIVE TEST

1. Turn ignition switch ON.
2. Select "FRONT WIPER" of IPDM E/R active test item.
3. With operating the test item, check voltage between IPDM E/R harness connector and ground.

(+)		(-)	Condition	Voltage (Approx.)	
IPDM E/R				Lo	Hi
Connector	Terminal	Ground	FRONT WIPER		
E9	96			Ground	FRONT WIPER
		Hi	0 V		

Is the inspection result normal?

- YES >> GO TO 5.  
 Fixed at 0 V>>GO TO 3.  
 Fixed at battery voltage>>Replace IPDM E/R.

#### 3. CHECK WIPER REVERSE RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Remove wiper reverse relay.
3. Check voltage between wiper reverse relay harness connector and ground.

Wiper reverse relay		Ground	Voltage (Approx.)	
Connector	Terminal		Battery voltage	
E44	1			Battery voltage

Is the inspection result normal?

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

#### 4. CHECK WIPER REVERSE RELAY CONTROL CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and wiper reverse relay harness connector.

IPDM E/R		Wiper reverse relay		Continuity
Connector	Terminal	Connector	Terminal	
E9	96	E44	2	Existed

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

IPDM E/R		Ground	Continuity	
Connector	Terminal			
E9	96		Not existed	

Is the inspection result normal?

- YES >> GO TO 6.

# WIPER REVERSE RELAY CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

NO >> Repair or replace harness.

### 5.CHECK WIPER REVERSE RELAY-1

Check wiper reverse relay.Refer to [WW-39, "Component Inspection"](#)

Is the inspection result normal?

YES >> Wiper reverse relay circuit is normal.

NO >> Replace wiper reverse relay.

### 6.CHECK WIPER REVERSE RELAY-2

Check wiper reverse relay.Refer to [WW-39, "Component Inspection"](#)

Is the inspection result normal?

YES >> Replace IPDM E/R.

NO >> Replace wiper reverse relay.

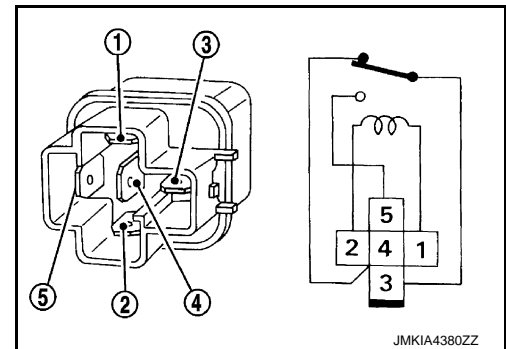
## Component Inspection

INFOID:000000006052849

### 1.CHECK WIPER REVERSE RELAY

1. Turn ignition switch OFF.
2. Remove wiper reverse relay.
3. Check continuity between wiper reverse relay terminals.

Wiper reverse relay		Condition	Continuity
Terminal			
3	4	12 V direct current supply between terminals 1 and 2	Not existed
		No current supply	Existed
	5	12 V direct current supply between terminals 1 and 2	Existed
		No current supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace wiper reverse relay.

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# RAIN SENSOR

< DTC/CIRCUIT DIAGNOSIS >

## RAIN SENSOR

### Component Function Check

INFOID:000000006046663

#### 1.CHECK FRONT WIPER AUTO OPERATION

1. Clean rain sensor detection area of windshield fully.
2. When the front wiper switch is turned to AUTO position, front wiper operates once regardless of a rainy condition.

Is front wiper (AUTO) operation normally?

- YES >> Rain sensor circuit is normal.  
NO >> Refer to [WW-40, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000006046664

#### 1.CHECK FUSE

1. Turn the ignition switch OFF.
2. Check 10A fuse, [No.6, located in fuse block (J/B)].

Is the inspection result normal?

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

#### 2.CHECK RAIN SENSOR POWER SUPPLY

1. Disconnect rain sensor connector.
2. Check voltage between rain sensor harness connector and ground.

(+)		(-)	Voltage (Approx.)
Rain sensor			
Connector	Terminal	Ground	Battery voltage
R9	1		

Is the inspection result normal?

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

#### 3.CHECK RAIN SENSOR GROUND CIRCUIT

Check continuity between rain sensor harness connector and ground.

Rain sensor		Ground	Continuity
Connector	Terminal		
R9	3		Existed

Is the inspection result normal?

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

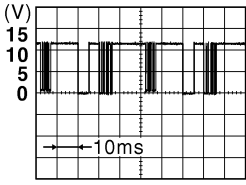
#### 4.CHECK RAIN SENSOR SIGNAL

1. Connect rain sensor connector.
2. Turn ignition switch ON.
3. Check signal between BCM harness connector and ground using oscilloscope.



# RAIN SENSOR

## < DTC/CIRCUIT DIAGNOSIS >

(+)		(-)	Condition	Signal (Reference value)
BCM				
Connector	Terminal			
M120	11	Ground	Ignition switch ON	 <p style="text-align: right; font-size: small;">JPMIA0156GB Approx. 8.7V</p>

Is the inspection result normal?

YES >> Replace rain sensor.

NO >> GO TO 5.

### 5. CHECK RAIN SENSOR SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and rain sensor connector.
3. Check continuity between BCM harness connector and rain sensor harness connector.

BCM		Rain sensor		Continuity
Connector	Terminal	Connector	Terminal	
M120	11	R9	2	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M120	11		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-79, "Removal and Installation"](#).

NO >> Repair or replace harness.

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# WASHER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

## WASHER SWITCH

### Component Inspection

INFOID:000000006052848

#### 1. CHECK WIPER SWITCH

1. Turn the ignition switch OFF.
2. Disconnect combination switch connector.
3. Check continuity between the combination switch terminals.

Combination switch		Condition	Continuity
Terminal			
1	6	Front washer switch ON	Existed

Is the inspection result normal?

- YES >> Washer switch is normal.  
NO >> Replace washer switch.

# WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### WIPER AND WASHER SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000006046673

Symptom	Probable malfunction location	Inspection item	
Front wiper does not operate	HI only	<ul style="list-style-type: none"> <li>• Combination switch</li> <li>• Harness between combination switch and BCM</li> <li>• BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-78, "Symptom Table"</a>
		<ul style="list-style-type: none"> <li>• IPDM E/R</li> <li>• Harness between IPDM E/R and front wiper motor</li> <li>• Harness between IPDM E/R and wiper reverse relay</li> <li>• Front wiper motor</li> </ul>	Front wiper motor (HI) circuit Refer to <a href="#">WW-33, "Component Function Check"</a>
		<ul style="list-style-type: none"> <li>• Wiper reverse relay</li> <li>• Harness between IPDM E/R and wiper reverse relay</li> </ul>	Wiper reverse relay circuit Refer to <a href="#">WW-38, "Diagnosis Procedure"</a>
		<ul style="list-style-type: none"> <li>• Front wiper request signal</li> <li>• BCM</li> <li>• IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
	Lo and AUTO	<ul style="list-style-type: none"> <li>• Combination switch</li> <li>• Harness between combination switch and BCM</li> <li>• BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-78, "Symptom Table"</a>
		<ul style="list-style-type: none"> <li>• Wiper reverse relay</li> <li>• Harness between IPDM E/R and wiper reverse relay</li> </ul>	Wiper reverse relay circuit Refer to <a href="#">WW-38, "Diagnosis Procedure"</a>
		<ul style="list-style-type: none"> <li>• IPDM E/R</li> <li>• Harness between IPDM E/R and front wiper motor</li> <li>• Harness between wiper reverse relay and ground</li> <li>• Front wiper motor</li> </ul>	Front wiper motor (LO) circuit Refer to <a href="#">WW-31, "Component Function Check"</a>
		<ul style="list-style-type: none"> <li>• Front wiper request signal</li> <li>• BCM</li> <li>• IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
	AUTO only	<ul style="list-style-type: none"> <li>• Combination switch</li> <li>• Harness between combination switch and BCM</li> <li>• BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-78, "Symptom Table"</a>
		<ul style="list-style-type: none"> <li>• Rain sensor</li> <li>• Harness between rain sensor and BCM</li> <li>• BCM</li> </ul>	Rain sensor Refer to <a href="#">WW-40, "Component Function Check"</a>
	HI, LO and AUTO	SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to <a href="#">WW-46, "Diagnosis Procedure"</a> .	

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# WIPER AND WASHER SYSTEM SYMPTOMS

## < SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Front wiper does not stop	HI only	<ul style="list-style-type: none"> <li>• Combination switch</li> <li>• BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-78, "Symptom Table"</a>
		Front wiper request signal <ul style="list-style-type: none"> <li>• BCM</li> <li>• IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	LO only	<ul style="list-style-type: none"> <li>• Combination switch</li> <li>• BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-78, "Symptom Table"</a>
		Front wiper request signal <ul style="list-style-type: none"> <li>• BCM</li> <li>• IPDM E/R</li> </ul>	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	AUTO only	<ul style="list-style-type: none"> <li>• Combination switch</li> <li>• BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-78, "Symptom Table"</a>
		<ul style="list-style-type: none"> <li>• Rain sensor</li> <li>• Harness between rain sensor and BCM</li> <li>• BCM</li> </ul>	Rain sensor Refer to <a href="#">WW-40, "Component Function Check"</a>
	Front wiper does not operate normally	Sensitivity adjustment cannot be performed.	<ul style="list-style-type: none"> <li>• Combination switch</li> <li>• Harness between combination switch and BCM</li> <li>• BCM</li> </ul>
BCM			—
Auto wiping operation does not operate		Check that the wiper setting is auto wiping operation Refer to <a href="#">WW-12, "WIPER : CONSULT-III Function (BCM - WIPER)"</a>	
Wiper is not linked to the washer operation.		<ul style="list-style-type: none"> <li>• Combination switch</li> <li>• Harness between combination switch and BCM</li> <li>• BCM</li> </ul>	Combination switch Refer to <a href="#">BCS-78, "Symptom Table"</a>
		BCM	—
Upper or lower reversal position is passed.		<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 position signal circuit Refer to <a href="#">WW-36, "Component Function Check"</a>
		HI with LO wiping angle.	Harness between IPDM E/R and front wiper motor
IPDM E/R			—
Does not return to stop position.		Wiper reverse relay	Wiper reverse relay circuit Refer to <a href="#">WW-38, "Diagnosis Procedure"</a>
Does not return to stop position. [Repeatedly operates for 10 seconds and then stops for 20 seconds. (Fail-safe)]		<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 position signal circuit Refer to <a href="#">WW-36, "Component Function Check"</a>

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

## NORMAL OPERATING CONDITION

---

### Description

INFOID:000000006046674

#### FRONT WIPER MOTOR PROTECTION FUNCTION

- IPDM E/R may stop the front wiper to protect the front wiper motor if any obstruction (operation resistance) such as a large amount of snow is detected during the front wiper operation.
- At that time turn OFF the front wiper and remove the foreign object. Then wait for approximately 20 seconds or more and reactivate the front wiper. The wiper will operate normally.

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# FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

## FRONT WIPER DOES NOT OPERATE

### Description

INFOID:000000006046675

The front wiper does not operate under any operation conditions.

### Diagnosis Procedure

INFOID:000000006046676

#### 1. CHECK WIPER RELAY OPERATION

##### ⊗ IPDM E/R AUTO ACTIVE TEST

1. Start IPDM E/R auto active test. Refer to [WW-14, "Diagnosis Description"](#).
2. Check that the front wiper operates at the LO/Hi operation.

##### Ⓟ CONSULT-III ACTIVE TEST

1. Turn ignition switch ON.
2. Select "FRONT WIPER" of IPDM E/R active test item.
3. With operating the test item, check front wiper operation.

**Lo** : Front wiper LO operation

**Hi** : Front wiper HI operation

**Off** : Stop the front wiper.

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 2.

#### 2. CHECK FRONT WIPER MOTOR FUSE

Check front wiper motor fuse. Refer to [WW-30, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.

#### 3. CHECK FRONT WIPER MOTOR INPUT VOLTAGE

##### Ⓟ CONSULT-III ACTIVE TEST

1. Turn ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn ignition switch ON.
4. Select "FRONT WIPER" of IPDM E/R active test item.
5. With operating the test item, check voltage between front wiper motor harness connector and ground.

(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
E42	3	Ground	Lo	Battery voltage
			Off	0 V
	1		Hi	Battery voltage
			Off	

Is the inspection result normal?

YES >> Replace front wiper motor.

NO >> GO TO 4.

