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APPLICATION NOTICE

< HOW TO USE THIS MANUAL >

HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:000000010957670

This service manual includes descriptions of “Rain sensor” and “Light & rain sensor”.
Rain sensor and light & rain sensor is the same part.

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010785895

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- 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 "SRS AIR BAG".
- Never 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:

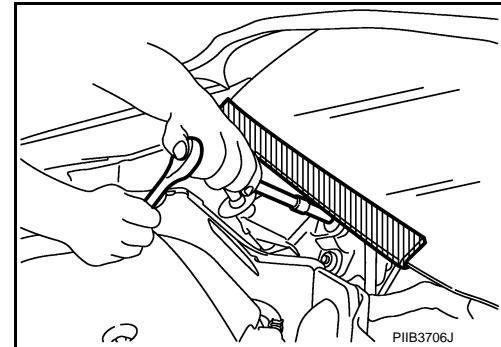
Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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:0000000010785897

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



Precautions for Removing Battery Terminal

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- With the adoption of Auto ACC function, ACC power is automatically supplied by operating the intelligent key or remote keyless entry or by opening/closing the driver side door. In addition, ACC power is supplied even after the ignition switch is turned to the OFF position, i.e. ACC power is supplied for a certain fixed time.

PRECAUTIONS

< PRECAUTION >

- When disconnecting the 12V battery terminal, turn off the ACC power before disconnecting the 12V battery terminal, observing "How to disconnect 12V battery terminal" described below.

NOTE:

Some ECUs operate for a certain fixed time even after ignition switch is turned OFF and ignition power supply is stopped. If the battery terminal is disconnected before ECU stops, accidental DTC detection or ECU data damage may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.

HOW TO DISCONNECT 12V BATTERY TERMINAL

Disconnect 12V battery terminal according to Instruction 1 or Instruction 2 described below.

For vehicles parked by ignition switch OFF, refer to Instruction 2.

INSTRUCTION 1

- Open the hood.
- Turn key switch to the OFF position with the driver side door opened.
- Get out of the vehicle and close the driver side door.
- Wait at least 3 minutes. For vehicle with the engine listed below, remove the battery terminal after a lapse of the specified time.

D4D engine	: 20 minutes
HRA2DDT	: 12 minutes
K9K engine	: 4 minutes
M9R engine	: 4 minutes
R9M engine	: 4 minutes
V9X engine	: 4 minutes

CAUTION:

While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.

- Remove 12V battery terminal.

CAUTION:

After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

INSTRUCTION 2 (FOR VEHICLES PARKED BY IGNITION SWITCH OFF)

- Unlock the door with intelligent key or remote keyless entry.

NOTE:

At this moment, ACC power is supplied.

- Open the driver side door.
- Open the hood.
- Close the driver side door.
- Wait at least 3 minutes.

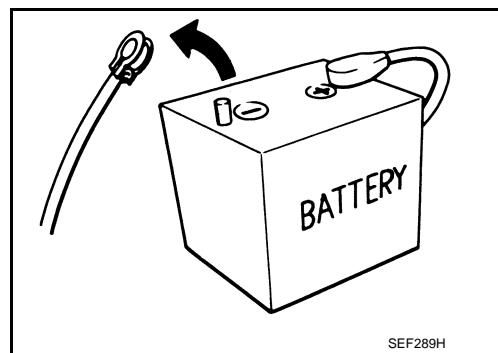
CAUTION:

While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.

- Remove 12V battery terminal.

CAUTION:

After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.



PREPARATION

< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tool

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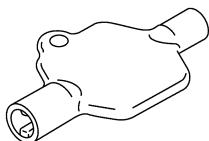
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Washer nozzle adjuster



JSLIA0149ZZ

Adjusting washer nozzle.

(Available in SEC. 289 of PARTS CATALOG: Part No. 28949 1EA0A)

NOTE:

Washer nozzle adjuster is included with shipment of nozzle.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

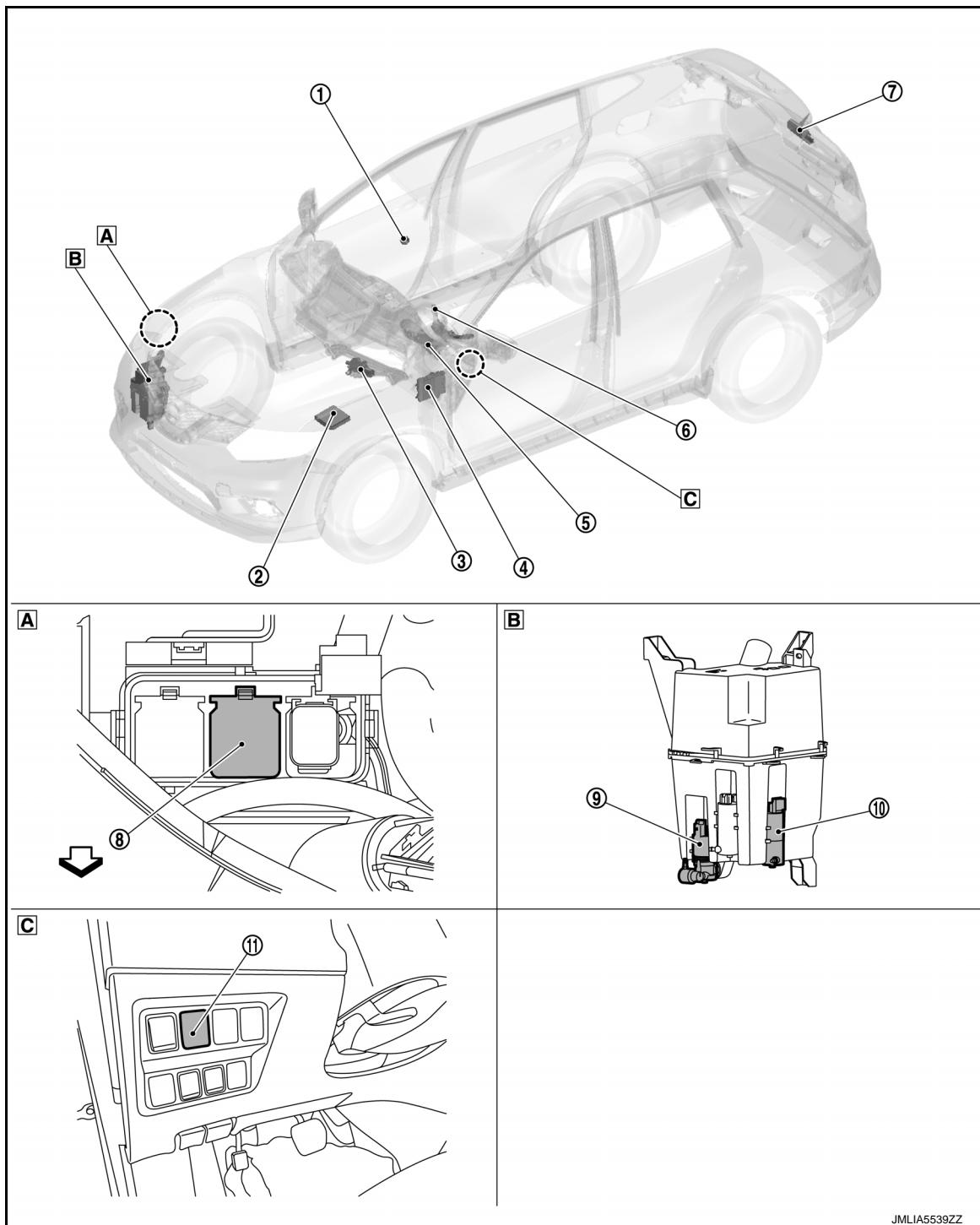
SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000010785406

LHD MODELS



A Front right side of engine room area **B** Washer tank

↖ : Vehicle front

C Instrument lower panel LH

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

No.	Component	Function
①	Light & rain sensor ^{*1}	Refer to WW-12, "Light & Rain Sensor" .
②	IPDM E/R	<ul style="list-style-type: none"> Controls integrated relays according to the request (via CAN communication) from BCM. Transmits reverse switch signal to BCM via CAN communication^{*2}. Refer to PCS-5, "Component Parts Location" for detailed installation location.
③	Front wiper motor	Refer to WW-11, "Front Wiper Motor" .
④	BCM	<ul style="list-style-type: none"> BCM receives shift position signal from TCM via CAN communication^{*3}. Judges each switch status by the combination switch reading function. Requests (via CAN communication) the front wiper relay, the front wiper HI/LO relay ON and the headlamp washer relay^{*4} to IPDM E/R. Supplies power to the rear wiper motor. Performs the auto stop control of the rear wiper. Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
⑤	Combination meter	Transmits vehicle speed signal to BCM via CAN communication.
⑥	Combination switch (Wiper & washer switch)	<ul style="list-style-type: none"> Combination switch: Transmits the status of the combination switch (wiper and washer) to BCM. Washer switch: Refer to WW-12, "Washer Switch".
⑦	Rear wiper motor	Refer to WW-12, "Rear Wiper Motor" .
⑧	Headlamp washer relay ^{*4}	Headlamp washer relay is controlled by IPDM E/R and supplies power to headlamp washer pump.
⑨	Washer pump	Refer to WW-12, "Washer Pump" .
⑩	Headlamp washer pump ^{*4}	Refer to WW-11, "Headlamp Washer Pump" .
⑪	Headlamp washer switch ^{*5}	Refer to WW-11, "Headlamp Washer Switch" .

*¹: For models with light & rain sensor

*²: For M/T models

*³: Except for M/T models

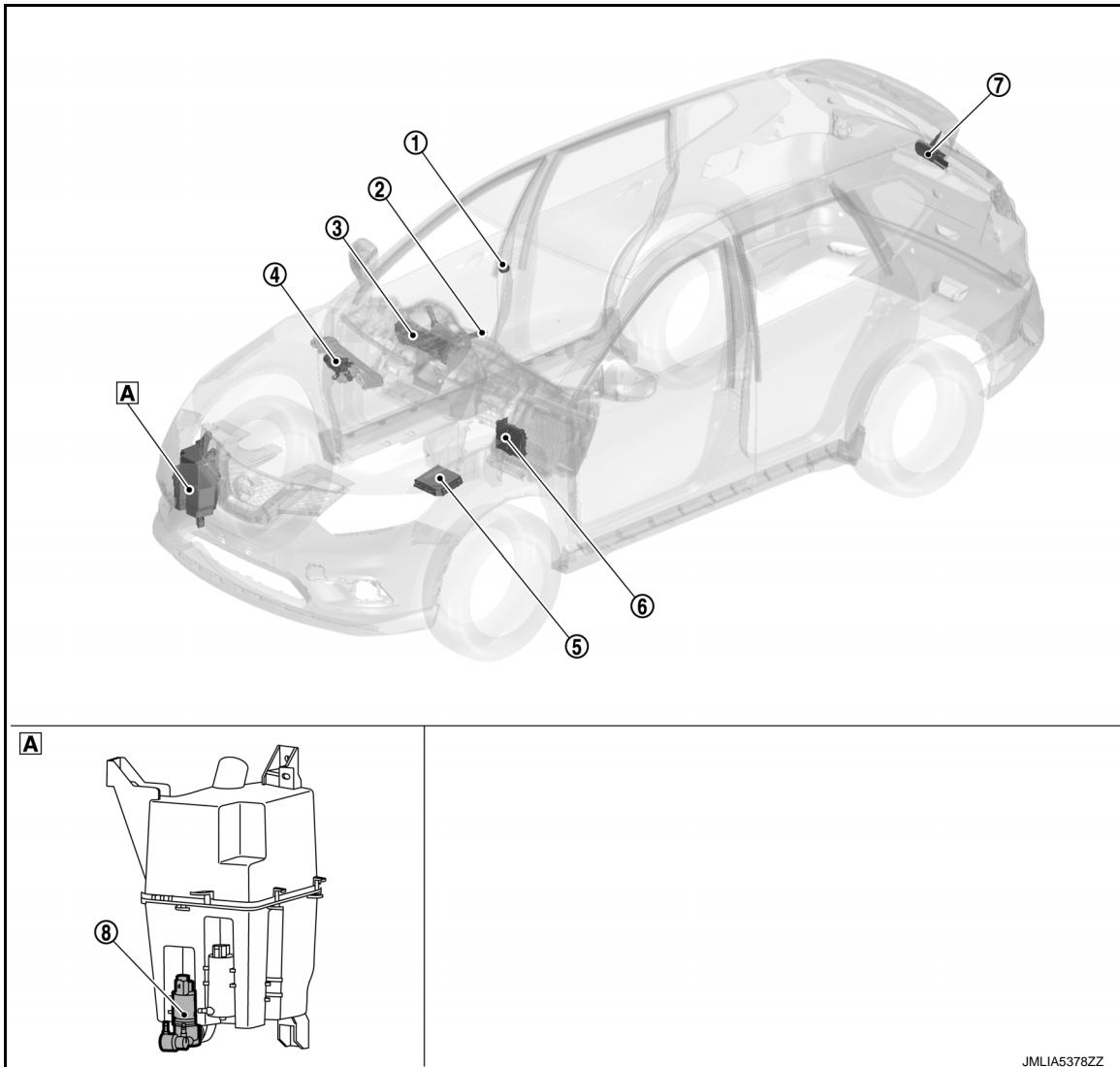
*⁴: For models with headlamp washer

*⁵: For models with headlamp washer switch

RHD MODELS

COMPONENT PARTS

< SYSTEM DESCRIPTION >



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A Washer tank

No.	Component	Function
①	Light & rain sensor* ¹	Refer to WW-12, "Light & Rain Sensor" .
②	Combination switch (Wiper & washer switch)	<ul style="list-style-type: none"> Combination switch: Transmits the status of the combination switch (wiper and washer) to BCM. Washer switch: Refer to WW-12, "Washer Switch".
③	Combination meter	Transmits vehicle speed signal to BCM via CAN communication.
④	Front wiper motor	Refer to WW-11, "Front Wiper Motor" .
⑤	IPDM E/R	<ul style="list-style-type: none"> Controls integrated relays according to the request (via CAN communication) from BCM. Transmits reverse switch signal to BCM via CAN communication*². <p>Refer to PCS-5, "Component Parts Location" for detailed installation location.</p>
⑥	BCM	<ul style="list-style-type: none"> BCM receives shift position signal from TCM via CAN communication*³. Judges each switch status by the combination switch reading function. Requests (via CAN communication) the front wiper relay and the front wiper HI/LO relay ON to IPDM E/R. Supplies power to the rear wiper motor. Performs the auto stop control of the rear wiper. Refer to BCS-6, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

No.	Component	Function
⑦	Rear wiper motor	Refer to WW-12, "Rear Wiper Motor".
⑧	Washer pump	Refer to WW-12, "Washer Pump".

*¹: For models with light & rain sensor

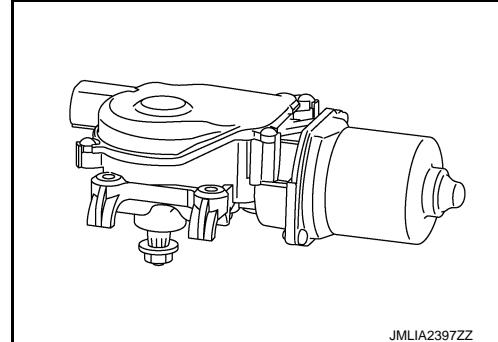
*²: For M/T models

*³: Except for M/T models

Front Wiper Motor

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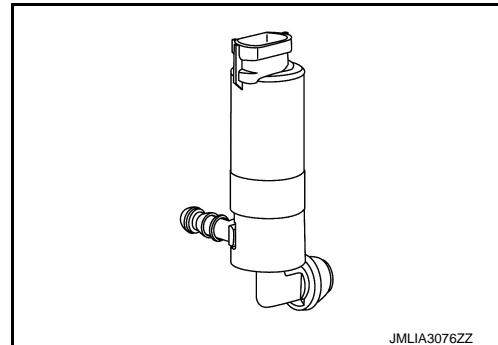
- Controls front wiper operation with IPDM E/R control.
- Transmits front wiper stop position signal to IPDM E/R.



Headlamp Washer Pump

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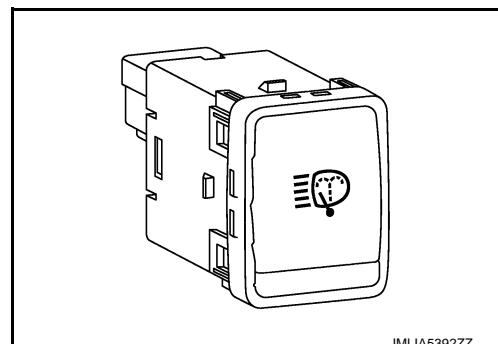
Washer fluid is sprayed according to the power supply from headlamp washer relay.



Headlamp Washer Switch

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When headlamp washer switch is pressed, headlamp washer switch transmits the switch status to BCM.



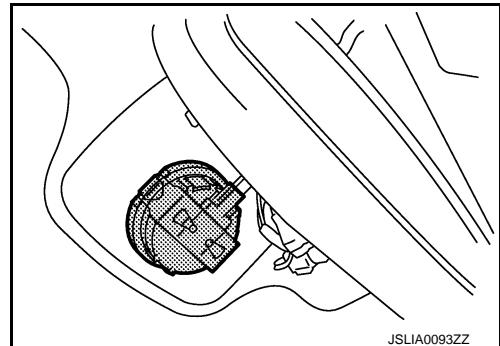
COMPONENT PARTS

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Light & Rain Sensor

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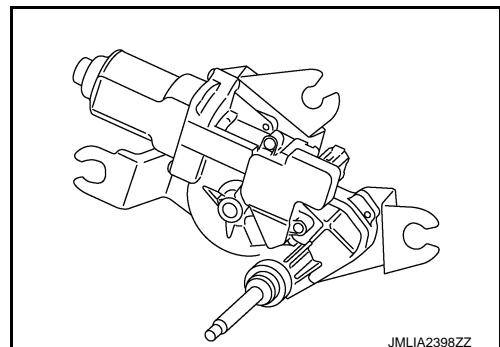
Detects water droplets on the windshield with infrared rays, and transmits the light & rain sensor signal to BCM via the light & rain sensor serial link.