#### 4. CHECK FRONT WIPER MOTOR (HI/LO) CIRCUIT

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

# FRONT WIPER DOES NOT OPERATE

## < SYMPTOM DIAGNOSIS >

Front wiper motor		Wiper reverse relay		Continuity
Connector	Terminal	Connector	Terminal	
E42	1	E44	3	Existed

4. Check continuity between front wiper motor harness connector and ground.

Front wiper motor		Ground	Continuity
Connector	Terminal		
E42	1		Not existed

Is the inspection result normal?

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

### 5. CHECK WIPER REVERSE RELAY

Check wiper reverse relay [WW-39, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace IPDM E/R.  
 NO >> Replace wiper reverse relay.

### 6. CHECK FRONT WIPER REQUEST SIGNAL INPUT

#### Ⓜ CONSULT-III DATA MONITOR

- Select "FR WIP REQ" of IPDM E/R data monitor item.
- Switch the front wiper switch to HI and LO.
- With operating the front wiper switch, check the status of "FR WIP REQ".

Monitor item	Condition	Monitor status
FR WIP REQ	Front wiper switch	Hi
		Low
		Stop

Is the inspection result normal?

- YES >> Replace IPDM E/R.  
 NO >> GO TO 7.

### 7. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-78, "Symptom Table"](#).

Is combination switch normal?

- YES >> Replace BCM. Refer to [BCS-79, "Removal and Installation"](#).  
 NO >> Repair or replace the applicable parts.

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# WASHER TANK

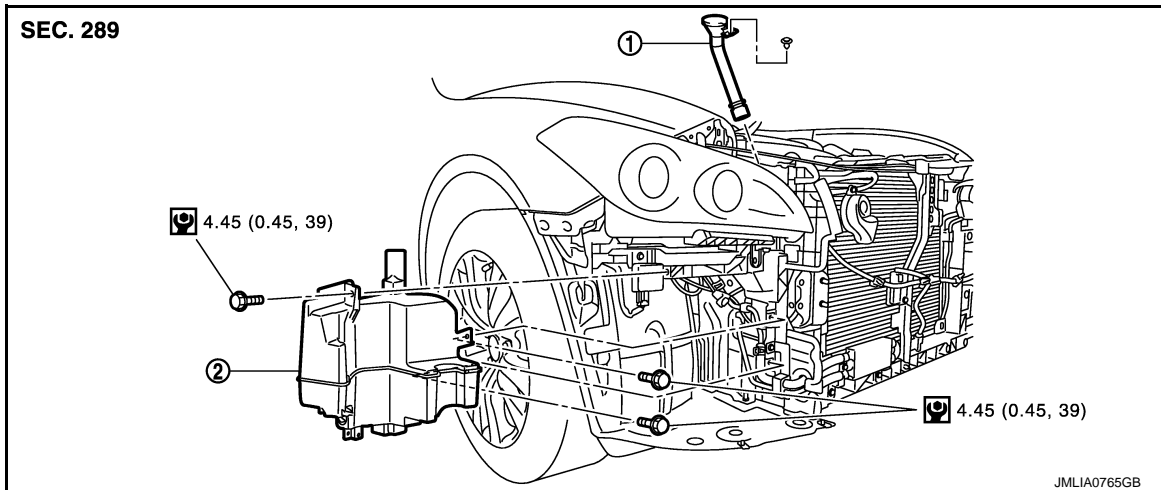
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### WASHER TANK

Exploded View

INFOID:000000006109667



1. Washer tank inlet                      2. Washer tank

Refer to [GI-4, "Components"](#) for the symbols in the figure.

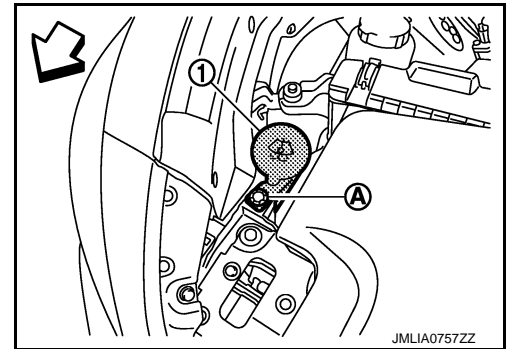
### Removal and Installation

INFOID:000000006046682

#### REMOVAL

1. Remove washer tank inlet fixing clip (A).
2. Pull out washer tank inlet (1) from washer tank.

↔ : Vehicle front



3. Remove front bumper fascia and bumper reinforcement. Refer to [EXT-14, "Removal and Installation"](#).
4. Remove fender protector RH (front). Refer to [EXT-24, "FENDER PROTECTOR : Removal and Installation"](#).
5. Disconnect washer pump connector.
6. Disconnect front washer tube.
7. Remove washer tank mounting bolts.
8. Remove washer tank from the vehicle.

#### INSTALLATION

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

#### **CAUTION:**

**Add water up to the top of the washer tank inlet after installation. Check that there is no leakage.**



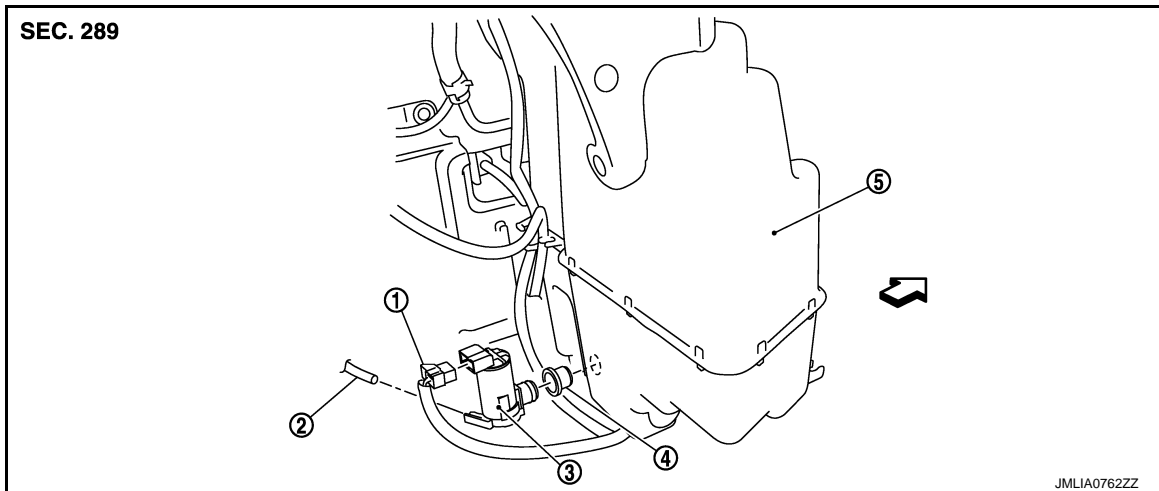
# WASHER PUMP

< REMOVAL AND INSTALLATION >

## WASHER PUMP

Exploded View

INFOID:000000006109670



- |                          |                      |                |
|--------------------------|----------------------|----------------|
| 1. Washer pump connector | 2. Front washer tube | 3. Washer pump |
| 4. Packing               | 5. Washer tank       |                |

↔ : Vehicle front

## Removal and Installation

INFOID:000000006046684

### REMOVAL

1. Remove fender protector RH (front). Refer to [EXT-24, "FENDER PROTECTOR : Removal and Installation"](#).
2. Disconnect washer pump connector.
3. Disconnect front washer tube.
4. Remove washer pump from washer tank.
5. Remove packing from washer tank.