Rear Wiper Motor

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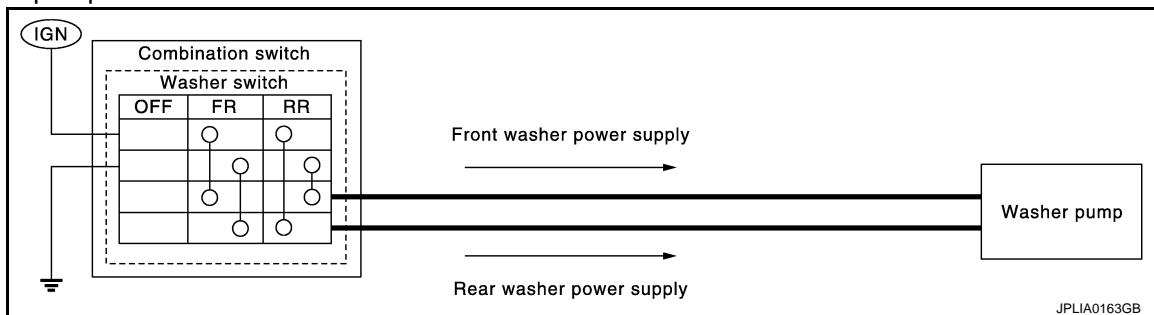
- Controls rear wiper operation with BCM control.
- Transmits rear wiper stop position signal to BCM.



Washer Switch

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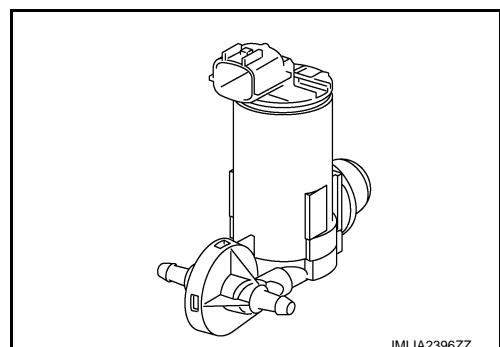
- Washer switch is integrated with combination switch.
- Combination switch operates front washer or rear washer by changing voltage polarity to be supplied to washer pump.



Washer Pump

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Washer fluid is sprayed according to washer switch states.



SYSTEM

< SYSTEM DESCRIPTION >

SYSTEM

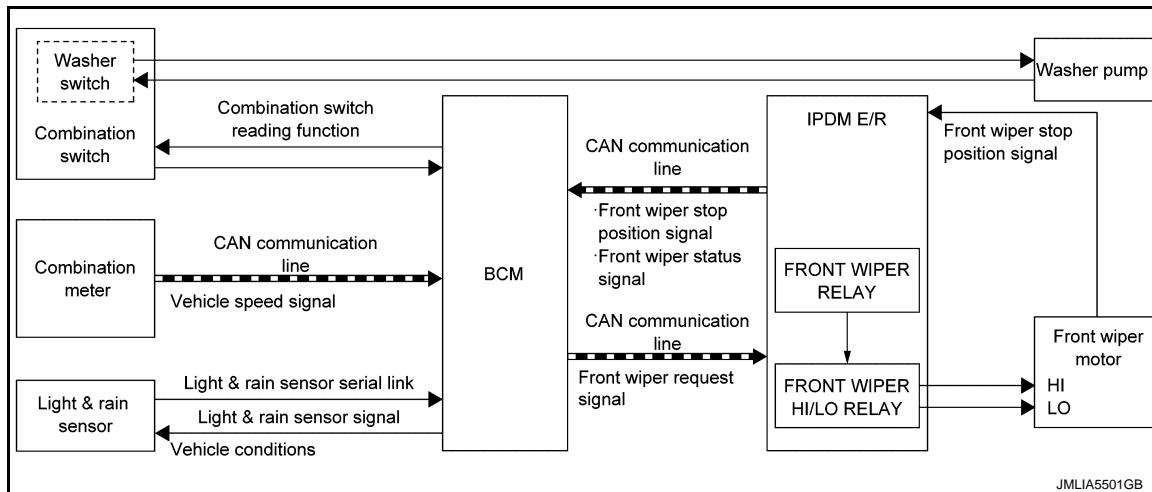
FRONT WIPER AND WASHER SYSTEM (WITH LIGHT & RAIN SENSOR)

FRONT WIPER AND WASHER SYSTEM (WITH LIGHT & RAIN SENSOR) : System Description

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SYSTEM DIAGRAM



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OUTLINE

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

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.
- IPDM E/R turns ON/OFF the integrated front wiper relay and the front wiper HI/LO relay according to the front wiper request signal. IPDM E/R provides the power supply to operate the front wiper HI/LO operation.

WW

FRONT WIPER LO OPERATION

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

M

Front wiper LO operating condition

- Ignition switch ON
- Front wiper switch LO or front wiper switch MIST (while pressing)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LOW).

N

FRONT WIPER HI OPERATION

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

O

Front wiper HI operating condition

- Ignition switch ON
- Front wiper switch HI
- IPDM E/R turns ON the integrated front wiper relay and the front wiper HI/LO relay according to the front wiper request signal (HIGH).

P

FRONT WIPER AUTO OPERATION

SYSTEM

< SYSTEM DESCRIPTION >

Rain Detection

Rain level and sensor conditions are detected by light & rain sensor.

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

Auto Wiping Operation

- BCM receives the wiping speed request signal from the light & rain sensor via the light & rain sensor serial link.
- BCM controls front wiper operation according to the wiping speed request signal. And it transmits the front wiper request signal (LOW or HIGH) 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.

Light & rain Sensor Sensitivity Setting

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

Wiper volume dial position	Sensitivity
1	Low sensitivity
2	Low–medium sensitivity
3	Medium–high sensitivity
4	High sensitivity

NOTE:

Factory setting of the light & rain sensor operation is operation linked with light & rain sensor. Light & rain sensor operation can be set to operation linked or not linked with light & rain sensor using CONSULT. Refer to [WW-29, "WIPER : CONSULT Function - WIPER"](#).

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:

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

FRONT WIPER AUTO STOP OPERATION

- BCM transmits the front wiper request signal (RETURN) to IPDM E/R via CAN communication when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper stop position signal from the front wiper motor to find out the front wiper motor position (stop position/except stop position).
- When IPDM E/R receives the front wiper request signal (RETURN) from BCM and the front wiper motor position is not in the stop position, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.
- When the front wiper motor returns to the stop position, IPDM E/R transmits front wiper status signal to BCM via CAN communication.
- When BCM receives front wiper status signal from IPDM E/R, BCM transmits the front wiper request signal (STOP) to IPDM E/R via CAN communication.

FRONT WIPER OPERATION LINKED WITH WASHER

SYSTEM

< SYSTEM DESCRIPTION >

- BCM transmits the front wiper request signal (LOW) 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 (LOW) so that the front wiper operates approximately 2 times when the front washer switch OFF is detected.

A

Washer linked operating condition of front wiper

B

- Ignition switch ON
- Front washer switch ON (0.4 second or more)

C

- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LOW).
- The washer pump is grounded through the combination switch with the front washer switch ON.

D

FRONT WIPER DROP WIPE OPERATION

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

E

Front wiper drop wipe operating condition

F

- Ignition switch ON
- Front wiper switch OFF
- Front washer switch OFF

G

- BCM transmits the front wiper request signal (LOW) to IPDM E/R via CAN communication so that the front wiper operates once at 3 seconds after front wiper operation linked with washer.

H

NOTE:

Factory setting of the front wiper drop wipe operation is ON. Front wiper drop wipe operation can be set to ON or OFF using CONSULT. Refer to [WW-29, "WIPER : CONSULT Function - WIPER"](#).

I

FRONT WIPER SERVICE POSITION OPERATION

J

- Front wiper operates at LO and stops so that front wiper can be locked back without interfere the hood.
- BCM transmits the front wiper request signal (LOW) to IPDM E/R via CAN communication for 0.6 seconds according to the conditions of front wiper service position operation.

K

Front wiper service position operation conditions (Within 1 minute after turning ignition switch Off)

L

- Front wiper switch is OFF
- Front wiper is in stop position
- Front wiper switch MIST is operated 2 times (Within 0.47 second)

M

Front wiper service position operation conditions (During ignition switch is On)

N

- Front wiper switch is OFF
 - Front wiper is in stop position
 - Vehicle speed is less than 4 km/h
 - Front wiper switch MIST is operated 2 times (Within 0.47 second)
- After the front wiper LO operation, IPDM E/R receives the front wiper request signal (STOP) from BCM and then stops the front wiper.
 - Front wiper returns to stop position when front wiper switch is operated. (If 1 minute or more is passed after turning ignition switch OFF, front wiper returns to stop position when ignition switch is turned ON and front wiper switch is operated.)

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FRONT WIPER AND WASHER SYSTEM (WITH LIGHT & RAIN SENSOR) : Circuit

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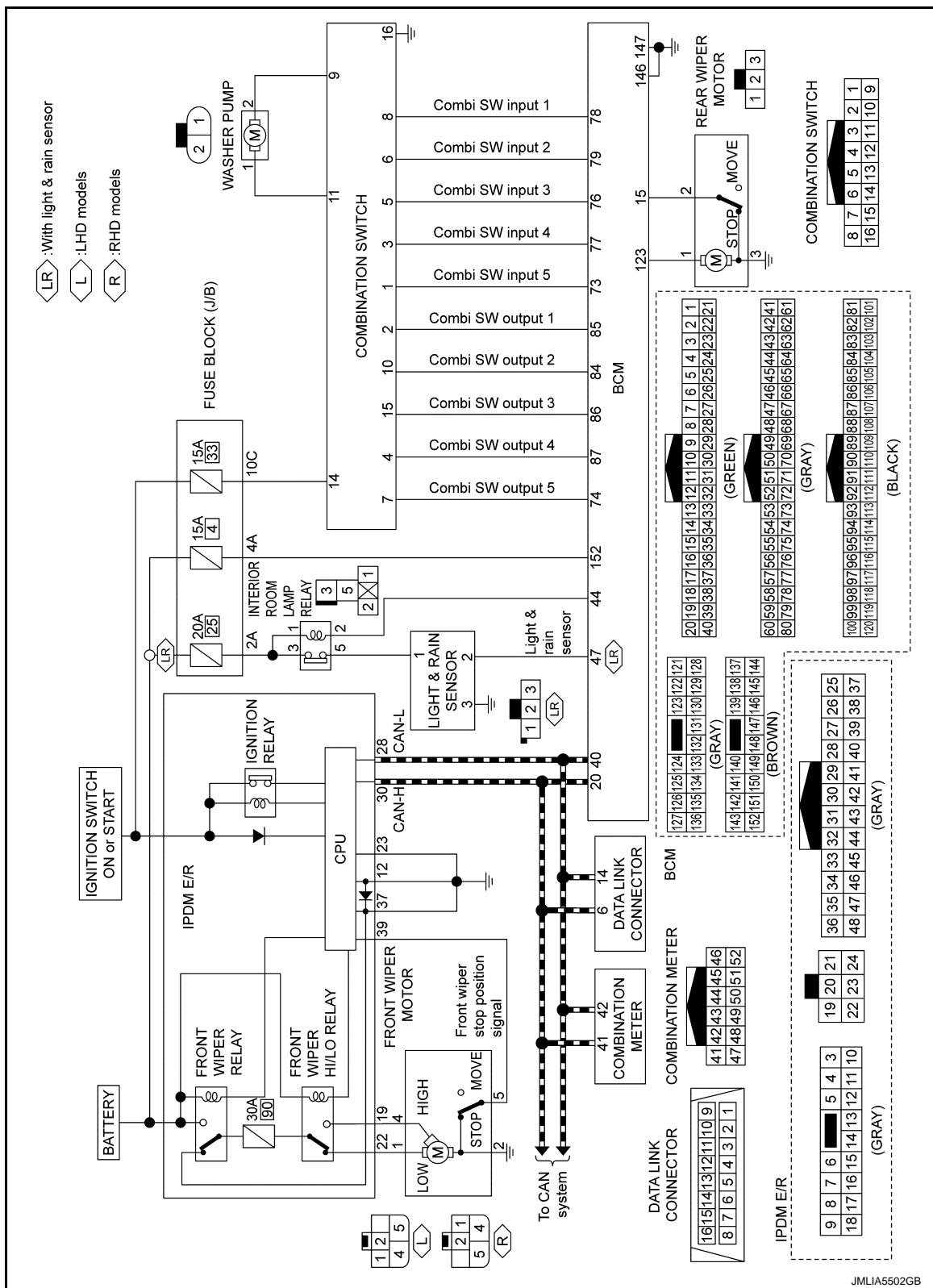
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SYSTEM

< SYSTEM DESCRIPTION >

Diagram

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FRONT WIPER AND WASHER SYSTEM (WITH LIGHT & RAIN SENSOR) : Fail-safe

INEQID:0000000010785414

IPDM E/R

If No CAN Communication Is Available With BCM

SYSTEM

< SYSTEM DESCRIPTION >

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

Control part	Fail-safe operation
Front wiper motor	<ul style="list-style-type: none"> 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. 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.

Front Wiper Protection Function

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

When front wiper stop position signal is in the condition listed below while the front wiper is operating, IPDM E/R activates the fail-safe.

Ignition switch	Front wiper switch	Front wiper stop position signal	Fail-safe
ON	OFF	The signal does not change from the battery voltage for 10 seconds.	Stops front wiper power supply for 20 seconds
	Except OFF	The signal does not change for 10 seconds.	

BCM

Fail-safe Control By Light & Rain Sensor Malfunction

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

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

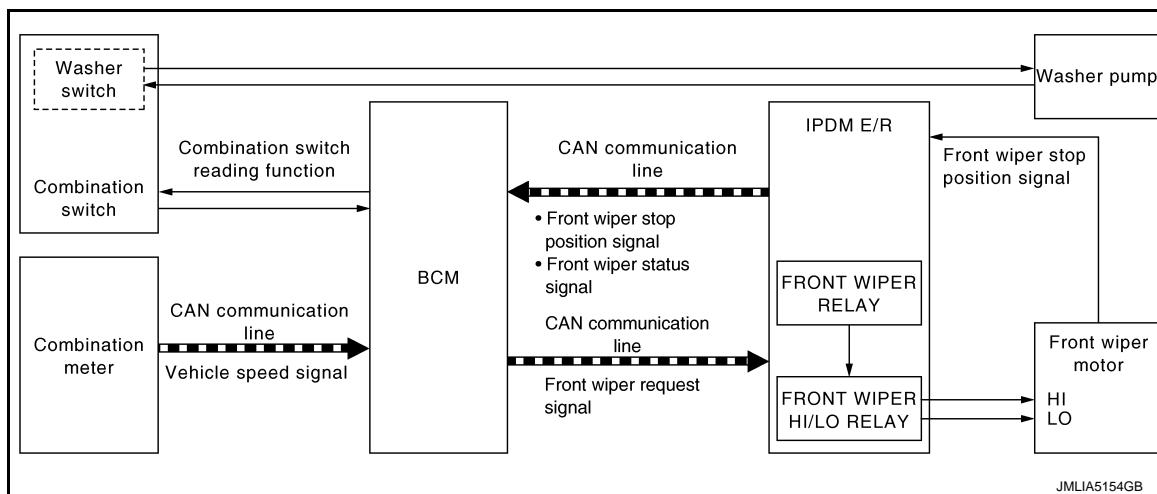
- Front wiper switch AUTO and sensing rain drop: The condition just before the activation of fail-safe is maintained until the front wiper switch is turned OFF.
- Front wiper switch AUTO and not sensing rain drop: Front wiper is LO operation until the front wiper switch is turned off.

FRONT WIPER AND WASHER SYSTEM (WITHOUT LIGHT & RAIN SENSOR)

FRONT WIPER AND WASHER SYSTEM (WITHOUT LIGHT & RAIN SENSOR) : System Description

INFOID:0000000010785415

SYSTEM DIAGRAM



OUTLINE

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

SYSTEM

< 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.
- IPDM E/R turns ON/OFF the integrated front wiper relay and the front wiper HI/LO relay according to the front wiper request signal. IPDM E/R provides the power supply to operate the front wiper HI/LO operation.

FRONT WIPER LO OPERATION

- BCM transmits the front wiper request signal (LOW) 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)
- IPDM E/R turns ON the integrated front wiper relay according to the front wiper request signal (LOW).

FRONT WIPER HI OPERATION

- BCM transmits the front wiper request signal (HIGH) 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
- IPDM E/R turns ON the integrated front wiper relay and the front wiper HI/LO relay according to the front wiper request signal (HIGH).

FRONT WIPER INT OPERATION

- BCM transmits the front wiper request signal (LOW) to IPDM E/R via CAN communication depending on the front wiper INT operating condition and intermittent operation delay interval according to the wiper volume dial position.

Front wiper INT operating condition

- Ignition switch ON
- Front wiper switch INT
- IPDM E/R turns ON the integrated front wiper relay so that the front wiper is operated only once according to the front wiper request signal (LOW) and front wiper request signal (RETURN).
- BCM detects stop position/except stop position of the front wiper motor according to the front wiper stop position signal received from IPDM E/R via CAN communication.
- BCM transmits the front wiper request signal (LOW) again after the intermittent operation delay interval.

NOTE:

Front wiper INT operation can be set to operation linked or not linked with vehicle speed using CONSULT. Refer to [WW-29, "WIPER : CONSULT Function - WIPER"](#).

Front wiper intermittent operation with vehicle speed

- BCM calculates the intermittent operation delay interval from the following
- Vehicle speed signal
- Wiper volume dial position

Intermittent operation delay Interval

Unit: Second

Wiper volume dial position	Intermittent operation interval	Vehicle speed		
		0 – 5 km/h (0 – 3.1 MPH)	5 – 65 km/h (3.1 – 40.4 MPH)*	65 km/h (40.4 MPH) or more
1	Long ↑	62.5	25	15
2		31.25	12.5	7.5
3		18.75	7.5	4.5
4		12.5	5	3
5		6.25	2.5	1.5

*: When operation setting is not linked with vehicle speed.

FRONT WIPER AUTO STOP OPERATION

SYSTEM

< SYSTEM DESCRIPTION >

- BCM transmits the front wiper request signal (RETURN) to IPDM E/R via CAN communication when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper stop position signal from the front wiper motor to find out the front wiper motor position (stop position/except stop position).
- When IPDM E/R receives the front wiper request signal (RETURN) from BCM and the front wiper motor position is not in the stop position, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.
- When the front wiper motor returns to the stop position, IPDM E/R transmits front wiper status signal to BCM via CAN communication.
- When BCM receives front wiper status signal from IPDM E/R, BCM transmits the front wiper request signal (STOP) to IPDM E/R via CAN communication.

FRONT WIPER OPERATION LINKED WITH WASHER

- BCM transmits the front wiper request signal (LOW) 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 (LOW) 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 relay according to the front wiper request signal (LOW).
- 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 (LOW) to IPDM E/R via CAN communication so that the front wiper operates once at 3 seconds after front wiper operation linked with washer.

NOTE:

Factory setting of the front wiper drop wipe operation is ON. Front wiper drop wipe operation can be set to ON or OFF using CONSULT. Refer to [WW-29, "WIPER : CONSULT Function - WIPER".](#)

FRONT WIPER SERVICE POSITION OPERATION

- Front wiper operates at LO and stops so that front wiper can be locked back without interfere the hood.
- BCM transmits the front wiper request signal (LOW) to IPDM E/R via CAN communication for 0.6 seconds according to the conditions of front wiper service position operation.