### INSTALLATION

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

**CAUTION:**

**Never twist the packing when installing the washer pump.**

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## WASHER LEVEL SWITCH

< REMOVAL AND INSTALLATION >

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### WASHER LEVEL SWITCH

#### Removal and Installation

INFOID:000000006136337

The washer level switch must be replaced together with the washer tank as an assembly. Refer to [WW-48](#), "[Removal and Installation](#)".

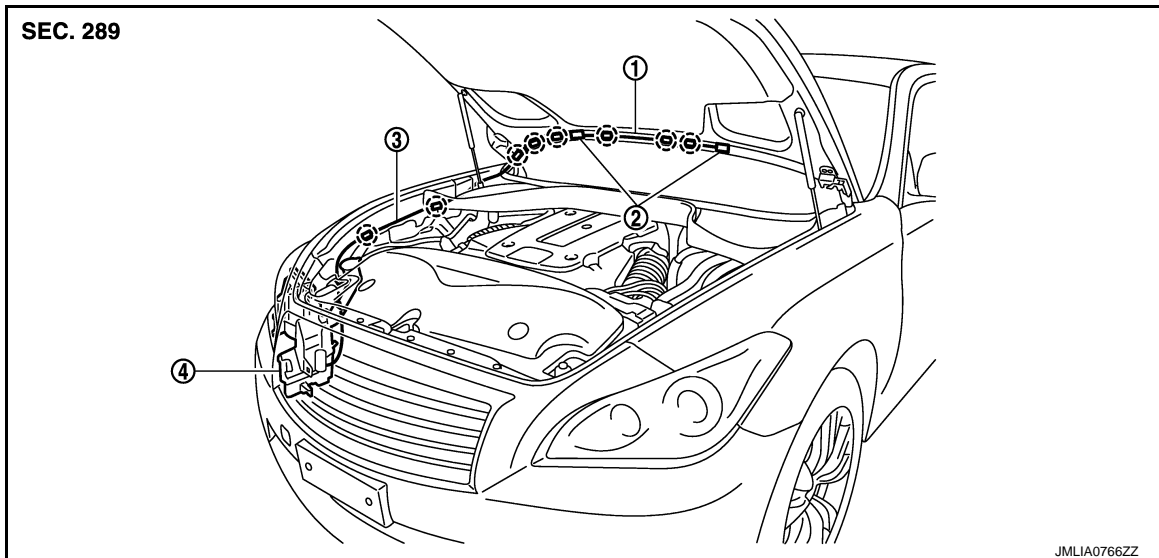
# FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## FRONT WASHER NOZZLE AND TUBE

### Hydraulic Layout

INFOID:000000006109671



1. Seal rubber
  2. Front washer nozzle
  3. Front washer tube
  4. Washer tank
- : Clip

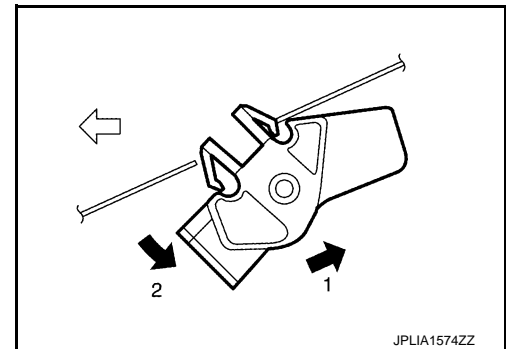
### Removal and Installation

INFOID:000000006112898

#### REMOVAL

1. Fully open hood assembly.
2. Remove the front washer nozzle in numerical order as shown in the figure.

⇐ : Hood front



3. Remove seal rubber from front washer nozzle.  
**CAUTION:**  
**Be careful not to damage seal rubber when removing**
4. Disconnect front washer tube from front washer nozzle.

#### INSTALLATION

1. Connect the front washer tube into the front washer nozzle.
2. Install the seal rubber.  
**NOTE:**  
Apply adhesive on seal rubber before installation, if front washer nozzle has been removed.
3. Install the front washer nozzle to the hood.  
**NOTE:**  
The spray positions differ. Check that left and right nozzles are installed correctly.
4. Adjust the front washer nozzle spray position. Refer to [WW-52, "Inspection and Adjustment"](#).

# FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

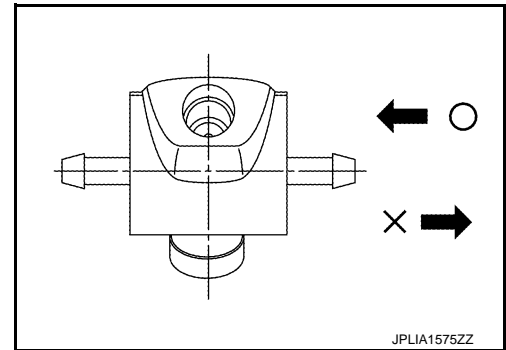
## Inspection and Adjustment

INFOID:000000006112899

### INSPECTION

#### Washer Nozzle Inspection

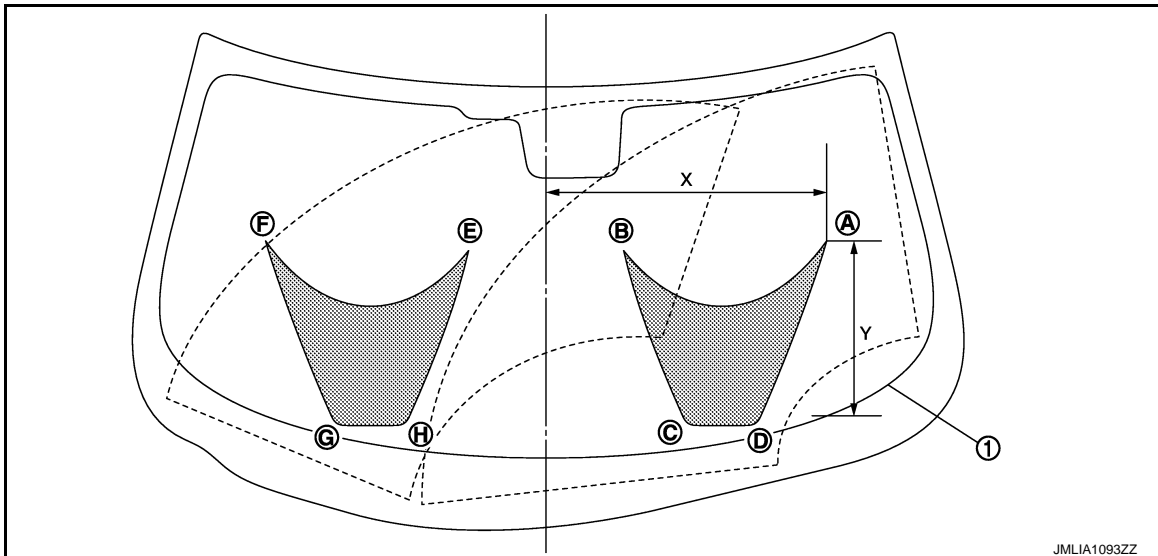
Check that air can pass through the hose by blowing forward (toward the nozzle), and check that air cannot pass through by sucking.



### ADJUSTMENT

#### Washer Nozzle Spray Position Adjustment

Adjust spray positions to match the positions shown in the figure.



1. Black printed frame line

 : Spray area

Unit: mm (in)

	Driver side				Passenger side			
	A	B	C	D	E	F	G	H
X	467 (18.39)	139 (5.47)	247 (9.72)	366 (14.41)	139 (5.47)	497 (19.57)	366 (14.41)	247 (9.72)
Y	366 (14.41)	418 (16.46)	53 (2.09)	37 (1.46)	418 (16.46)	366 (14.41)	37 (1.46)	53 (2.09)

**CAUTION:**

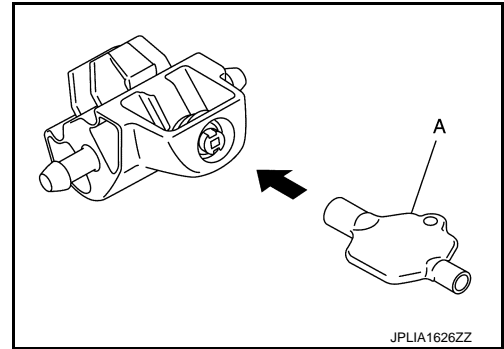
## FRONT WASHER NOZZLE AND TUBE

### < REMOVAL AND INSTALLATION >

- Use washer nozzle adjuster\* (A) for nozzle adjustment.
  - Never use needle or small pin.
- (Washer nozzle adjuster is included with shipment of nozzle)

#### NOTE:

If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.



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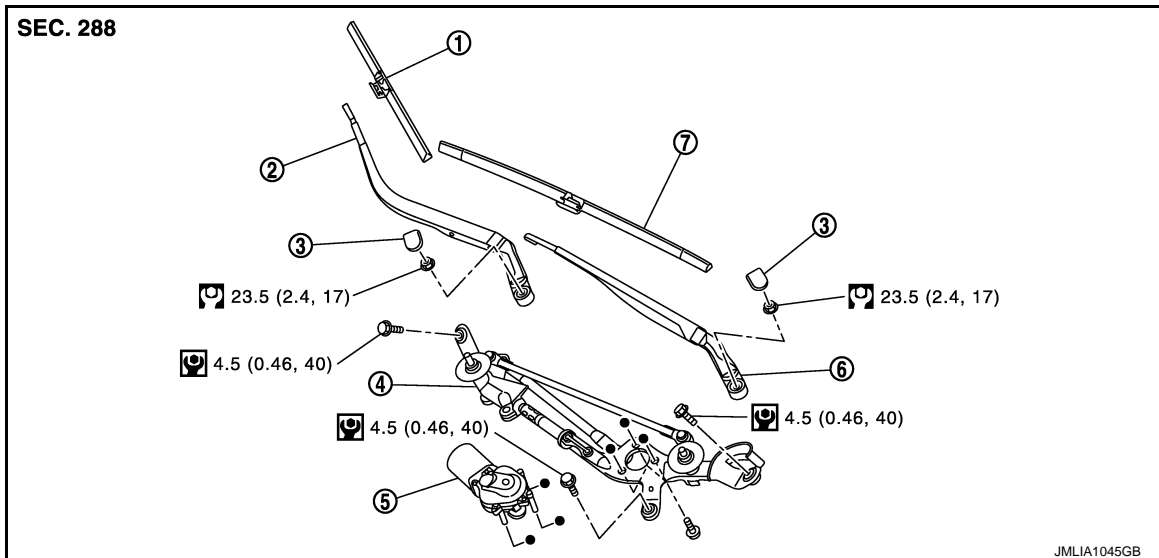
# FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

## FRONT WIPER ARM

Exploded View

INFOID:000000006046692



- |                               |                       |                        |
|-------------------------------|-----------------------|------------------------|
| 1. Front wiper blade RH       | 2. Front wiper arm RH | 3. Front wiper arm cap |
| 4. Front wiper drive assembly | 5. Front wiper motor  | 6. Front wiper arm LH  |
| 7. Front wiper blade LH       |                       |                        |

Refer to [GI-4, "Components"](#) for symbols in the figure.

## Removal and Installation

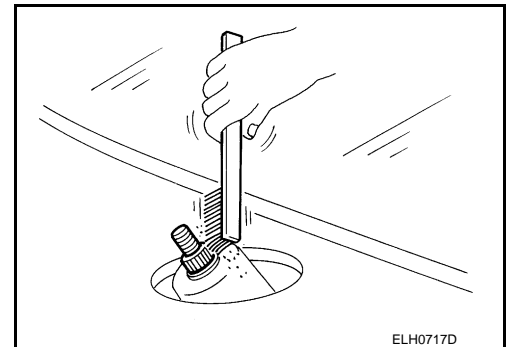
INFOID:000000006046693

### REMOVAL

1. Operate the front wiper to move it to the auto stop position.
2. Open the hood.
3. Remove the front wiper arm cap.
4. Remove the front wiper arm mounting nut.
5. Raise front wiper arm, and remove front wiper arm from the vehicle.