Front wiper service position operation conditions (Within 1 minute after turning ignition switch Off)

- Front wiper switch is OFF
- Front wiper is in stop position
- Front wiper switch MIST is operated 2 times (Within 0.47 second)

Front wiper service position operation conditions (During ignition switch is On)

- Front wiper switch is OFF
- Front wiper is in stop position
- Vehicle speed is less than 4 km/h
- Front wiper switch MIST is operated 2 times (Within 0.47 second)
- After the front wiper LO operation, IPDM E/R receives the front wiper request signal (STOP) from BCM and then stops the front wiper.
- Front wiper returns to stop position when front wiper switch is operated. (If 1 minute or more is passed after turning ignition switch OFF, front wiper returns to stop position when ignition switch is turned ON and front wiper switch is operated.)

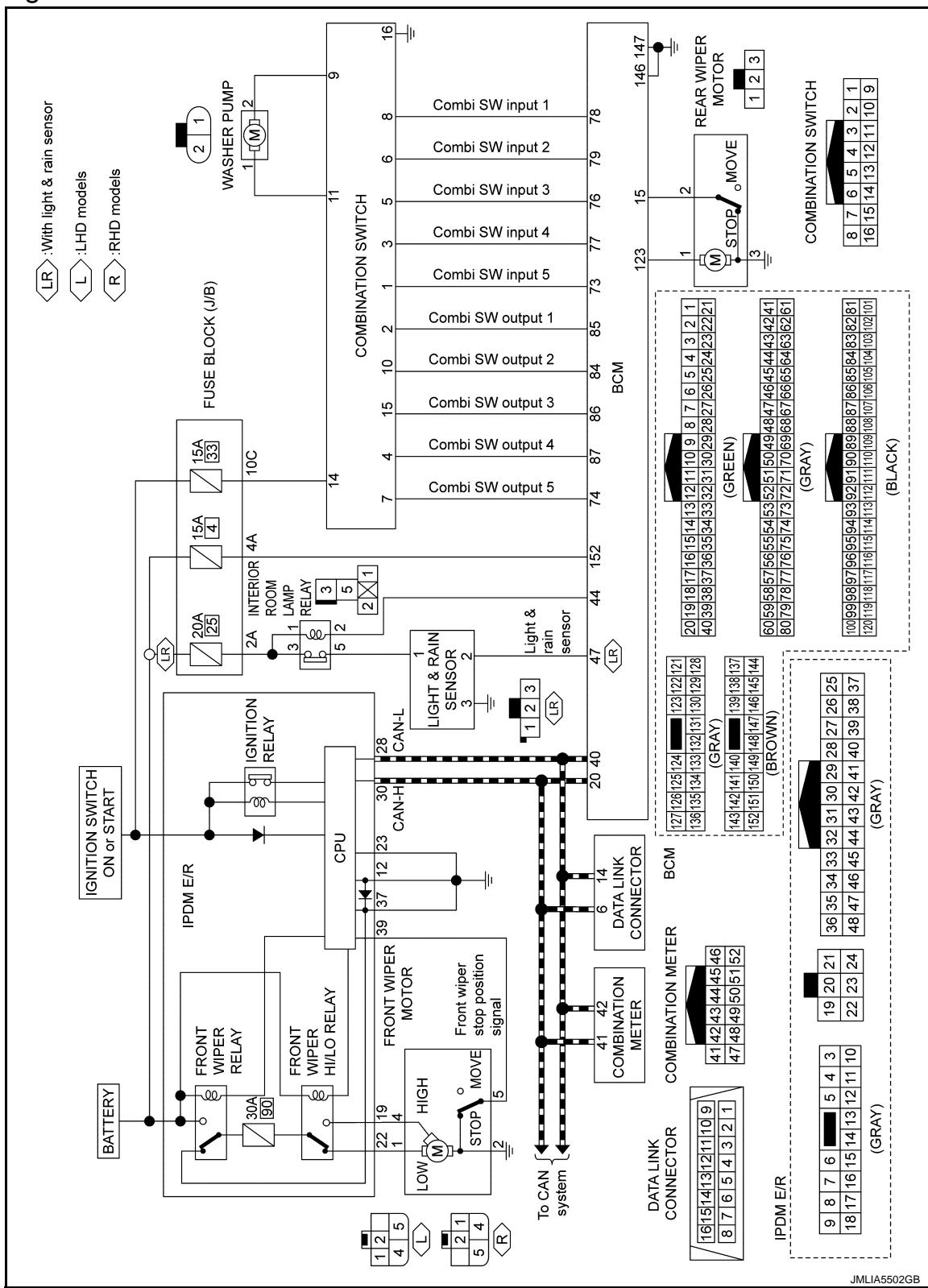
FRONT WIPER AND WASHER SYSTEM (WITHOUT LIGHT & RAIN SENSOR) : Cir-

SYSTEM

< SYSTEM DESCRIPTION >

cuit Diagram

INFOID:0000000010785416



JMLIA5502GB

FRONT WIPER AND WASHER SYSTEM (WITHOUT LIGHT & RAIN SENSOR) : Fail-Safe

INFOID:0000000010785417

IPDM E/R

If No CAN Communication Is Available With BCM

SYSTEM

< SYSTEM DESCRIPTION >

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

Control part	Fail-safe operation
Front wiper motor	<ul style="list-style-type: none"> 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. 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.

Front Wiper Protection Function

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

When front wiper stop position signal is in the condition listed below while the front wiper is operating, IPDM E/R activates the fail-safe.

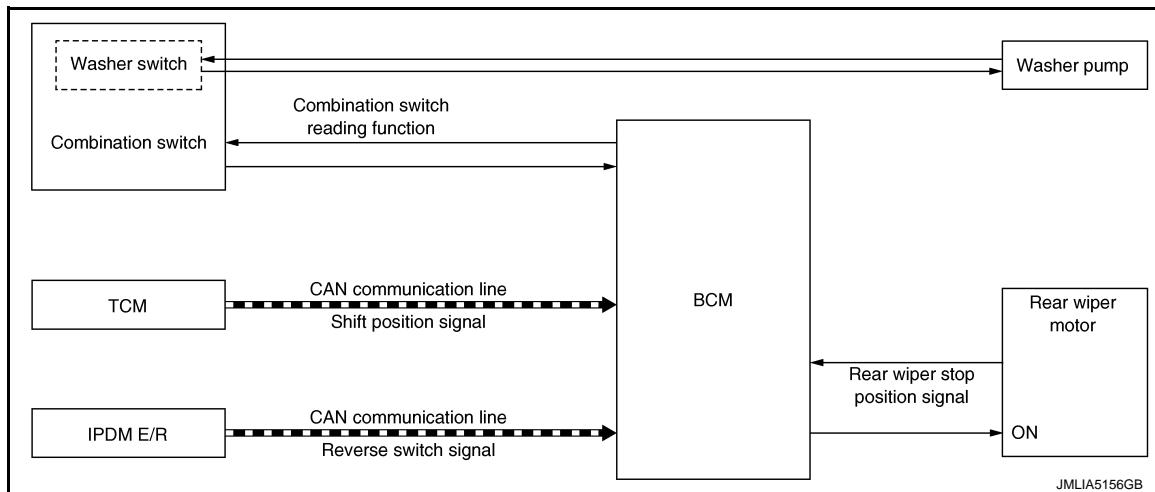
Ignition switch	Front wiper switch	Front wiper stop position signal	Fail-safe
ON	OFF	The signal does not change from the battery voltage for 10 seconds.	Stops front wiper power supply for 20 seconds
	Except OFF	The signal does not change for 10 seconds.	

REAR WIPER AND WASHER SYSTEM

REAR WIPER AND WASHER SYSTEM : System Description

INFOID:000000010785418

SYSTEM DIAGRAM



OUTLINE

The rear wiper is controlled by each function of BCM.

Control by BCM

- Combination switch reading function
- Rear wiper control function

REAR WIPER BASIC OPERATION

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

REAR WIPER ON OPERATION

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

Rear wiper ON operating condition

- Ignition switch ON
- Rear wiper switch ON

REAR WIPER INT OPERATION

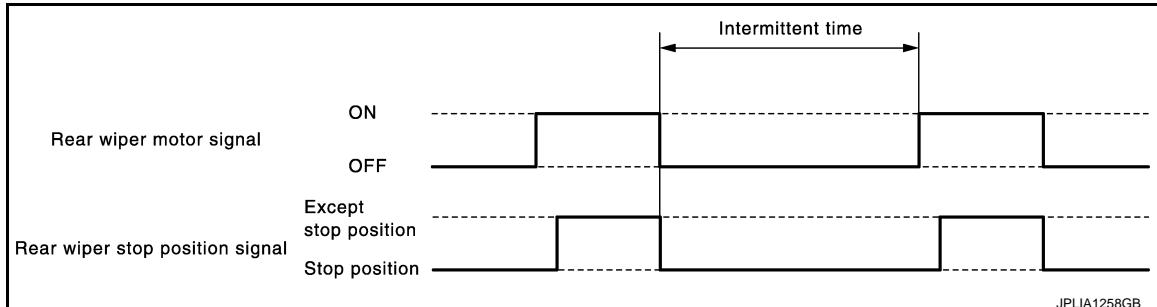
- BCM supplies power to the rear wiper motor according to the INT operating condition.

Rear wiper INT operating condition

SYSTEM

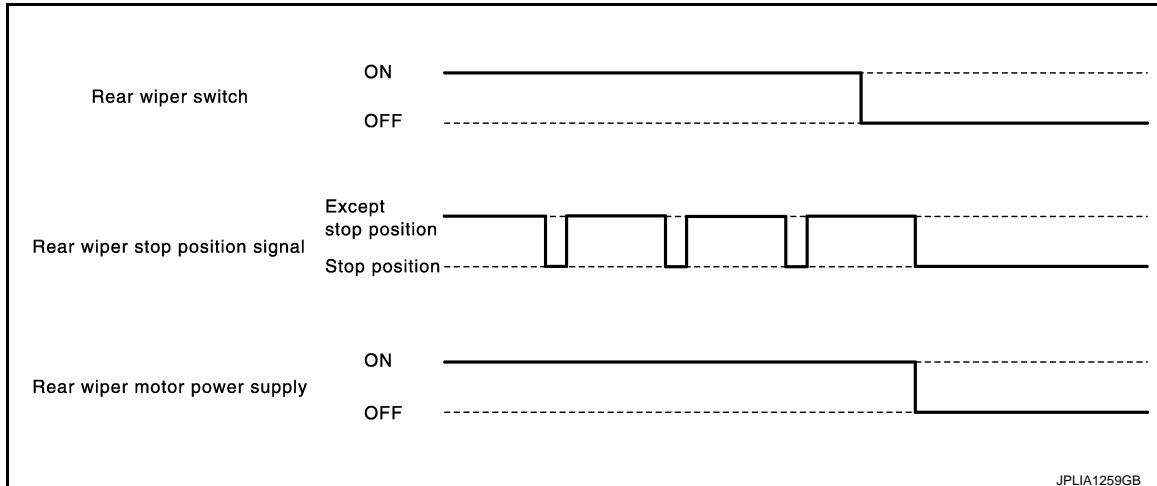
< SYSTEM DESCRIPTION >

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



REAR WIPER AUTO STOP OPERATION

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



NOTE:

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

REAR WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of rear wiper

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

REAR WIPER DROP WIPE OPERATION

- BCM controls the rear wiper to operate once according to the rear wiper drop wipe operating condition.

Rear wiper drop wipe operating condition

- Ignition switch ON
- Rear wiper switch OFF
- Rear washer switch OFF
- BCM controls the rear wiper so that it operates once time approximately 3 seconds later after the washer interlocking operation of the rear wiper.

NOTE:

Rear wiper drop wipe operation can be set to ON or OFF using CONSULT. Refer to [WW-29, "WIPER : CONSULT Function - WIPER"](#).

SYSTEM

< SYSTEM DESCRIPTION >

REAR WIPER OPERATION LINKED WITH REVERSE

- BCM controls rear wiper to operate once according to the conditions of rear wiper operation linked with reverse.

Condition of rear wiper operation linked with reverse

- Ignition switch ON
- Front wiper switch: LO, HI, INT or AUTO
- Rear wiper switch OFF
- Selector lever "R" (Except for M/T models)
- Shift lever "R" (M/T models)
- Except for M/T models: When selector lever is shifted to "R", BCM receives shift position signal from TCM via CAN communication, and then operates rear wiper motor.
- For M/T models: When shift lever is shifted to "R", IPDM E/R transmits reverse switch signal to BCM via CAN communication, and then operates rear wiper motor.

NOTE:

Rear wiper operation linked with reverse can be set to ON or OFF using CONSULT. Refer to [WW-29, "WIPER : CONSULT Function - WIPER".](#)

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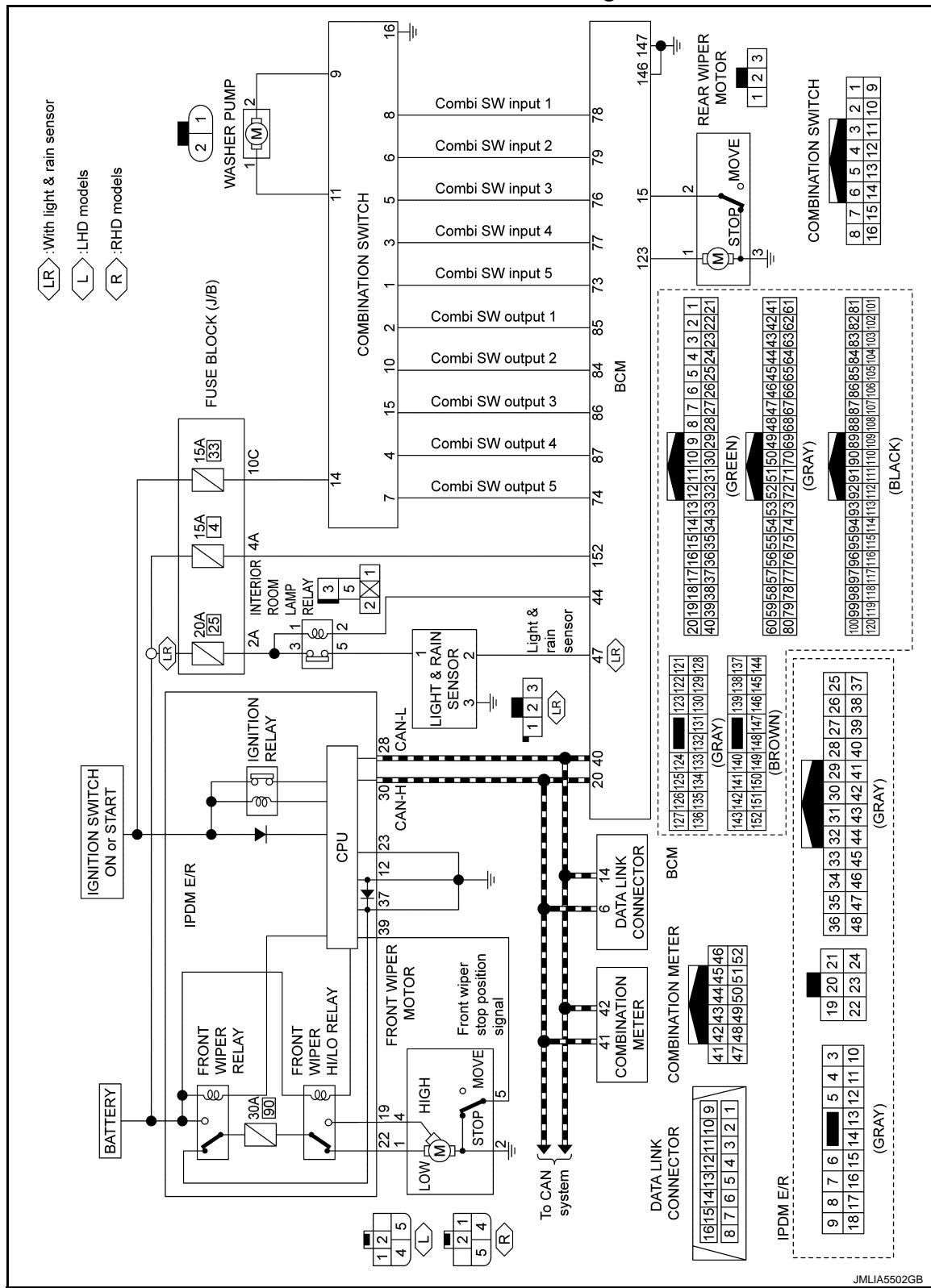
P

SYSTEM

< SYSTEM DESCRIPTION >

REAR WIPER AND WASHER SYSTEM : Circuit Diagram

INFOID:000000010785419



REAR WIPER AND WASHER SYSTEM : Fail-safe

INFOID:0000000010785420

REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper stop position signal.