### INSTALLATION

1. Clean wiper arm mount as shown in the figure to prevent nuts from being loosened.
2. Operate the front wiper motor to move the front wiper to the auto stop position.
3. Adjust the front wiper blade position. Refer to [WW-54, "Adjustment"](#).
4. Install the front wiper arm by tightening the mounting nuts.
5. Inject the washer fluid.
6. Operate the front wiper to move it to the auto stop position.
7. Check that the front wiper blades stop at the specified position.
8. Install the front wiper arm caps.



## Adjustment

INFOID:000000006046694

### WIPER BLADE POSITION ADJUSTMENT

- Driver side (L): Clearance between the end of cowl top cover and the wiper blade tip (top of wiper blade center)

# FRONT WIPER ARM

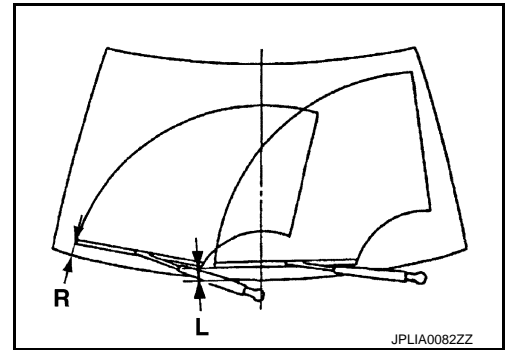
## < REMOVAL AND INSTALLATION >

- Passenger side (R): Clearance between the end of front fender cover and the wiper blade tip (top of wiper blade center)

Standard clearance

**R** :  $34.5 \pm 7.5$  mm ( $1.358 \pm 0.295$  in)

**L** :  $37.0 \pm 7.5$  mm ( $1.457 \pm 0.295$  in)



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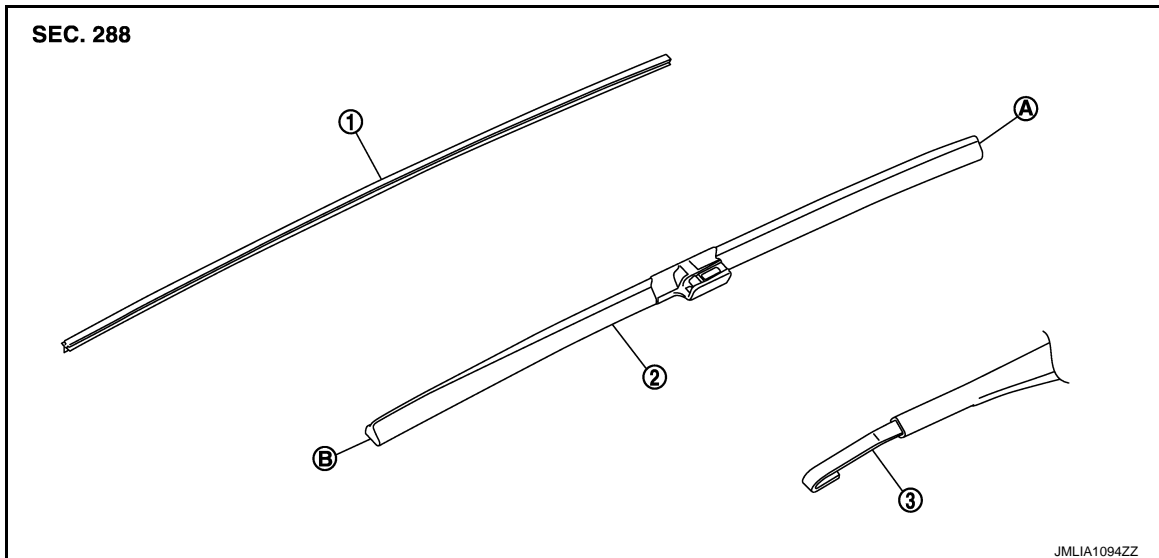
# FRONT WIPER BLADE

< REMOVAL AND INSTALLATION >

## FRONT WIPER BLADE

Exploded View

INFOID:000000006112979



- 1. Wiper refill
- 2. Wiper blade
- 3. Wiper arm
- A. Wiper blade end
- B. Wiper blade tip

## Removal and Installation

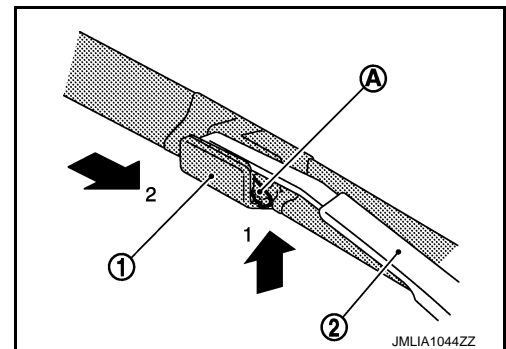
INFOID:000000006112980

### REMOVAL

1. Push up the lever (A) of wiper blade (1), while sliding wiper blade toward the direction of the arrow, to remove it from wiper arm (2).

**CAUTION:**

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



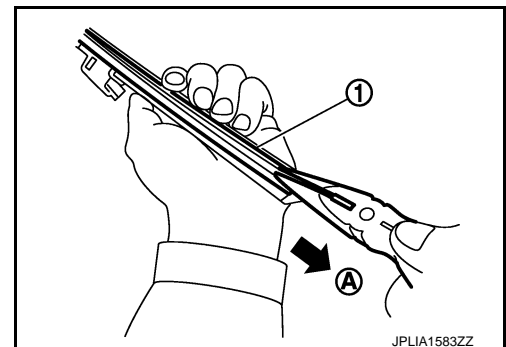
### INSTALLATION

1. Install wiper blade into wiper arm.
2. Install wiper arm.

### Replacement

INFOID:000000006112981

1. Hold the rip of old wiper refill (1) at the rear end of the wiper blade with long-nose pliers, and pull out the wiper refill to the direction (A).