When the rear wiper stop position signal does not change for more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

SYSTEM

< SYSTEM DESCRIPTION >

Condition of cancellation

1. More than 1 minute is passed after the rear wiper stop.
2. Turn rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

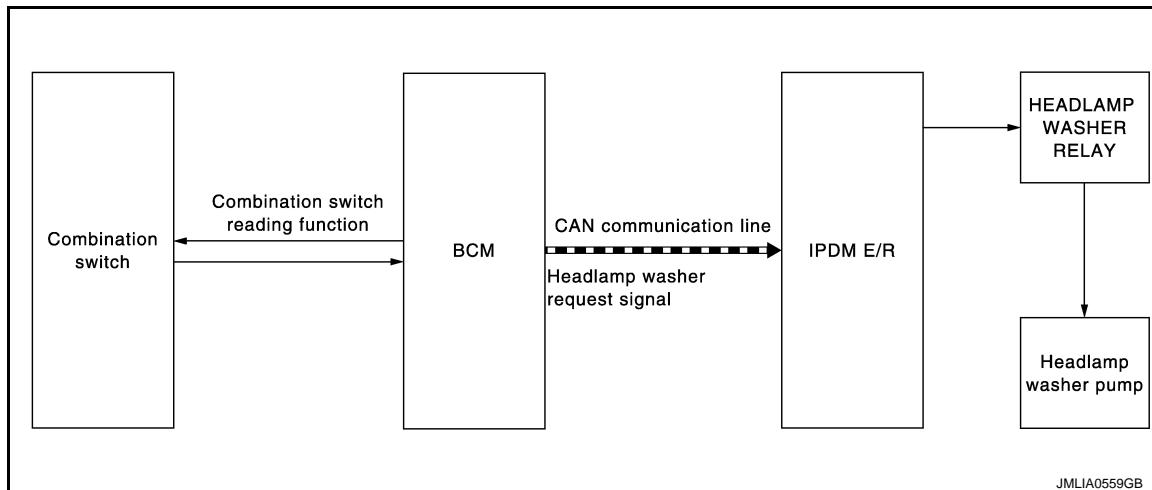
HEADLAMP WASHER SYSTEM

HEADLAMP WASHER SYSTEM : System Description

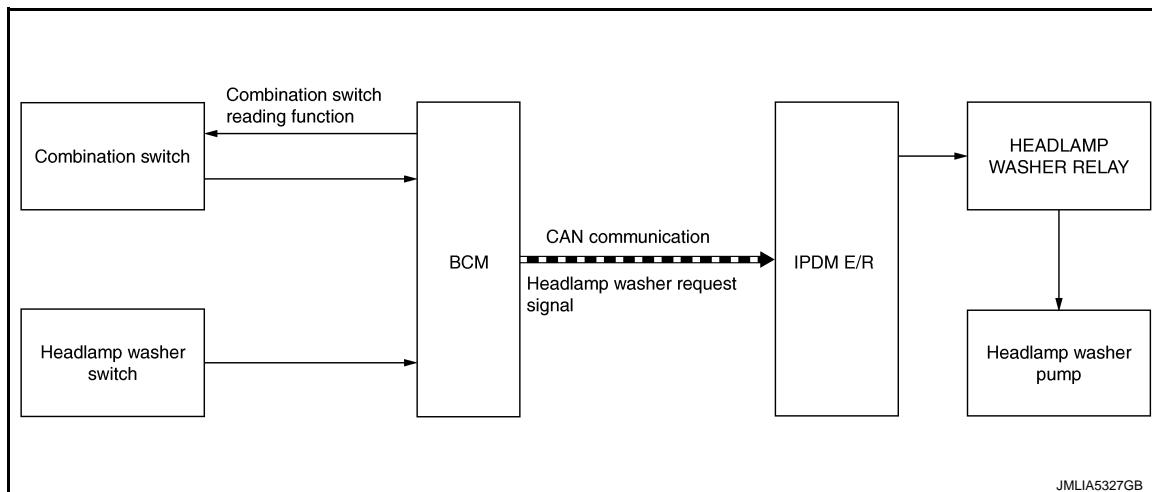
INFOID:000000010957659

SYSTEM DIAGRAM

Except For Russia



For Russia



OUTLINE

Headlamp washer is controlled by each function of BCM and IPDM E/R.

Control by BCM

- Combination switch reading function
- Headlamp washer control function

Control by IPDM E/R

- Headlamp washer relay control function

HEADLAMP WASHER OPERATION

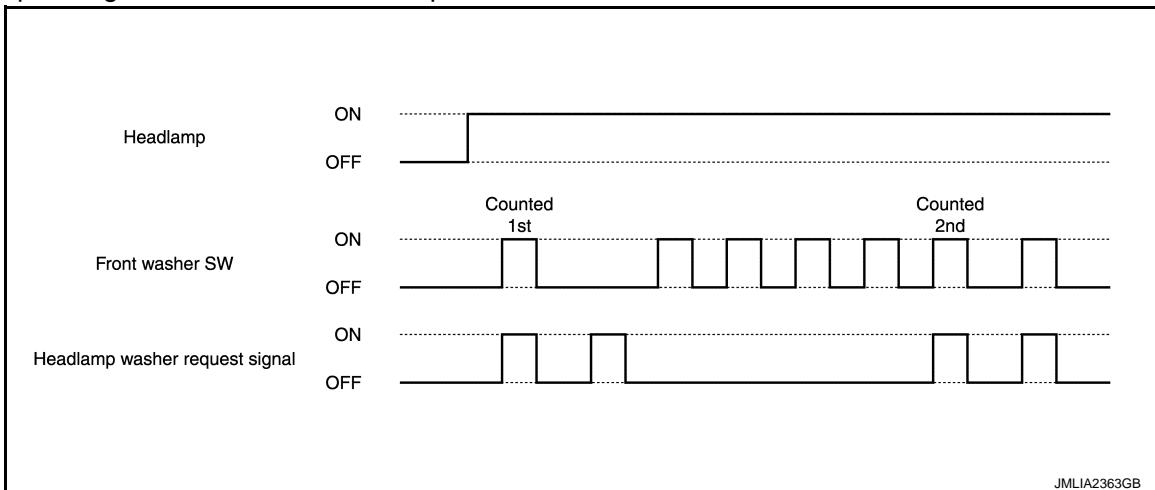
Except For Russia

- BCM detects the combination switch condition by the combination switch reading function.

SYSTEM

< SYSTEM DESCRIPTION >

- BCM transmits the headlamp washer request signal to IPDM E/R using CAN communication depending on each operating condition of the headlamp washer.



Operate by front washer switch at the first time

- Ignition switch ON
- Headlamps ON
- Front washer switch ON at first time

Operate by front washer switch from the second time

- Ignition switch ON
- Headlamps ON
- Front washer switch ON at fifth time after the first time
- IPDM E/R turns ON/OFF the headlamp washer relay by receiving the headlamp washer request signal, and controls the headlamp washer.

For Russia

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the headlamp washer request signal to IPDM E/R using CAN communication depending on each operating condition of the headlamp washer.

Operate by headlamp washer switch

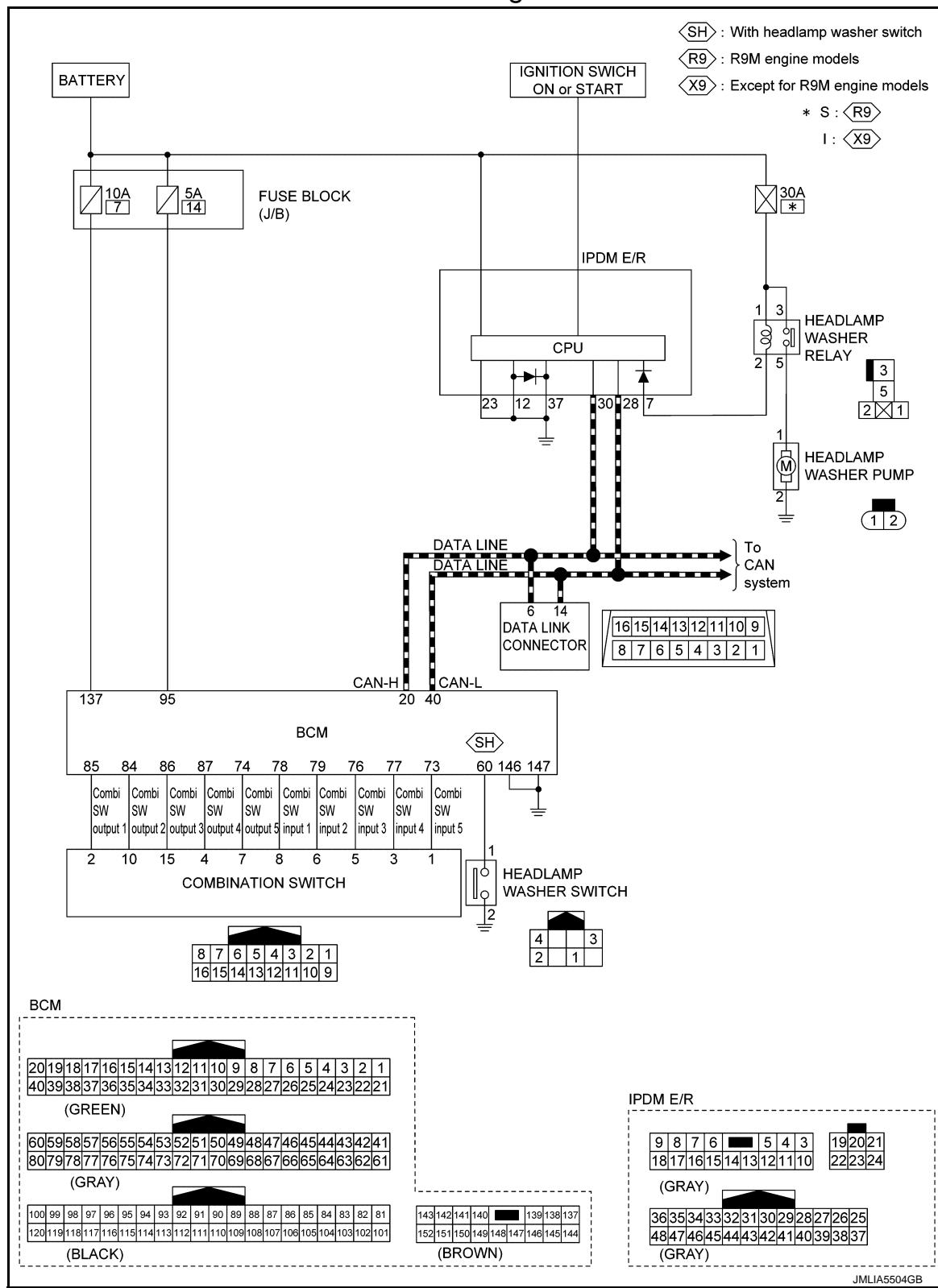
- Ignition switch ON
- Headlamps ON
- Headlamp washer switch ON
- IPDM E/R turns ON/OFF the headlamp washer relay by receiving the headlamp washer request signal, and controls the headlamp washer.

SYSTEM

< SYSTEM DESCRIPTION >

HEADLAMP WASHER SYSTEM : Circuit Diagram

INFOID:000000011014533



DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000010957675

APPLICATION ITEM

CONSULT 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.
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">• Read and save the vehicle specification.• Write the vehicle specification when replacing BCM.

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.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Exterior lamp	HEAD LAMP	×	×	×
Interior room lamp control	INT LAMP		×	
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	
—	AIR CONDITIONER*		×	×
Intelligent Key system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU		×	
Interior room lamp battery saver	BATTERY SAVER		×	
Back door open	TRUNK		×	
Vehicle security	THEFT ALM	×	×	
RAP	RETAINED PWR		×	
Remote keyless entry system	MULTI REMOTE ENT	×	×	
Signal buffer system	SIGNAL BUFFER		×	×

NOTE:

*: This item is displayed, but 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.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description
BATTERY VOLTAGE	V	Battery voltage of the moment a particular DTC is detected.
VEHICLE SPEED	km/h	Vehicle speed of the moment a particular DTC is detected.
EXTERNAL TEMP	°C	External temperature of the moment a particular DTC is detected
VEHICLE COND	—	NOTE: This item is displayed, but cannot be use this item.
DOOR LOCK STATUS	—	NOTE: This item is displayed, but cannot be use this item.
POWER SUPPLY COUNTER	min	Displays the cumulative time from the time that the battery terminal is connected.

WIPER

WIPER : CONSULT Function - WIPER

INFOID:0000000010785422

WORK SUPPORT

Service item	Setting item	Description	
WIPER SPEED SETTING* ¹	On* ³	Linked with vehicle speed (Front wiper intermittent time linked with the vehicle speed and wiper volume dial position.)	The setting of front wiper INT operation can be changed.
	Off	Not linked with vehicle speed (Front wiper intermittent time linked with the wiper volume dial position.)	
RAIN SENSOR* ²	On* ³	Linked with light & rain sensor (Front wiper intermittent time linked with the light & rain sensor, vehicle speed, and wiper volume dial position)	The setting of front wiper AUTO operation can be changed
	Off	Not linked with light & rain sensor (Front wiper intermittent time linked with the vehicle speed and wiper volume dial position)	
FR RR DRIP	On* ³	Front wiper drop wipe and rear wiper drop wipe operation ON	The setting of drop wipe operation can be changed
	Off	Front wiper drop wipe and rear wiper drop wipe operation OFF	
REAR WIPER LINK WITH REVERSE SETTING	On	Rear wiper operation linked with reverse ON	The setting of rear wiper operation linked with reverse can be changed
	Off* ³	Rear wiper operation linked with reverse OFF	

*¹: For models without light & rain sensor

*²: For models with light & rain sensor

*³: Factory setting

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

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.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
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 stop 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.
RR WIPER ON [Off/On]	Status of each switch judged by BCM using the combination switch reading function.
RR WIPER INT [Off/On]	
RR WASHER SW [Off/On]	
RR WIPER STOP [Off/On]	
H/L WSR SW* [Off/On]	Displays the status of the rear wiper stop position signal received from rear wiper motor.
RAIN SENSOR [OFF/LOW/HIGH/SPLASH/NG]	Status of headlamp washer switch judged by BCM.
	Request signal from light & rain sensor detected by BCM is displayed.

*: For models without headlamp washer switch, this item is indicated but is not used.

ACTIVE TEST

Test item	Operation	Description
FR WIPER	Hi	Operates the front wiper HI operation.
	Lo	Operates the front wiper LO operation.
	INT	Operates the front wiper INT/AUTO operation.
	Off	Stops the front wiper operation.
RR WIPER	On	Operates the rear wiper operation.
	Off	Stops the rear wiper operation.
HEADLAMP WASHER*	On	Operates the headlamp washer operation.

*: For models without headlamp washer, this item is indicated but is not used.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

CONSULT Function (IPDM E/R)

INFOID:0000000010957676

APPLICATION ITEM

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

Diagnosis mode	Description
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.
Work Support	Changes the setting for each system function.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
Ecu Identification	Allows confirmation of IPDM E/R part number.
Configuration	<ul style="list-style-type: none">• Read and save the vehicle specification.• Write the vehicle specification when replacing IPDM E/R.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC RESULT

Refer to [PCS-38, "DTC Index"](#).

Freeze Frame Data (FFD)

The IPDM E/R records the vehicle condition at the time a particular DTC is detected, and displays on CONSULT.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item [Unit]	Description
REVERSE SIGNAL [Open/Close]	Displays the status of reverse position signal judged by IPDM E/R.
IGN RELAY [Open/Close]	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Open/Close]	Displays the status of the push-button ignition switch judged by IPDM E/R.
NEUTRAL SW [Open/Close]	Displays the status of the neutral position signal (M/T) judged by IPDM E/R.
INTERLOCK/PNP SW [Open/Close]	Displays the status of the transmission range switch (CVT) judged by IPDM E/R.
OIL PRESSURE SW [Open/Close]	Displays the status of the oil pressure switch judged by IPDM E/R.
LED H/L RH STATUS [Open/Close]	Displays the LED headlamp (right) ON/OFF status judged by IPDM E/R. NOTE: This item is monitored only on the vehicle with LED headlamp.
LED H/L LH STATUS [Open/Close]	Displays the LED headlamp (left) ON/OFF status judged by IPDM E/R. NOTE: This item is monitored only on the vehicle with LED headlamp.
HOOD SW [Open/Close]	Displays the status of the hood switch judged by IPDM E/R.
COMPRESSOR [Off/On]	Displays the compressor drive status judged by IPDM E/R.
H/L WASHER PUMP [Off/On]	Displays the status of the headlamp washer relay judged by IPDM E/R.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
HORN RELAY [Off/On]	Displays the status of the horn relay judged by IPDM E/R.
COOLING FAN [Off/On]	Displays the cooling fan relay-4 drive status judged by IPDM E/R.
FRONT WIPER HI/LO RELAY [Off/On]	Displays the front wiper HI/LO relay drive status judged by IPDM E/R.
FRONT WIPER RELAY [Off/On]	Displays the front wiper relay drive status judged by IPDM E/R.
IGN RELAY OFF STATUS [Off/On]	Displays the status of the ignition relay OFF circuit judged by IPDM E/R.
IGN RELAY ON STATUS [Off/On]	Displays the status of the ignition relay ON circuit judged by IPDM E/R.
STEERING LOCK PWR SPLY [Off/On]	Displays the power supply status from IPDM E/R to the steering lock unit. NOTE: This item is monitored only on the vehicle with Intelligent Key system
HEIGHT SENSOR PWR SPLY [Off/On]	Displays the power supply status from IPDM E/R to the height sensor.
COOLING FAN RELAY 1 [Off/On]	Displays the status of the cooling fan relay-1 judged by IPDM E/R.
STARTER RELAY [Off/On]	Displays the status of the starter relay judged by IPDM E/R.
COMP ECV DUTY [%]	Displays the compressor control signal (PWM) status of IPDM E/R.
COOLING FAN RELAY 2 [%]	Displays the status of the cooling fan relay-5 judged by IPDM E/R.
FR FOG LAMP LH [%]	Displays the front fog lamp (left) output (PWM) status of IPDM E/R.
FR FOG LAMP RH [%]	Displays the front fog lamp (right) output (PWM) status of IPDM E/R.
LEVELIZER OUTPUT [%]	Displays the aiming motor drive signal (PWM) status of IPDM E/R.
PARKING LAMP [%]	Displays the parking lamp output (PWM) status of IPDM E/R.
TAIL LAMP LH [%]	Displays the tail lamp (left) output (PWM) status of IPDM E/R.
TAIL LAMP RH [%]	Displays the tail lamp (right) output (PWM) status of IPDM E/R.
DAYTIME RUNNING LIGHT LH [%]	Displays the daytime running light (left) output status of IPDM E/R.
DAYTIME RUNNING LIGHT RH [%]	Displays the daytime running light (right) output status of IPDM E/R.
HEADLAMP (HI) LH [%]	Displays the headlamp (HI) (left) output (PWM) status of IPDM E/R.
HEADLAMP (HI) RH [%]	Displays the headlamp (HI) (right) output (PWM) status of IPDM E/R.
HEADLAMP (LO) LH [%]	Displays the headlamp (LO) (left) output (PWM) status of IPDM E/R.
HEADLAMP (LO) RH [%]	Displays the headlamp (LO) (right) output (PWM) status of IPDM E/R.
A/C RELAY STUCK [OK/NG]	Displays the ON stuck status of the A/C relay judged by IPDM E/R.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
A/C RELAY [Off/On]	Displays the status of the A/C relay judged by IPDM E/R.
COMP ECV STATUS [OK/NG]	Displays the compressor malfunction diagnosis status judged by IPDM E/R.
VEHICLE SECURITY HORN [Off/On]	NOTE: The item is indicated, but not monitored.
BATTERY CURRENT SENSOR [OK/NG]	Displays the battery current sensor malfunction diagnosis status judged by IPDM E/R.
FRONT FOG LAMP [Off/On]	Displays the fog lamp illumination control status of IPDM E/R.
COMP ECV CURRENT [A]	Displays the electric current output to compressor judged by IPDM E/R.
BATTERY VOLTAGE [V]	Displays the status of the battery voltage judged by IPDM E/R.
COOLING FAN DUTY [%]	Displays the cooling fan output signal status of IPDM E/R.
HOOD SW (CAN) [Open/Close/NG]	Displays the status of the hood switch judged by IPDM E/R.
FRONT WIPER [STOP/HIGH/LOW/NG]	Displays the front wiper motor drive control status of IPDM E/R.
FR WIPER STOP POSITION [ACTIVE P/STOP P]	Displays the status of the front wiper position status judged by IPDM E/R.
HEADLAMP (HI) [Off/On]	Displays the headlamp (HI) illumination control status of IPDM E/R.
HEADLAMP (LO) [Off/On]	Displays the headlamp (LO) illumination control status of IPDM E/R.
IGNITION RELAY STATUS [Off/On]	Displays the ignition relay output status of IPDM E/R.
IGN RELAY MONITOR [Off/On]	Displays the status of the ignition relay judged by IPDM E/R.
IGNITION POWER SUPPLY [Off/On]	Displays the status of the ignition power supply judged by IPDM E/R.
INTERLOCK/PNP SW (CAN) [Off/On]	Displays the status of the transmission range switch signal that IPDM transmits via CAN communication.
NEUTRAL SWITCH (CAN) [Off/On/NG]	Displays the status of the neutral position switch (M/T) signal that IPDM transmits via CAN communication.
PUSH-BUTTON IGN SW (CAN) [Off/On]	Displays the status of the ignition switch signal that IPDM transmits via CAN communication.
TAIL LAMP [Off/On]	Displays the tail lamp illumination control status of IPDM E/R.
REVERSE SIGNAL (CAN) [Off/On/NG]	Displays the status of the reverse switch (M/T) signal that IPDM transmits via CAN communication.
ST&ST CONT RELAY STATUS [Off/Off, ON/ST R On]	Displays the status of the start control relay and start motor relay status judged by IPDM E/R.
STARTER MOTOR STATUS [Off/On/L-TIME]	Displays the status of the starter motor judged by IPDM E/R.
STARTER RELAY (CAN) [LOW/HIGH/NG]	Displays the status of the IPDM E/R transmits the starter control relay status signal via CAN communication.
IPDM NOT SLEEP [NO RDY/READY]	Displays the status of the IPDM E/R transmits the not sleep signal via CAN communication.