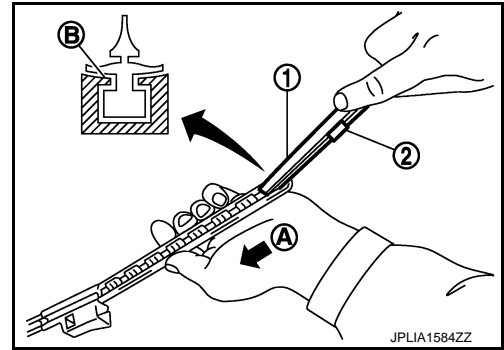
# FRONT WIPER BLADE

## < REMOVAL AND INSTALLATION >

2. Insert the tip of new wiper refill (1) into the rear end of wiper blade. Slide the wiper refill to the direction (A) while pressing the wiper refill onto the wiper blade rear end.

**NOTE:**

- Insert the wiper refill to be held securely by tab (B) of wiper blade.
  - After the wiper refill is fully inserted, remove the holder\* (2).
- \*: Attached to service parts.

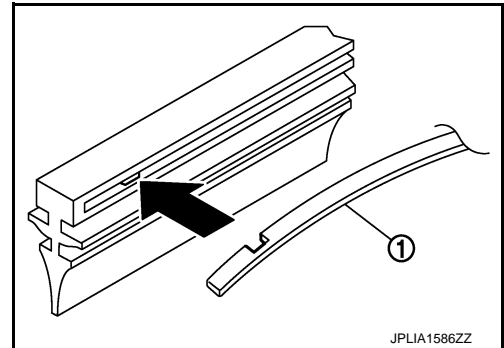
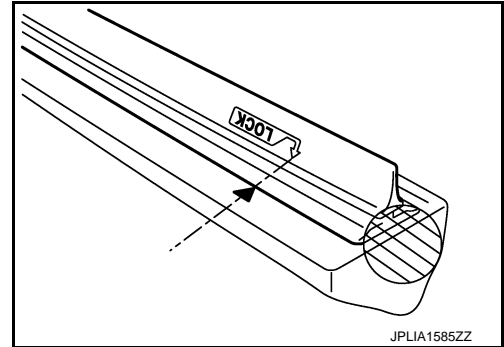


3. Insert the wiper refill until the stopper at the rear end of wiper refill fits in the tab. Check that "LOCK" mark on wiper refill is aligned with "▼" mark on wiper blade.
4. Untwist the twisted wiper refill (▨) at the rear end of wiper blade, if any.
5. Check the following items after replacing wiper refill.
  - Wiper refill is not twisted at all.
  - Wiper refill thoroughly fits in the tab on wiper blade.
  - Wiper refill is inserted from the proper direction.

**NOTE:**

When the vertebra is detached.

- Insert the vertebra (1) into the wiper blade to the same bending direction.
- If a vertebra has a notch, fit it to a protrusion inside the wiper refill.



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# FRONT WIPER DRIVE ASSEMBLY