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DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
AFTER COOLING TIME [No request/0.5min/1.0min/1.5min/ 2.0min/2.5min/3.0min/3.5min/4min/5min/ 6min/8min/10min/12min/14min/16min]	NOTE: The item is indicated, but not monitored.
AFTER COOLING SPEED [0%/25%/40%/55%/70%/78%/85%/ 100%]	NOTE: The item is indicated, but not monitored.
COOLING FAN TYPE [RENAULT/NISSAN]	NOTE: The item is indicated, but not monitored.
COMPRESSOR REQ 1 [Off/On]	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
VHCL SECURITY HORN REQ [Off/On]	NOTE: The item is indicated, but not monitored.
DTRL REQ [Off/On]	Displays the status of the daytime running light request signal received from BCM via CAN communication.
SLEEP/WAKE UP [SLEEP/WAKEUP]	NOTE: The item is indicated, but not monitored.
CLUTCH INTERLOCK SW [Off/On/NG]	NOTE: The item is indicated, but not monitored.
CRANKING ENABLE-TCM [OK/NG]	Displays the status of the cranking enable signal received from TCM via CAN communication.
CRANKING ENABLE-ECM [OK/NG/STOP/No request]	Displays the status of the cranking enable signal received from ECM via CAN communication.
CAN DIAGNOSIS [OK/NG]	Displays the status of the CAN diagnosis signal received from BCM via CAN communication.
FRONT FOG LAMP REQ [Off/On]	Displays the status of the front fog light request signal received from BCM via CAN communication.
H/L WASHER REQ [Off/On]	Displays the status of the headlamp washer request signal received from BCM via CAN communication.
PASSING REQ [Off/On]	NOTE: The item is indicated, but not monitored.
HIGH BEAM REQ [Off/On]	Displays the status of the high beam 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.
COOLING FAN REQ [%]	Displays the status of the cooling fan speed request signal received from ECM via CAN communication.
ENGINE STATUS [STOP/IDLING/RUN]	Displays the status of the engine status signal received from ECM via CAN communication.
TURN SIGNAL REQ [Off/LH/RH]	Displays the status of the turn indicator signal received from BCM via CAN communication.
FR WIPER REQ [RETURN/STOP/NG/LOW/HIGH]	Displays the status of the front wiper request signal received from BCM via CAN communication.
SHIFT POSITION [OFF/P/R/N/D/S/L/B/1/2/3/4/5/6/7]	Displays the status of the shift position signal received from TCM via CAN communication.
LOW BEAM REQ [Off/On]	Displays the status of the low beam request signal received from BCM via CAN communication.
POSITION LIGHT REQ [Off/On]	Displays the status of the position light request signal received from BCM via CAN communication.
COMPRESSOR REQ 2 [Off/On]	Displays the status of the A/C ON signal received from A/C auto amp. via CAN communication.
IGNITION SW [Off/On/START/No request]	Displays the status of the ignition switch ON signal and starter control relay request signal received from BCM via CAN communication.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
VEHICLE SPEED (METER) [km/h]	Displays the status of the A/C ON signal received from A/C auto amp. via CAN communication.
BAT DISCHARGE COUNT [—]	Monitor the cumulative discharge value of the battery. NOTE: When 65,000 or more is counted, replace the battery.
P LAMP CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the parking lamp circuit. NOTE: When the number of parking lamp circuit retries count is 20, this item counts 1.
NMB P LAMP CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the parking lamp circuit. NOTE: When the number of short circuits in the parking lamp circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB P LAMP CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the parking lamp circuit.
DTRL LH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the daytime running light (left) circuit. NOTE: When the number of daytime running light (left) circuit retries count is 20, this item counts 1.
NMB DTRL LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the daytime running light (left) circuit. NOTE: When the number of short circuits in the daytime running light (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB DTRL LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the daytime running light (left) circuit.
DTRL RH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the daytime running light (right) circuit. NOTE: When the number of daytime running light (right) circuit retries count is 20, this item counts 1.
NMB DTRL RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the daytime running light (right) circuit. NOTE: When the number of short circuits in the daytime running light (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB DTRL RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the daytime running light (right) circuit.
F FOG LH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the front fog lamp (left) circuit. NOTE: When the number of front fog lamp (left) circuit retries count is 20, this item counts 1.
NMB F FOG LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the front fog lamp (left) circuit. NOTE: When the number of short circuits in the front fog lamp (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB F FOG LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the front fog lamp (left) circuit.
F FOG RH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the front fog lamp (right) circuit. NOTE: When the number of front fog lamp (right) circuit retries count is 20, this item counts 1.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
NMB F FOG RH CIRC RETRY [0 – 20]	<p>Monitor the number of times that the smart FET in IPDM E/R permits the retry of the front fog lamp (right) circuit.</p> <p>NOTE: When the number of short circuits in the front fog lamp (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.</p>
NMB F FOG RH CIRC SHORT [0 – 5]	<p>Monitor the number of times that the smart FET in IPDM E/R detects the over current of the front fog lamp (right) circuit.</p>
HL (HI) LH CIRC MALFUNCTN [0 – 1]	<p>Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (HI) (left) circuit.</p> <p>NOTE: When the number of headlamp (HI) (left) circuit retries count is 20, this item counts 1.</p>
NMB HL (HI) LH CIRC RETRY [0 – 20]	<p>Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (HI) (left) circuit.</p> <p>NOTE: When the number of short circuits in the headlamp (HI) (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.</p>
NMB HL (HI) LH CIRC SHORT [0 – 5]	<p>Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (HI) (left) circuit.</p>
HL (HI) RH CIRC MALFUNCTN [0 – 1]	<p>Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (HI) (right) circuit.</p> <p>NOTE: When the number of headlamp (HI) (right) circuit retries count is 20, this item counts 1.</p>
NMB HL (HI) RH CIRC RETRY [0 – 20]	<p>Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (HI) (right) circuit.</p> <p>NOTE: When the number of short circuits in the headlamp (HI) (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.</p>
NMB HL (HI) RH CIRC SHORT [0 – 5]	<p>Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (HI) (right) circuit.</p>
S/L CIRC MALFUNCTN [0 – 1]	<p>Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the steering lock circuit.</p> <p>NOTE: When the number of steering lock circuit retries count is 20, this item counts 1.</p>
NMB S/L CIRC RETRY [0 – 20]	<p>Monitor the number of times that the smart FET in IPDM E/R permits the retry of the steering lock circuit.</p> <p>NOTE: When the number of short circuits in the steering lock circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.</p>
NMB S/L CIRC SHORT [0 – 5]	<p>Monitor the number of times that the smart FET in IPDM E/R detects the over current of the steering lock circuit.</p>
HL (LO) LH CIRC MALFUNCTN [0 – 1]	<p>Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (LO) (left) circuit.</p> <p>NOTE: When the number of headlamp (LO) (left) circuit retries count is 20, this item counts 1.</p>
NMB HL (LO) LH CIRC RETRY [0 – 20]	<p>Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (LO) (left) circuit.</p> <p>NOTE: When the number of short circuits in the headlamp (LO) (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.</p>
NMB HL (LO) LH CIRC SHORT [0 – 5]	<p>Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (LO) (left) circuit.</p>
HL (LO) RH CIRC MALFUNCTN [0 – 1]	<p>Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (LO) (right) circuit.</p> <p>NOTE: When the number of headlamp (LO) (right) circuit retries count is 20, this item counts 1.</p>

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
NMB HL (LO) RH CIRC RETRY [0 – 20]	<p>Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (LO) (right) circuit.</p> <p>NOTE: When the number of short circuits in the headlamp (LO) (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.</p>
NMB HL (LO) RH CIRC SHORT [0 – 5]	<p>Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (LO) (right) circuit.</p>
T LAMP LH CIRC MALFUNCTN [0 – 1]	<p>Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the tail lamp (left) circuit.</p> <p>NOTE: When the number of tail lamp (left) circuit retries count is 20, this item counts 1.</p>
NMB T LAMP LH CIRC RETRY [0 – 20]	<p>Monitor the number of times that the smart FET in IPDM E/R permits the retry of the tail lamp (left) circuit.</p> <p>NOTE: When the number of short circuits in the tail lamp (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.</p>
NMB T LAMP LH CIRC SHORT [0 – 5]	<p>Monitor the number of times that the smart FET in IPDM E/R detects the over current of the tail lamp (left) circuit.</p>
T LAMP RH CIRC MALFUNCTN [0 – 1]	<p>Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the tail lamp (right) circuit.</p> <p>NOTE: When the number of tail lamp (right) circuit retries count is 20, this item counts 1.</p>
NMB T LAMP RH CIRC RETRY [0 – 20]	<p>Monitor the number of times that the smart FET in IPDM E/R permits the retry of the tail lamp (right) circuit.</p> <p>NOTE: When the number of short circuits in the tail lamp (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.</p>
NMB T LAMP RH CIRC SHORT [0 – 5]	<p>Monitor the number of times that the smart FET in IPDM E/R detects the over current of the tail lamp (right) circuit.</p>
BATTERY STATUS [OK/NG]	<p>Monitor the battery status from the battery output.</p>

ACTIVE TEST

Test item	Operation	Description
HORN	Off	OFF
	On	Operates horn relay for 20 ms.
HEADLAMP WASHER	Off	OFF
	On	Operates headlamp washer relay for 10 ms.
FRONT WIPER	Off	OFF
	Low	Operates the front wiper relay.
	High	Operates the front wiper relay and front wiper HI/LO relay.
COMPRESSOR	Off	OFF
	On	Operates the A/C relay.
COOLING FAN (MONO)	Off	OFF
	Lo	Run the cooling fan at low speed.
	Hi	Run the cooling fan at high speed.
HEADLAMP (HI)	Off	OFF
	On	Operates the headlamp (HI)
HEADLAMP (LO)	Off	OFF
	On	Operates the headlamp (LO).

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DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Test item	Operation	Description
FRONT FOG LAMP	Off	OFF
	On	Operates the front fog lamp.
DAYTIME RUNNING LIGHT	Off	OFF
	On	Operates the parking lamp (daytime running light operation).
PARKING LAMP	Off	OFF
	On	Operates the parking lamp.
TAIL LAMP	Off	OFF
	On	Operates the tail lamp.
OPTIC AXIS ACTIVE TEST	Default	Return the optical axis to the default position. NOTE: While the headlamp is OFF, it does not return to the default position.
		Lower
		Adjust the optical axis to the lowermost point.

WORK SUPPORT

Work item	Description
SENSOR INITIALIZE	Adjusts the height sensor signal output value in the unloaded vehicle condition.
CML B/DCHRG CRNT CLEAR	In this mode, cumulative battery discharge current is cleared.

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000010785424

ECU	Reference
BCM	BCS-53, "Reference Value"
	BCS-76, "Fail-safe"
	BCS-77, "DTC Inspection Priority Chart"
	BCS-78, "DTC Index"
IPDM E/R	PCS-22, "Reference Value"
	PCS-34, "Fail-safe"
	PCS-37, "DTC Inspection Priority Chart"
	PCS-38, "DTC Index"

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WIPER AND WASHER SYSTEM

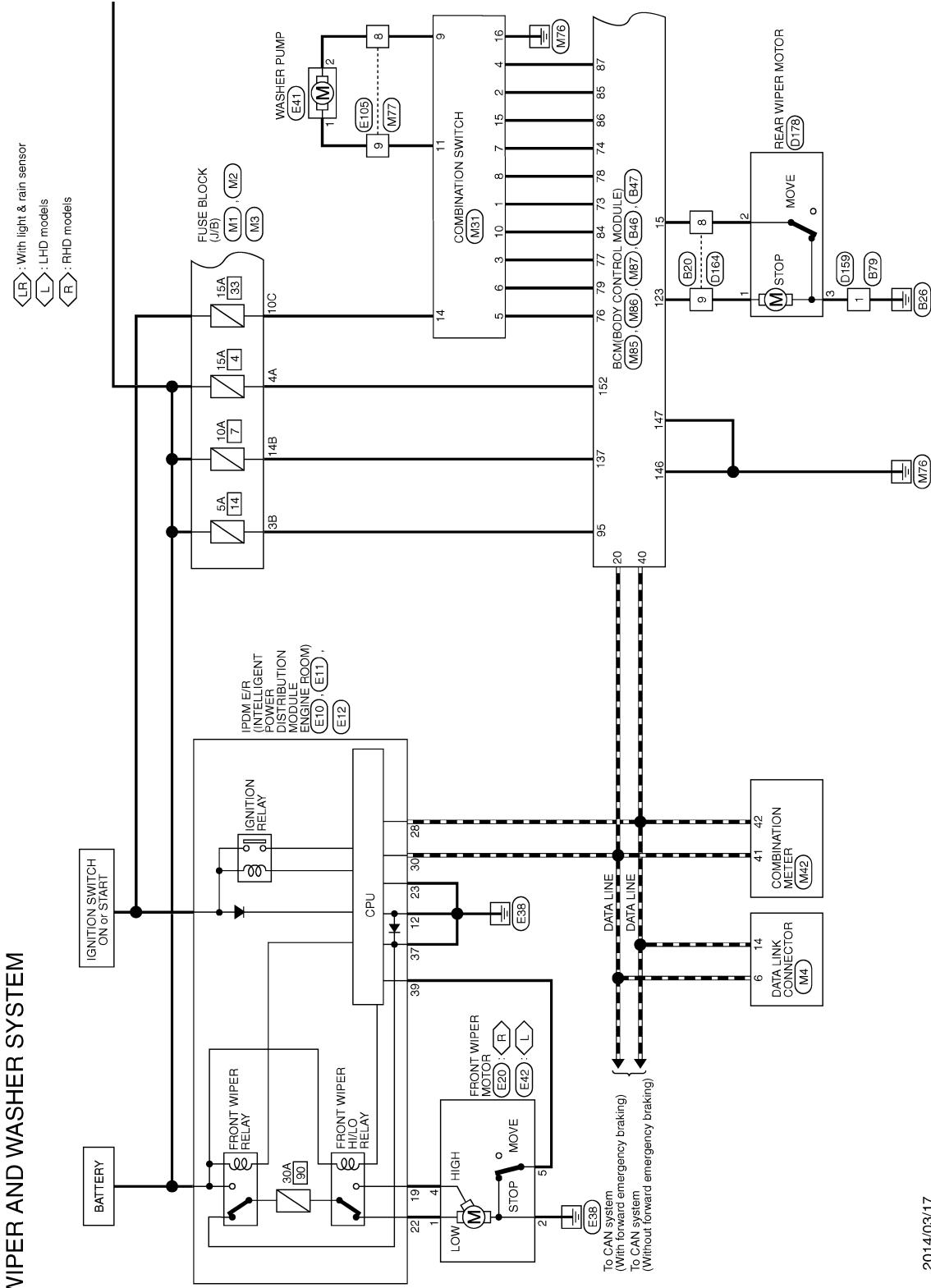
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WIRING DIAGRAM

WIPER AND WASHER SYSTEM

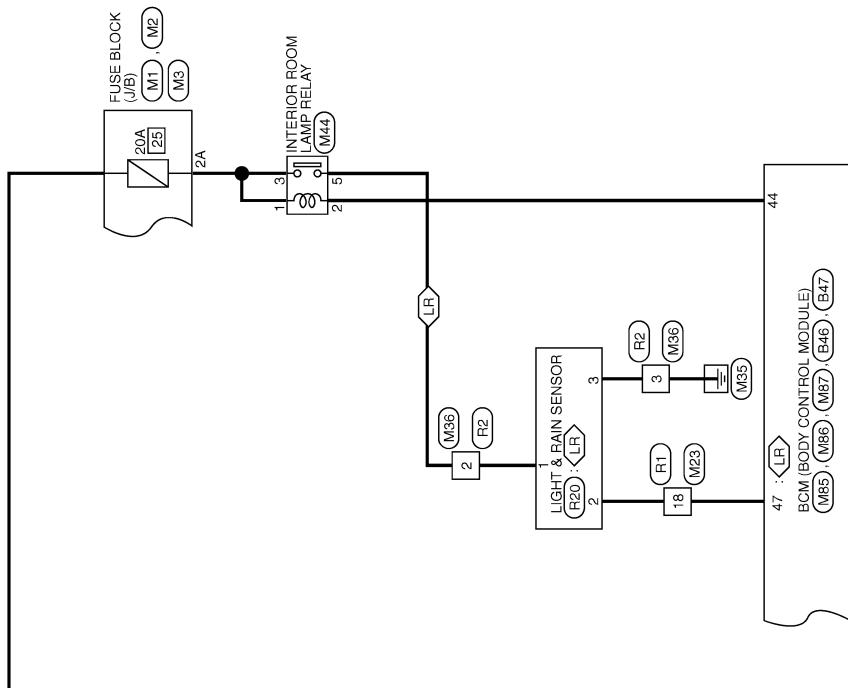
Wiring Diagram

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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >



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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

HS.		Terminal Color Of Wire			Signal Name [Specification]		
Terminal No.	Signal Name [Specification]	Color Of Wire	No.	Signal Name [Specification]	Color Of Wire	No.	Signal Name [Specification]
8	LAG	-	6	BACK DOOR OPENER REQUEST SW	R	1	W
9	LAIR	-	9	HANDS FREE SENSOR	G	2	W
10	LAIV	-	10	REAR RH/DOOR SW	W	3	B
12	L	-	11	BACK DOOR SW	LG		
13	SB	-	12	REAR LH/DOOR SW	R		
14	SB	-	13	PASSENGER DOOR SW	SB		
15	G	-	15	REAR WIPER/AUTO STOP	LAG		