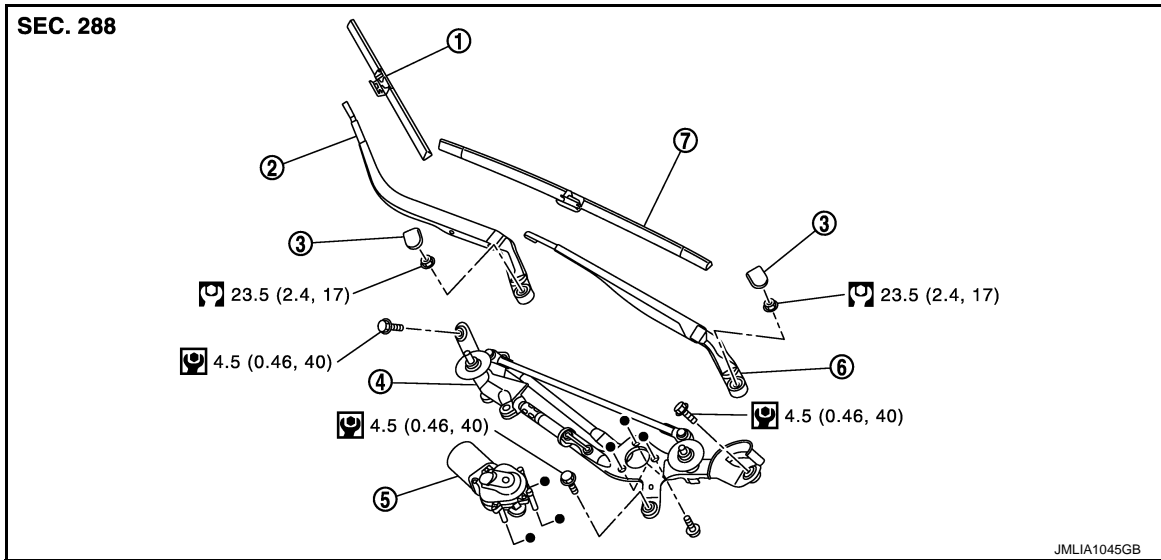
< REMOVAL AND INSTALLATION >

## FRONT WIPER DRIVE ASSEMBLY

Exploded View

INFOID:000000006046696

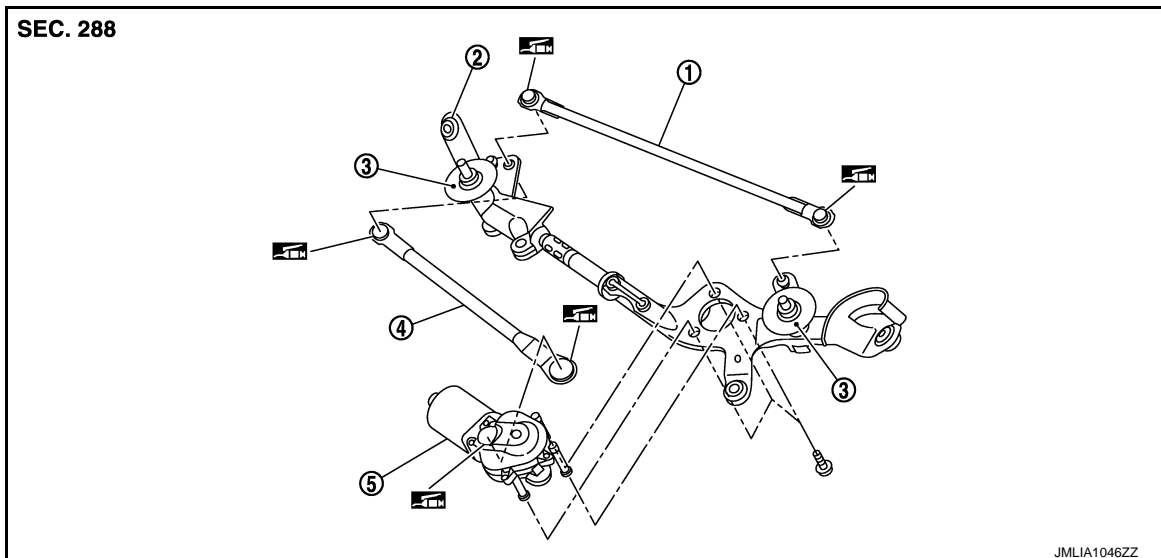
### REMOVAL



- |                               |                       |                        |
|-------------------------------|-----------------------|------------------------|
| 1. Front wiper blade RH       | 2. Front wiper arm RH | 3. Front wiper arm cap |
| 4. Front wiper drive assembly | 5. Front wiper motor  | 6. Front wiper arm LH  |
| 7. Front wiper blade LH       |                       |                        |

Refer to [GI-4, "Components"](#) for the symbols in the figure.

### DISASSEMBLY



- |                          |                      |               |
|--------------------------|----------------------|---------------|
| 1. Front wiper linkage 1 | 2. Front wiper frame | 3. Shaft seal |
| 4. Front wiper linkage 2 | 5. Front wiper motor |               |

: Multi-purpose grease or an equivalent.

### Removal and Installation

INFOID:000000006046697

### REMOVAL

# FRONT WIPER DRIVE ASSEMBLY

## < REMOVAL AND INSTALLATION >

1. Remove the front wiper arm (LH/RH). Refer to [WW-54. "Removal and Installation"](#).
2. Remove the cowl top cover. Refer to [EXT-21. "Removal and Installation"](#).
3. Disconnect the front wiper motor connector.
4. Remove the bolts from the front wiper drive assembly.
5. Remove the front wiper drive assembly from the vehicle.

## INSTALLATION

1. Install the front wiper drive assembly to the vehicle.
2. Connect the front wiper motor connector.
3. Operate the front wiper to move it to the auto stop position.
4. Install the cowl top cover. Refer to [EXT-21. "Removal and Installation"](#).
5. Install the front wiper arms. Refer to [WW-54. "Removal and Installation"](#).

## Disassembly and Assembly

INFOID:000000006046698

## DISASSEMBLY

1. Remove the front wiper linkage 1 and 2 from the front wiper drive assembly.  
**CAUTION:**  
**Never bend the linkage or damage the plastic part of the ball joint when removing the wiper linkage.**
2. Remove the front wiper motor mounting screws, and then remove the front wiper motor from the front wiper frame.

## ASSEMBLY

1. Connect the front wiper motor connector.
2. Operate the front wiper to move it to the auto stop position.
3. Disconnect the front wiper motor connector.
4. Install the front wiper motor to the front wiper frame.
5. Install the front wiper linkage 2 to the front wiper motor and the front wiper frame.
6. Install the front wiper linkage 1 to the front wiper frame.  
**CAUTION:**
  - **Never drop front wiper motor or cause it to come into contact with other parts.**
  - **Be careful for the grease condition at the front wiper motor and front wiper linkage joint (retainer). Apply Multi-purpose grease or an equivalent if necessary.**

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# RAIN SENSOR

< REMOVAL AND INSTALLATION >

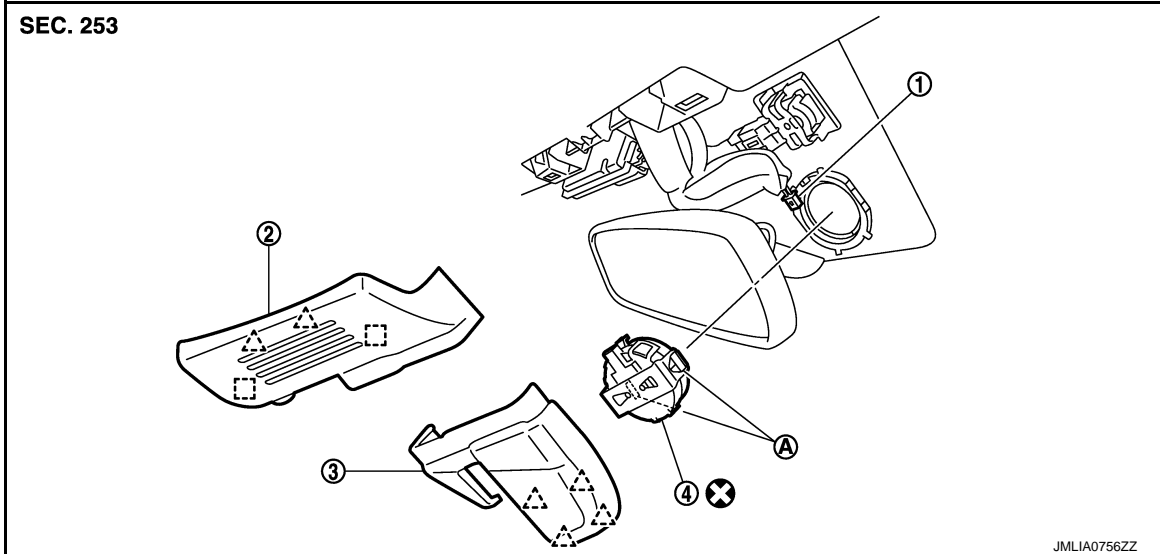
## RAIN SENSOR

Exploded View

INFOID:000000006109674

### CAUTION:

When the rain sensor is removed from windshield, the rain sensor cannot be reused.



1. Rain sensor connector                      2. Front camera finisher                      3. Inside mirror cover

4. Rain sensor

A. Metal clip

△ : Pawl

□ : Metal clip

⊗ : Do not reuse

## Removal and Installation

INFOID:000000006046700

### REMOVAL

1. Remove front camera finisher. Refer to [INT-49, "Removal and Installation"](#).
2. Remove the inside mirror cover.
3. Disconnect rain sensor connector.
4. Disengage the both sides of metal clips, and remove the rain sensor from the windshield.

### INSTALLATION

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

### CAUTION:

- Surface of windshield should be cleaned.
- Never touch gel/adhesive of new part.
- Lock the metal spring clips and install the rain sensor securely.

# WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

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## WIPER AND WASHER SWITCH

Exploded View

INFOID:000000006046701

Refer to [BCS-80. "Exploded View"](#).

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