Part No.	Connector No.	Connector Name	Terminal No.	Color Of Wire	Signal Name [Specification]
14	13	FASTERER DOOR SW	1	BLK	-
15	14	REAR WIPER/AUTO STOP	2	BLK	-
16	15	LAG	3	BLK	-
	16	Y	4	BLK	-
	17	SB	5	BLK	-
	17	DRIVER DOOR SW	6	BLK	-
	20	L	7	BLK	-
	21	BR	8	BLK	-
	22	Y	9	BLK	-
	23	L	10	BLK	-
	24	G	11	BLK	-
	38	V	12	BLK	-
	39	Y	13	BLK	-
	40	P	14	BLK	-
			15	BLK	-
			16	BLK	-
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			334	BLK	-
			335	BLK	-
			336		

Signal Name [Specification]		Terminal No.		Color Of Wire		Terminal No.		Color Of Wire		Signal Name [Specification]	
CONNECTOR NO.	379	1	2	Y	W	3	4	P	Y	WIRE TO WIRE	CONNECTOR NAME
CONNECTOR TYPE	MD20M/W/LC	5	6	W	W	7	8	W	W	MD20M/W/LC	CONNECTOR NO.
1	2	9	10	W	W	11	12	W	W	REAR FOG LAMP OUTPUT	REAR FOG LAMP OUTPUT
3	4	13	14	W	W	15	16	W	W	REAR DOOR UNLOCK OUTPUT	REAR DOOR UNLOCK OUTPUT
5	6	17	18	W	W	19	20	W	W	REAR DOOR LOOK OUT INPUT	REAR DOOR LOOK OUT INPUT
7	8	21	22	W	W	23	24	W	W	BACK DOOR OPENER CONT	BACK DOOR OPENER CONT
9	10	25	26	W	W	27	28	W	W	LUGGAGE ROOM LAMP CONT	LUGGAGE ROOM LAMP CONT

Terminal No.	Color Of Wire	Signal Name [Specification]	Connector type	Mo2M/WL/C	Wire No.	Wire	Original name (specification)
121	LAV	BACK DOOR OPENER/CONT			8	W	-
122	Y	REAR FOG LAMP/OUTPUT			9	W	-
123	LAV	REAR WIPER/OUTPUT			10	W	-
124	W	REAR DOOR UNLOCK/OUTPUT			12	W	-
125	L	REAR DOOR LOCK/OUTPUT			13	W	-
127	R	LUGGAGE ROOM/LAMP/CONT			14	W	-
129	LAV	STOP LAMP/L/H/CONT			15	W	-
131	R	REAR DOOR SUPERLOCK/OUTPUT			16	W	-
133	GR	TURN SIG L/H/REAR)					
134	LAV	STOP LAMP RH/OUT					
136	P	TURN SIG RH/REAR)					

WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

Connector No.	E11
Connector Name	FRONT INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	Terseult 24340546BR



Terminal Color Of No. Wire	Signal Name [Specification]
19 V	-
20 R	-
21 LG	-
22 Y	-
23 B	-
24 W	-

Connector No.	E12
Connector Name	FRONT INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH24FCY-NH



Terminal Color Of No. Wire	Signal Name [Specification]
25 LG	-
26 W	-
27 SB	-
28 P	-
30 L	-
31 G	-
32 B	-
33 BG	-
34 LG	-
35 V	-
36 Y	-
37 B	-
38 GR	-
39 BR	-

Connector No.	E20
Connector Name	FRONT WIPER MOTOR
Connector Type	HS05FGY



Terminal Color Of No. Wire	Signal Name [Specification]
1 Y	-
2 B	-
4 V	-
5 BR	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



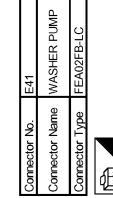
Terminal Color Of No. Wire	Signal Name [Specification]
65 G	-
66 BG	-
67 L	-
68 R	-
71 V	-
72 L	-
73 R	-
76 L	-
77 LG	-
78 V	-
79 SHIELD	-
80 GR	-
82 Y	-
83 SB	-
84 L	-
85 G	-
86 Y	-
87 B	-
88 B	-
91 R	-
92 BR	-
93 W	-
96 GR	-
97 R	-
98 V	-
99 Y	-

Connector No.	E42
Connector Name	FRONT WIPER MOTOR
Connector Type	HS05FGY



Terminal Color Of No. Wire	Signal Name [Specification]
38 G	-
39 BR	-
40 L	-
41 P	-

Connector No.	E14
Connector Name	WASHER PUMP
Connector Type	FE02FB-LC



Terminal Color Of No. Wire	Signal Name [Specification]
9 LG	-
10 W	-
20 W	-
21 B	-
22 SHIELD	-
31 Y	-
32 W	-
33 SB	-
34 LG	-
35 BG	-
36 LG	-
37 V	-

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WIPER AND WASHER SYSTEM

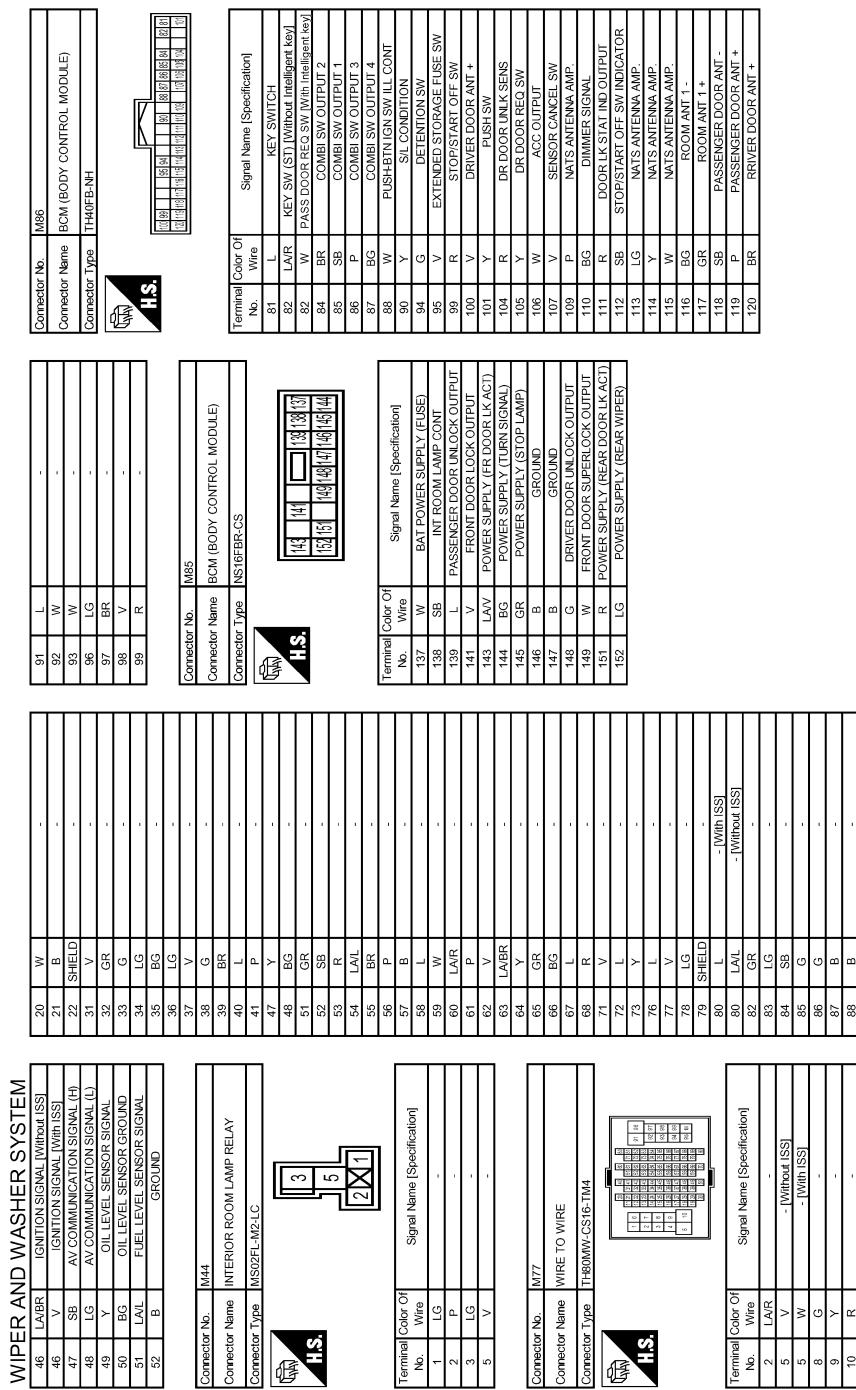
< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

Connector No. M1	Connector No. M3	Connector No. M23	Connector No. M42
Connector Name FUSE BLOCK (JB)	Connector Name FUSE BLOCK (JB)	Connector Name WIRE TO WIRE	Connector Name COMBINATION METER
Connector Type NS16FW-M2	Connector Type NS16FW-CS	Connector Type TH24FW-NH	Connector Type TH12FW-NH
			
Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]
1A L	10C LG	21 10 9 8 7 6 5 4 3 2 1	41 12 13 14 15 16 17 18 19 20 21 22 23
2A LG	13C LAG	24 25 26 27 28 29 30 31 32 33	42 43 44 45 46 47 48 49 50 51 52
3A Y	14C R	3 4 5 6 7 8 9 10 11 12 13	49 50 51 52 53 54 55 56 57 58
4A LG	15C L		
5A R	16C L/A/W		
6A BG	1C R		
7A BR	2C G		
8A SB	3C Y		
	4C LG		
	5C GR		
	6C L/A/R		
	7C Y		
	8C BR	- (With SS)	
	8C L/A/R	- (Without SS)	
	9C L		
Connector No. M2	Connector Name FUSE BLOCK (JB)	Connector Name COMBINATION SWITCH	Connector Name COMBINATION METER
Connector Name NS16FW-CS	Connector Type NS16FW-CS	Connector Type TH16FW-NH	Connector Type TH12FW-NH
			
Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]
10B GR - (With MR20 engine or R31 engine)	11 12 13 14 15 16	8 9 10 11 12 13	41 42 43 44 45 46
10B LA/GR - (With QR25 engine)	13 14 15 16 17 18	14 15 16 17 18 19	47 48 49 50 51 52
12B BR	12 13 14 15 16 17	16 17 18 19 20 21	
14B W			
15B W			
16B GR			
1B G			
2B R			
3B V			
6B LAL			
7B LAV			
Connector No. M4	Connector Name DATA LINK CONNECTOR	Connector Name DATA LINK CONNECTOR	Connector Name DATA LINK CONNECTOR
Connector Name NS16FW	Connector Type BD16FW	Connector Type BD16FW	Connector Type BD16FW
			
Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]	Terminal Color Of No. Wire Signal Name [Specification]
10B GR - (With MR20 engine or R31 engine)	11 12 13 14 15 16	8 9 10 11 12 13	41 42 43 44 45 46
10B LA/GR - (With QR25 engine)	13 14 15 16 17 18	14 15 16 17 18 19	47 48 49 50 51 52
12B BR	12 13 14 15 16 17	16 17 18 19 20 21	
14B W			
15B W			
16B GR			
1B G			
2B R			
3B V			
5B B			
6B W			
6B L			
7B Y			

WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

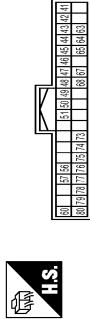


WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

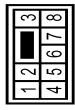
Connector No.	R1	Connector No.	R20
Connector Name	WIRE TO WIRE	Connector Name	LIGHT & TRAIN SENSOR
Connector Type	TH24MW-NH	Connector Type	AAB03FB



Terminal	Color Of Wire	Signal Name [Specification]	Terminal	Color Of Wire	Signal Name [Specification]
41	V	STEERING LOCK/UNL POWER SUPPLY	1	-	-
42	LA/G	TURN SIG (LH SIDE)	2	-	-
43	LA/Y	TURN SIG (RH SIDE)	3	-	-
44	P	INTERIOR ROOM LAMP RELAY/CONT	9	-	-
45	R	CANL	13	-	-
46	L	CANH	15	-	-
47	G	LIGHT & TRAIN SENSOR	16	-	-
48	L	CANH	17	-	-
49	R	CANL	18	-	-
50	BG	DOOR LOCK SW	19	-	-
51	Y	HAZARD SW	20	-	-
56	P	DONGLE	21	-	-
57	L	CUT SHIFT SELECT/DETENT SW/PWR			
60	R	HEADLAMP/WASHER SW			
63	G	POWER WINDOW RELAY/CONT			
64	LA/R	REARWINDOW DEFOGGER RELAY/CONT			
65	BR	ACC RELAY/CONT			
67	Y	IGN RELAY (FBI) CONT/OUTPUT			
68	LA/W	BLOWER RELAY/CONT			
73	LG	COMBI SW INPUT 5			
74	Y	COMBI SW OUTPUT 5			
75	BG	SECURITY IND LAMP/CONT			
76	G	COMBI SW INPUT 3			
77	GR	COMBI SW INPUT 4			
78	V	COMBI SW INPUT 1			
79	W	COMBI SW INPUT 2			
80	SB	DOOR UNLOCK SW			

Terminal	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

Terminal	Color Of Wire	Signal Name [Specification]	Terminal	Color Of Wire	Signal Name [Specification]
1	-	-	1	-	-
2	-	-	2	-	-
3	-	-	3	-	-
4	-	-	4	-	-
5	-	-	5	-	-
6	-	-	6	-	-
7	-	-	7	-	-
8	-	-	8	-	-



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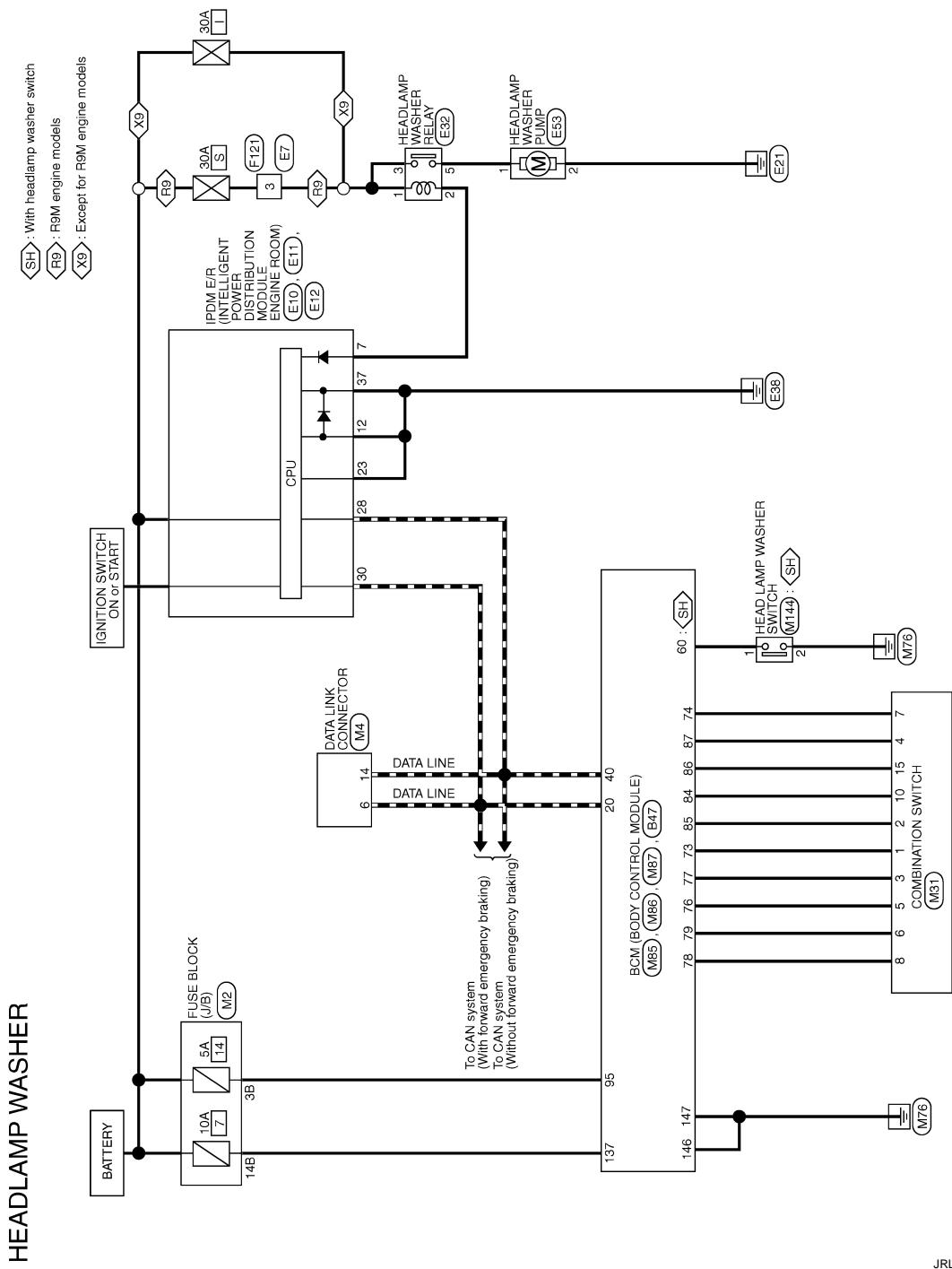
HEADLAMP WASHER SYSTEM

< WIRING DIAGRAM >

HEADLAMP WASHER SYSTEM

Wiring Diagram

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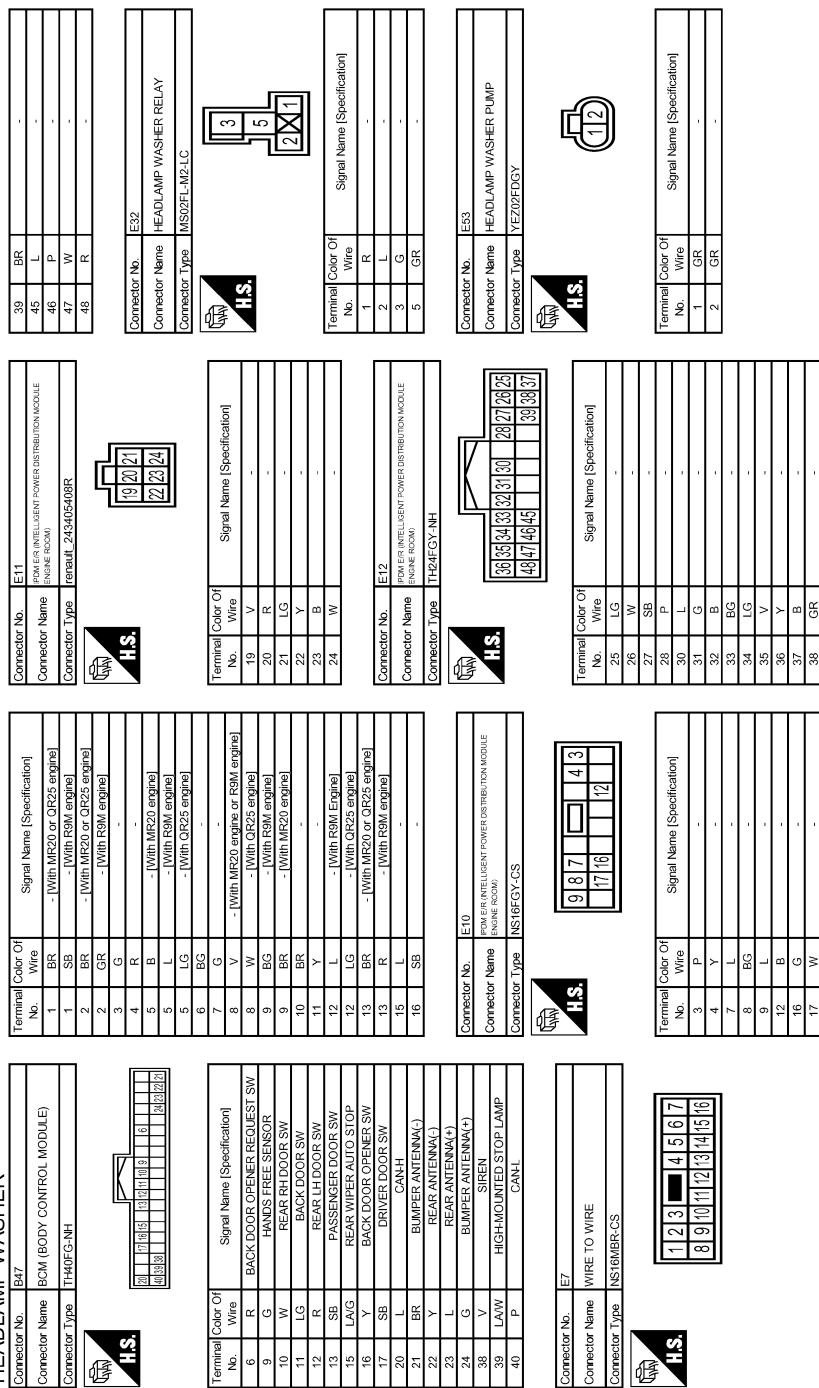
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HEADLAMP WASHER SYSTEM

< WIRING DIAGRAM >

HEADLAMP WASHER



HEADLAMP WASHER SYSTEM

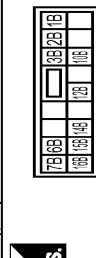
< WIRING DIAGRAM >

HEADLAMP WASHER

Connector No.	F121
Connector Name	WIRE TO WIRE
Connector Type	NST6FBR-CS



Connector No.	M2
Connector Name	FUSE BLOCK (JB)
Connector Type	NST6FBR-CS



Terminal Color Of No.	Wire	Signal Name (Specification)
1	B	- [With MR20 or QG25 engine] - [With F9A engine]
1	P	- [With F9A engine or ROM engine] - [With QR25 engine]
2	BR	- [With QR25 engine]
2	GR	- [With MR20 engine]
2	Y	- [With ROM engine]
3	G	-
4	BG	-
5	L	- [With MR20 engine] - [With F9A engine]
5	LG	- [With F9A engine] - [With QR25 engine]
6	V	-
7	G	-
8	W	- [With MR20 engine or F9A engine] - [With QR25 engine]
9	B	- [With MR20 engine] - [With F9A engine]
9	W	- [With F9A engine]
10	BR	-
10	P	[Without SS]
11	R	- [With SS]
12	G	- [With QR25 engine]
12	L	- [With F9A engine]
13	R	- [With F9A engine]
13	Y	- [With MR20 or QG25 engine]
15	L	-
16	LG	-

Terminal Color Of No.	Wire	Signal Name (Specification)
1	LG	INPUT_5
2	SB	OUTPUT_1
3	GR	INPUT_4
4	BG	OUTPUT_4
5	G	INPUT_3
6	W	INPUT_2
7	Y	-
8	V	-
9	G	RR_WASH_MOTOR
10	BR	OUTPUT_2
11	Y	FR_WASH_MOTOR
14	LG	IGN
15	P	OUTPUT_3
16	GR	GND

Terminal Color Of No.	Wire	Signal Name (Specification)
11	LG	-
12	SB	-
13	GR	-
14	P	-
15	Y	-
16	G	-

Terminal Color Of No.	Wire	Signal Name (Specification)
11	LG	-
12	SB	-
13	GR	-
14	P	-
15	Y	-
16	G	-

Terminal Color Of No.	Wire	Signal Name (Specification)
1	LG	POWER_SUPPLY(STOP_LAMP)
145	GR	POWER_SUPPLY(STOP_LAMP)
146	B	GROUND
147	G	DOOR/DOOR UNLOCK_OUTPUT
148	W	FRONT DOOR SUPERLOCK_OUTPUT
149	R	POWER_SUPPLY(REAR DOOR_LK ACT)
151	LG	POWER_SUPPLY(REAR WIPER)
162	GR	POWER_SUPPLY(REAR WIPER)

Terminal Color Of No.	Wire	Signal Name (Specification)
1	LG	POWER_SUPPLY(STOP_LAMP)
145	GR	POWER_SUPPLY(STOP_LAMP)
146	B	GROUND
147	G	DOOR/DOOR UNLOCK_OUTPUT
148	W	FRONT DOOR SUPERLOCK_OUTPUT
149	R	POWER_SUPPLY(REAR DOOR_LK ACT)
151	LG	POWER_SUPPLY(REAR WIPER)
162	GR	POWER_SUPPLY(REAR WIPER)

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HEADLAMP WASHER SYSTEM

< WIRING DIAGRAM >

HEADLAMP WASHER		Connector No.	M144
		Connector Name	HEADLAMP WASHER SWITCH
		Connector Type	TH09FW-NH
Connector No.	M87		
Connector Name	BCM (BODY CONTROL MODULE)		
Connector Type	TH09FGY-NH		
			
Terminal	Color Of Wire	Signal Name [Specification]	Signal Name [Specification]
1	R	-	-
2	B	-	-
3	G	-	-
4	B	-	-
Terminal	Color Of Wire	Signal Name [Specification]	Signal Name [Specification]
41	V	STEERING LOCK INIT POWER SUPPLY	
42	LA/G	TURN SIG (L SIDE)	
43	LA/Y	TURN SIG (R SIDE)	
44	P	INTERIOR ROOM LAMP RELAY/CONT	
45	R	CANL	
46	L	CANH	
47	G	LIGHT RAIN SENSOR	
48	L	CANH	
49	R	CANL	
50	BG	DOOR LOCK SW	
51	Y	HAZARD SW	
56	P	DOOR	
57	L	CVT SHIFT SELECT/DETENT SW/ PWR	
60	R	HEADLAMP WASHER SW	
63	G	POWER WINDOW RELAY/CONT	
64	LA/R	REAR WINDOW DEFOGGER RELAY/CONT	
65	BR	ACC RELAY/CONT	
67	Y	IGN RELAY (F/B) CONT/OUTPUT	
68	LA/W	BL DIVER RELAY/CONT	
73	LG	COMBI SW INPUT 5	
74	Y	COMBI SW OUTPUT 5	
75	BG	SECURITY IND LAMP/CONT	
76	G	COMBI SW INPUT 3	
77	GR	COMBI SW INPUT 4	
78	Y	COMBI SW INPUT 1	
79	W	COMBI SW INPUT 2	
80	SB	DOOR UNLOCK SW	

JRLWD5748GB

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

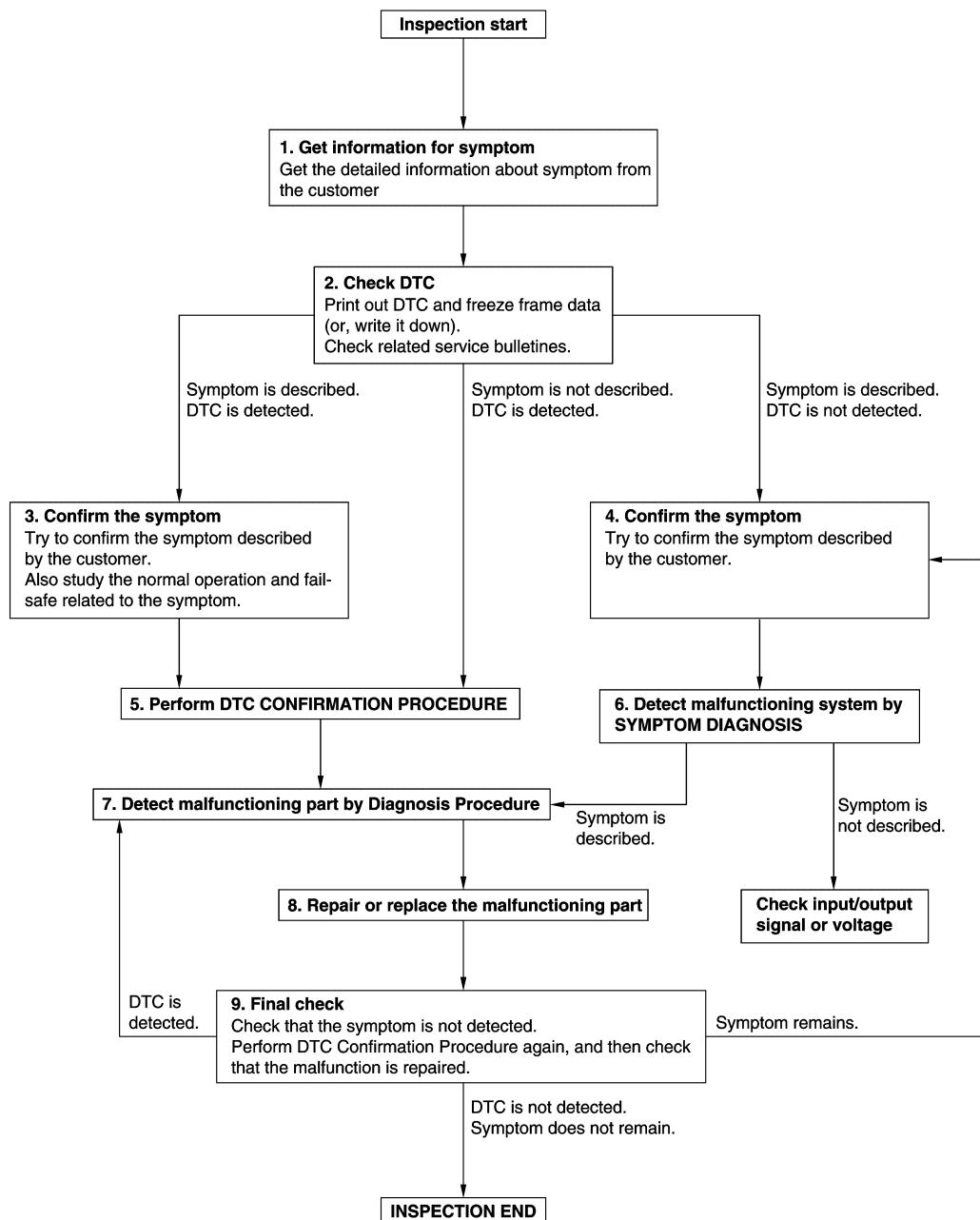
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

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OVERALL SEQUENCE



DETAILED FLOW

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

1. GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2. CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.
 - Record DTC and freeze frame data (Print them out using CONSULT.)
 - Erase DTC.
 - Study the relationship between the cause detected by DTC and the symptom described by the customer.
3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.

Symptom is described, DTC is not detected>>GO TO 4.

Symptom is not described, DTC is detected>>GO TO 5.

3. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Also study the normal operation and fail-safe related to the symptom.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4. CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.

If two or more DTCs are detected, refer to DTC INSPECTION PRIORITY CHART, and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.

If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.

NO >> Check according to [GI-44, "Intermittent Incident"](#).

6. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

Is the symptom described?

YES >> GO TO 7.

NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7. DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check according to [GI-44, "Intermittent Incident"](#).

A

8.REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
3. Check DTC. If DTC is detected, erase it.

B

C

D

>> GO TO 9.

9.FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.

When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

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Is DTC detected and does symptom remain?

G

YES-1 >> DTC is detected: GO TO 7.

YES-2 >> Symptom remains: GO TO 4.

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NO >> Before returning the vehicle to the customer, always erase DTC.

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FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:0000000010785427

1. CHECK FRONT WIPER LO OPERATION

CONSULT 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-54, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010785428

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect front wiper motor connector.
3. Turn ignition switch ON.
4. Turn front wiper switch to LO, and wait for 10 seconds.
5. Check voltage between front wiper motor harness connector and ground.

LHD

(+) Front wiper motor		(-)	Voltage
Connector	Terminal		
E42	1	Ground	9 – 16 V (10 seconds*)

RHD

(+) Front wiper motor		(-)	Voltage
Connector	Terminal		
E20	1	Ground	9 – 16 V (10 seconds*)

*: According to front wiper protection function, IPDM E/R supplies voltage for 10 seconds (9 – 16 V) and then stops for 20 seconds (0 – 1 V). This operation occurs repeatedly.

Is the inspection result normal?

YES >> Replace front wiper motor.

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.

LHD

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E11	22	E42	1	Existed

FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RHD

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E11	22	E20	1	Existed

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

IPDM E/R		—	Continuity
Connector	Terminal		
E11	22	Ground	Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-60, "Removal and Installation"](#).

NO >> Repair or replace harness.

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FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:0000000010785429

1. CHECK FRONT WIPER HI OPERATION

CONSULT 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-56, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010785430

1. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

CONSULT 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.

LHD

(+) (+)		(-)	Condition		Voltage
Front wiper motor	Connector		Terminal	FRONT WIPER	
E42	4	Ground		Hi	9 – 16 V (10 seconds*)

RHD

(+) (+)		(-)	Condition		Voltage
Front wiper motor	Connector		Terminal	FRONT WIPER	
E20	4	Ground		Hi	9 – 16 V (10 seconds*)

*: According to front wiper protection function, IPDM E/R supplies voltage for 10 seconds (9 – 16 V) and then stops for 20 seconds (0 – 1 V). This operation occurs repeatedly.

Is the inspection result normal?

YES >> Replace front wiper motor.

NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR (HI) 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.

LHD

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E11	19	E42	4	Existed

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RHD

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E11	19	E20	4	Existed

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

IPDM E/R		—	Continuity
Connector	Terminal		
E11	19	Ground	Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-60, "Removal and Installation"](#).

NO >> Repair or replace harness.

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FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000010785431

1. CHECK FRONT WIPER STOP POSITION SIGNAL

CONSULT DATA MONITOR

1. Select "FR WIPER STOP POSITION" 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
FR WIPER STOP POSITION	Front wiper motor	Stop position	STOP P
		Except stop position	ACTIVE P

Is the inspection result normal?

YES >> Front wiper stop position signal circuit is normal.

NO >> Refer to [WW-58, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010785432

1. CHECK IPDM E/R OUTPUT VOLTAGE

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

LHD

(+) Front wiper motor		(-)	Voltage
Connector	Terminal		
E42	5	Ground	9 – 16 V

RHD

(+) Front wiper motor		(-)	Voltage
Connector	Terminal		
E20	5	Ground	9 – 16 V

Is the inspection result normal?

YES >> Replace front wiper motor.

NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR (AUTO STOP) 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.

LHD

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E12	39	E42	5	Existed

RHD

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E12	39	E20	5	Existed

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

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

IPDM E/R		—	Continuity
Connector	Terminal		
E12	39	Ground	Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-60, "Removal and Installation"](#).

NO >> Repair or replace harness.

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FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000010785433

1. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

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

LHD

Front wiper motor		—	Continuity
Connector	Terminal		
E42	2	Ground	Existed

RHD

Front wiper motor		—	Continuity
Connector	Terminal		
E20	2	Ground	Existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Repair or replace harness.

LIGHT & RAIN SENSOR

< DTC/CIRCUIT DIAGNOSIS >

LIGHT & RAIN SENSOR

Component Function Check

INFOID:0000000010785434

1. CHECK FRONT WIPER AUTO OPERATION

1. Clean light & 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 >> Light & rain sensor circuit is normal.
NO >> Refer to [WW-61, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010785435

1. CHECK FUSE

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

Fuse No.	Capacity
25	20 A

Is the inspection result normal?

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

2. CHECK LIGHT & RAIN SENSOR POWER SUPPLY

1. Disconnect light & rain sensor connector.
2. Turn ignition switch ON.
3. Check voltage between light & rain sensor harness connector and ground.

(+)		(-)	Voltage
Light & rain sensor			
Connector	Terminal		
R20	1	Ground	Battery voltage

Is the inspection result normal?

- YES >> GO TO 7.
NO >> GO TO 3.

3. CHECK INTERIOR ROOM LAMP RELAY CIRCUIT 1

1. Turn ignition switch OFF.
2. Remove interior room lamp relay.
3. Check voltage between interior room lamp relay harness connector and ground.

(+)		(-)	Voltage
Interior room lamp relay			
Connector	Terminal		
M44	1	Ground	Battery voltage
	3		

Is the inspection result normal?

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

4. CHECK INTERIOR ROOM LAMP RELAY

Check interior room lamp relay.

Refer to [WW-63, "Component Inspection"](#).

LIGHT & RAIN SENSOR

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace interior room lamp relay.

5.CHECK INTERIOR ROOM LAMP RELAY CIRCUIT 2

1. Disconnect light & rain sensor connector.
2. Check continuity between interior room lamp relay harness connector and light & rain sensor harness connector.

Interior room lamp relay		Light & rain sensor		Continuity
Connector	Terminal	Connector	Terminal	
M44	5	R20	1	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harnesses.

6.CHECK INTERIOR ROOM LAMP RELAY CIRCUIT 3

1. Disconnect BCM connector.
2. Check continuity between interior room lamp relay harness connector and BCM harness connector.

Interior room lamp relay		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M44	2	M87	44	Existed

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-121, "Removal and Installation"](#).

NO >> Repair or replace harnesses.

7.CHECK LIGHT & RAIN SENSOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between light & rain sensor harness connector and ground.

Light & rain sensor		—	Continuity
Connector	Terminal		
R20	3	Ground	Existed

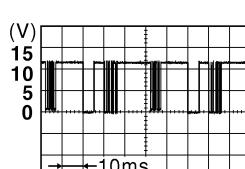
Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace harness.

8.CHECK LIGHT & RAIN SENSOR SIGNAL

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

(+)	BCM	(-)	Condition	Voltage
Connector				
M87	47	Ground	Ignition switch ON	 Approx. 8.7V

LIGHT & RAIN SENSOR

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> Replace light & rain sensor.
NO >> GO TO 9.

9.CHECK LIGHT & RAIN SENSOR SIGNAL CIRCUIT

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

BCM		Light & rain sensor		Continuity
Connector	Terminal	Connector	Terminal	
M87	47	R20	2	Existed

4. Check continuity between BCM harness connector and ground.

BCM		—	Continuity
Connector	Terminal		
M87	47	Ground	Existed

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-121, "Removal and Installation"](#).
NO >> Repair or replace harness.

Component Inspection

INFOID:0000000010785436

1.CHECK INTERIOR ROOM LAMP RELAY

1. Turn ignition switch OFF.
2. Remove interior room lamp relay.
3. Check continuity between interior room lamp relay terminals.

Interior room lamp relay		Condition	Continuity
Terminal			
3	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 interior room lamp relay.

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WASHER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

Component Inspection

INFOID:0000000010785437

1. CHECK WASHER SWITCH

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

Combination switch		Condition	Continuity
Terminal			
14	11	Front washer switch ON	Existed
9	16		
14	9	Rear washer switch ON	
11	16		

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace combination switch.

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER MOTOR CIRCUIT

Diagnosis Procedure

INFOID:0000000010785438

1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

1. Turn rear wiper switch OFF, and wait for 1 minute or more.
2. Turn ignition switch OFF.
3. Disconnect rear wiper motor connector.
4. Turn ignition switch ON.
5. With operating rear wiper switch, check voltage between rear wiper motor harness connector and ground.

(+) Rear wiper motor		(-)	Condition		Voltage
Connector	Terminal		Rear wiper switch	ON	
D178	1	Ground			9 – 16 V (5 seconds*)

*: When rear wiper motor connector is disconnected and rear wiper switch is ON for more than 5 seconds, BCM stops the power supply according to rear wiper motor protection function. To perform the check again, turn rear wiper switch OFF, wait for 1 minute or more, and then perform the check.

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. CHECK REAR WIPER MOTOR CIRCUIT

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

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
B46	123	D178	1	Existed

4. Check continuity between BCM harness connector and ground.

BCM		—	Continuity
Connector	Terminal		
B46	123	Ground	Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-121, "Removal and Installation"](#).

NO >> Repair or replace harness.

3. CHECK REAR WIPER MOTOR GROUND OPEN CIRCUIT

Check continuity between rear wiper motor harness connector and ground.

Rear wiper motor		—	Continuity
Connector	Terminal		
D178	3	Ground	Existed

Is the inspection result normal?

YES >> Replace rear wiper motor.

NO >> Repair or replace harness.

REAR WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000010785439

1. CHECK REAR WIPER STOP POSITION SIGNAL

CONSULT DATA MONITOR

1. Select "WIPER" of BCM data monitor item.
2. Operate the rear wiper.
3. Check that "RR WIPER STOP" changes to "On" and "Off" linked with the wiper operation.

Monitor item	Condition		Monitor status
RR WIPER STOP	Rear wiper motor	Stop position	Off
		Except stop position	On

Is the inspection result normal?

YES >> Rear wiper stop position signal circuit is normal.

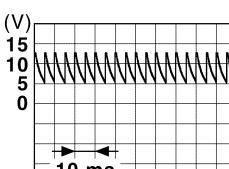
NO >> Refer to [WW-66, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010785440

1. CHECK REAR WIPER MOTOR (AUTO STOP) OUTPUT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect rear wiper motor connector.
3. Turn ignition switch ON.
4. Check voltage between rear wiper motor harness connector and ground.

(+) Rear wiper motor		(-)	Voltage
Connector	Terminal		
D178	2	Ground	 JMMIA1654GB

Is the inspection result normal?

YES >> Replace rear wiper motor.

NO >> GO TO 2.

2. CHECK REAR WIPER MOTOR (AUTO STOP) CIRCUIT

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

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
B47	15	D178	2	Existed

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

Rear wiper motor		—	Continuity
Connector	Terminal		
D178	2	Ground	Not existed

Is the inspection result normal?

REAR WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- YES >> Replace BCM. Refer to [BCS-121, "Removal and Installation"](#).
NO >> Repair or replace harness.

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HEADLAMP WASHER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

HEADLAMP WASHER SWITCH

Component Function Check

INFOID:0000000010957660

1. CHECK HEADLAMP WASHER SWITCH SIGNAL

CONSULT DATA MONITOR

1. Turn ignition switch ON.
2. Select "H/L WSR SW" of BCM (WIPER) data monitor item.
3. With operating the headlamp washer switch, check the monitor status.

Monitor item	Condition		Monitor status
H/L WSR SW	Headlamp washer switch	While pressing	On
		While not pressing	Off

Is the item status normal?

- YES >> Headlamp washer switch circuit is normal.
NO >> Refer to [WW-68, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010957661

1. CHECK HEADLAMP WASHER SWITCH SIGNAL INPUT

1. Turn ignition switch OFF.
2. Disconnect headlamp washer switch connector.
3. Turn ignition switch ON.
4. Check voltage between headlamp washer switch harness connector and ground.

(+)	(-)	Voltage
Headlamp washer switch		
Connector	Terminal	
M144	1	Ground
		9 – 16 V

Is the inspection result normal?

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

2. CHECK HEADLAMP WASHER SWITCH GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between headlamp washer switch harness connector and ground.

Headlamp washer switch	—	Continuity
Connector	Terminal	
M144	2	Ground
		Existed

Is the inspection result normal?

- YES >> Replace headlamp washer switch.
NO >> Repair or replace harnesses.

3. CHECK HEADLAMP WASHER SWITCH SIGNAL CIRCUIT

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

Headlamp washer switch	BCM		Continuity	
Connector	Terminal	Connector	Terminal	
M144	1	M87	60	Existed

4. Check continuity between headlamp washer switch harness connector and ground.

HEADLAMP WASHER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

Headlamp washer switch		—	Continuity
Connector	Terminal		
M144	1	Ground	Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-121, "Removal and Installation"](#).

NO >> Repair or replace harnesses.

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HEADLAMP WASHER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

HEADLAMP WASHER CIRCUIT

Component Function Check

INFOID:0000000010957662

1. CHECK HEADLAMP WASHER OPERATION

CONSULT ACTIVE TEST

1. Select "HEADLAMP WASHER" of IPDM E/R active test item.
2. With operating the test item, check headlamp operation.

On :Headlamp washer ON operation

Off :Stop the headlamp washer.

Is the inspection result normal?

YES >> Headlamp washer circuit is normal.

NO >> Refer to [WW-70, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000010957663

1. CHECK HEADLAMP WASHER FUSIBLE LINK

1. Turn ignition switch OFF.
2. Check that the following fusible link is not fusing.

R9M engine

Unit	Fusible link No.	Capacity
Headlamp washer	S	30 A

Except for R9M engine

Unit	Fusible link No.	Capacity
Headlamp washer	I	30 A

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the fusible link after repairing the applicable circuit.

2. CHECK HEADLAMP WASHER RELAY POWER SUPPLY

1. Remove headlamp washer relay.
2. Check voltage between headlamp washer relay harness connector and ground.

(+) Headlamp washer relay		(-)	Voltage (Approx.)
Connector	Terminal		
E32	1	Ground	Battery voltage
	3		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

3. CHECK HEADLAMP WASHER RELAY

Check headlamp washer relay. Refer to [WW-72, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace headlamp washer relay.

4. CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL

CONSULT ACTIVE TEST

1. Install headlamp washer relay.
2. Turn ignition switch ON.

HEADLAMP WASHER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

3. Select "HEADLAMP WASHER" of IPDM E/R active test item.
4. With operating the test item, check voltage between IPDM E/R harness connector and ground.

(+)		(-)	Condition	Voltage
Connector	Terminal			
E10	7	Ground	HEAD LAMP WASHER	On 0 – 1 V
				Off 9 – 16 V

Is the inspection result normal?

YES >> GO TO 7.

NO-1 >> Fixed at 0 – 1 V and remains unchanged: GO TO 5.

NO-2 >> Fixed at 9 – 16 V and remains unchanged: Replace IPDM E/R. Refer to [PCS-60, "Removal and Installation".](#)

5. CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Remove headlamp washer relay.
3. Disconnect IPDM E/R harness connector.
4. Check continuity between IPDM E/R harness connector and headlamp washer relay harness connector.

IPDM E/R		Headlamp washer relay		Continuity
Connector	Terminal	Connector	Terminal	
E10	7	E32	2	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

6. CHECK HEADLAMP WASHER RELAY CONTROL SIGNAL SHORT CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	7		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-60, "Removal and Installation".](#)

NO >> Repair or replace harness.

7. CHECK HEADLAMP WASHER PUMP OPEN CIRCUIT

1. Turn ignition switch OFF.
2. Remove headlamp washer relay.
3. Disconnect headlamp washer pump connector.
4. Check continuity between headlamp washer relay harness connector and headlamp washer pump harness connector.

Headlamp washer relay		Headlamp washer pump		Continuity
Connector	Terminal	Connector	Terminal	
E32	5	E53	1	Existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace harness.

8. CHECK HEADLAMP WASHER PUMP (GND) OPEN CIRCUIT

Check continuity between headlamp washer pump harness connector and ground.

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HEADLAMP WASHER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Headlamp washer pump		Ground	Continuity
Connector	Terminal		
E53	2		Existed

Is the inspection result normal?

- YES >> Replace headlamp washer pump.
NO >> Repair or replace harness.

Component Inspection

INFOID:0000000010957664

1. CHECK HEADLAMP WASHER RELAY

1. Turn ignition switch OFF.
2. Remove headlamp washer relay.
3. Check continuity of headlamp washer relay.

Headlamp washer relay		Condition	Continuity
Terminal			
3	5	12 V direct current supply between terminals 1 and 2.	Existed
		Not Apply	Not existed

Is the inspection result normal?

- YES >> Headlamp washer relay is normal.
NO >> Replace headlamp washer relay.

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

WITH LIGHT & RAIN SENSOR

WITH LIGHT & RAIN SENSOR : Symptom Table

INFOID:0000000010957665

NOTE:

Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symptom		Probable malfunction location	Inspection item
Front wiper does not operate	HI only	<ul style="list-style-type: none">Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-119, "Symptom Table" .
		<ul style="list-style-type: none">IPDM E/RHarness between IPDM E/R and front wiper motorFront wiper motor	Front wiper motor (HI) circuit Refer to WW-56, "Component Function Check" .
		Front wiper request signal <ul style="list-style-type: none">BCMIPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	LO only	<ul style="list-style-type: none">Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-119, "Symptom Table" .
		<ul style="list-style-type: none">IPDM E/RHarness between IPDM E/R and front wiper motorFront wiper motor	Front wiper motor (LO) circuit Refer to WW-54, "Component Function Check" .
		Front wiper request signal <ul style="list-style-type: none">BCMIPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	AUTO only	<ul style="list-style-type: none">Combination switchHarness between combination switch and BCMBCM	Combination switch Refer to BCS-119, "Symptom Table" .
		<ul style="list-style-type: none">Light & rain sensorHarness between light & rain sensor and BCMBCM	Light & rain sensor Refer to WW-61, "Component Function Check" .
HI, LO and AUTO		SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to WW-80, "Diagnosis Procedure" .	

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"> • Combination switch • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
		Front wiper request signal <ul style="list-style-type: none"> • BCM • IPDM E/R 	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	LO only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
		Front wiper request signal <ul style="list-style-type: none"> • BCM • IPDM E/R 	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	AUTO only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
		<ul style="list-style-type: none"> • Light & rain sensor • Harness between light & rain sensor and BCM • BCM 	Light & rain sensor Refer to WW-61, "Component Function Check" .
Front wiper does not operate normally	Sensitivity adjustment cannot be performed.	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
		BCM	—
	Auto wiping operation does not operate	Check the wiper setting Refer to WW-29, "WIPER : CONSULT Function - WIPER" .	
	Wiper is not linked to the washer operation.	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
		BCM	—
	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"> • IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor 	Front wiper stop position signal circuit Refer to WW-58, "Component Function Check" .
Rear wiper does not operate	ON only	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	INT only	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	ON and INT	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
		<ul style="list-style-type: none"> • BCM • Harness between rear wiper motor and BCM • Harness between rear wiper motor and ground • Rear wiper motor 	Rear wiper motor circuit Refer to WW-65, "Diagnosis Procedure" .
Rear wiper does not stop	ON only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	INT only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Rear wiper does not operate normally	Wiper is not linked to the washer operation	<ul style="list-style-type: none"> Combination switch Harness between rear wiper motor and BCM BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	BCM	—	—
	Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)]	<ul style="list-style-type: none"> BCM Harness between rear wiper motor and BCM Rear wiper motor 	Rear wiper stop position signal circuit Refer to WW-66, "Component Function Check" .
Headlamp washer does not operate.	Headlamp washer does not operate when headlamps are turned ON.	Check the wiper setting Refer to WW-29, "WIPER : CONSULT Function - WIPER" .	D
		<ul style="list-style-type: none"> Harness between headlamp washer switch and BCM Harness between headlamp washer switch and ground Headlamp washer switch BCM 	Headlamp washer switch* ¹ Refer to WW-68, "Component Function Check" .
		<ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM 	Combination switch* ² Refer to BCS-119, "Symptom Table" .
		<ul style="list-style-type: none"> Fusible link Harness between fusible link and headlamp washer relay Headlamp washer relay Harness between headlamp washer relay and IPDM E/R IPDM E/R Harness between headlamp washer relay and headlamp washer pump Harness between headlamp washer pump and ground Headlamp washer pump 	Headlamp washer circuit Refer to WW-70, "Component Function Check" .
		BCM	—

*¹: For models with headlamp washer switch.

*²: For models without headlamp washer switch.

WITHOUT LIGHT & RAIN SENSOR

WITHOUT LIGHT & RAIN SENSOR : Symptom Table

INFOID:0000000010957666

NOTE:

Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom	Probable malfunction location	Inspection item	
Front wiper does not operate	HI only	• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-119, "Symptom Table" .
		• IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor	Front wiper motor (HI) circuit Refer to WW-56, "Component Function Check" .
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R Data monitor "FR WIP REQ"
	LO and INT	• IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor	Front wiper motor (LO) circuit Refer to WW-54, "Component Function Check" .
		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-119, "Symptom Table" .
	LO only	Front wiper request signal • BCM • IPDM E/R	IPDM E/R Data monitor "FR WIP REQ"
		• Combination switch • Harness between combination switch and BCM • BCM	Combination switch Refer to BCS-119, "Symptom Table" .
	INT only	Front wiper request signal • BCM • IPDM E/R	IPDM E/R Data monitor "FR WIP REQ"
		SYMPTOM DIAGNOSIS Refer to WW-80, "Diagnosis Procedure" .	
Front wiper does not stop	HI only	• Combination switch • BCM	Combination switch Refer to BCS-119, "Symptom Table" .
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R Data monitor "FR WIP REQ"
		IPDM E/R	—
	LO only	• Combination switch • BCM	Combination switch Refer to BCS-119, "Symptom Table" .
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R Data monitor "FR WIP REQ"
		IPDM E/R	—
	INT only	• Combination switch • BCM	Combination switch Refer to BCS-119, "Symptom Table" .
		Front wiper request signal • BCM • IPDM E/R	IPDM E/R Data monitor "FR WIP REQ"

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Front wiper does not operate normally	Intermittent adjustment cannot be performed	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	BCM		—
	Intermittent control linked with vehicle speed cannot be performed	<p>Check the wiper setting. Refer to WW-29, "WIPER : CONSULT Function - WIPER".</p>	
	Wiper is not linked to the washer operation	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
Rear wiper does not operate	Does not return to stop position [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)]	<ul style="list-style-type: none"> • IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor 	Front wiper stop position signal circuit Refer to WW-58, "Component Function Check" .
	ON only	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	INT only	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	ON and INT	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM • Rear wiper motor • Harness between rear wiper motor and BCM • Harness between rear wiper motor and ground 	Combination switch Refer to BCS-119, "Symptom Table" . Rear wiper motor circuit Refer to WW-65, "Diagnosis Procedure" .
Rear wiper does not stop	ON only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	INT only	<ul style="list-style-type: none"> • Combination switch • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
Rear wiper does not operate normally	Wiper is not linked to the washer operation	<ul style="list-style-type: none"> • Combination switch • Harness between rear wiper motor and BCM • BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
	BCM		—
	Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)]	<ul style="list-style-type: none"> • BCM • Harness between rear wiper motor and BCM • Rear wiper motor 	Rear wiper stop position signal circuit Refer to WW-66, "Component Function Check" .
	Rear wiper does not operate even when shift position is "R".	<p>Check the wiper setting. Refer to WW-29, "WIPER : CONSULT Function - WIPER".</p>	

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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom	Probable malfunction location	Inspection item
Headlamp washer does not operate.	Headlamp washer does not operate when headlamps are turned ON.	<ul style="list-style-type: none"> • Harness between headlamp washer switch and BCM • Harness between headlamp washer switch and ground • Headlamp washer switch • BCM
		<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM
		<ul style="list-style-type: none"> • Fusible link • Harness between fusible link and headlamp washer relay • Headlamp washer relay • Harness between headlamp washer relay and IPDM E/R • IPDM E/R • Harness between headlamp washer relay and headlamp washer pump • Harness between headlamp washer pump and ground • Headlamp washer pump
		BCM
		—

*¹: For models with headlamp washer switch.

*²: For models without headlamp washer switch.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:0000000010785443

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 reactivate the front wiper. The wiper will operate normally.

REAR WIPER MOTOR PROTECTION FUNCTION

- BCM may stop rear wiper to protect the rear wiper motor when the rear wiper is stopped for 5 seconds or more due to a snowfall.
- Rear wiper operates normally 1 minute after the obstacles are removed with rear wiper OFF.

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FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description

INFOID:0000000010785444

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:0000000010785445

1. CHECK WIPER RELAY OPERATION

④ CONSULT ACTIVE TEST

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

LOW : Front wiper LO operation

HIGH : Front wiper HI operation

OFF : Stop the front wiper.

Is front wiper operation normally?

YES >> GO TO 4.

NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR FUSE

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

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	90	30 A

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace the fuse after repairing the applicable circuit.

3. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

Check front wiper motor ground circuit. Refer to [WW-60, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4. CHECK FRONT WIPER REQUEST SIGNAL INPUT

④ CONSULT DATA MONITOR

1. Select "FR WIP REQ" of IPDM E/R data monitor item.
2. Switch the front wiper switch to HI and LO.
3. 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	HIGH
		LO	LOW
		INT	
		OFF	STOP

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-60, "Removal and Installation"](#).

NO >> GO TO 5.

5. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-119, "Symptom Table"](#).

Is combination switch normal?

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

- YES >> Replace BCM. Refer to [BCS-121, "Removal and Installation"](#).
NO >> Repair or replace the applicable parts.

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FRONT WIPER

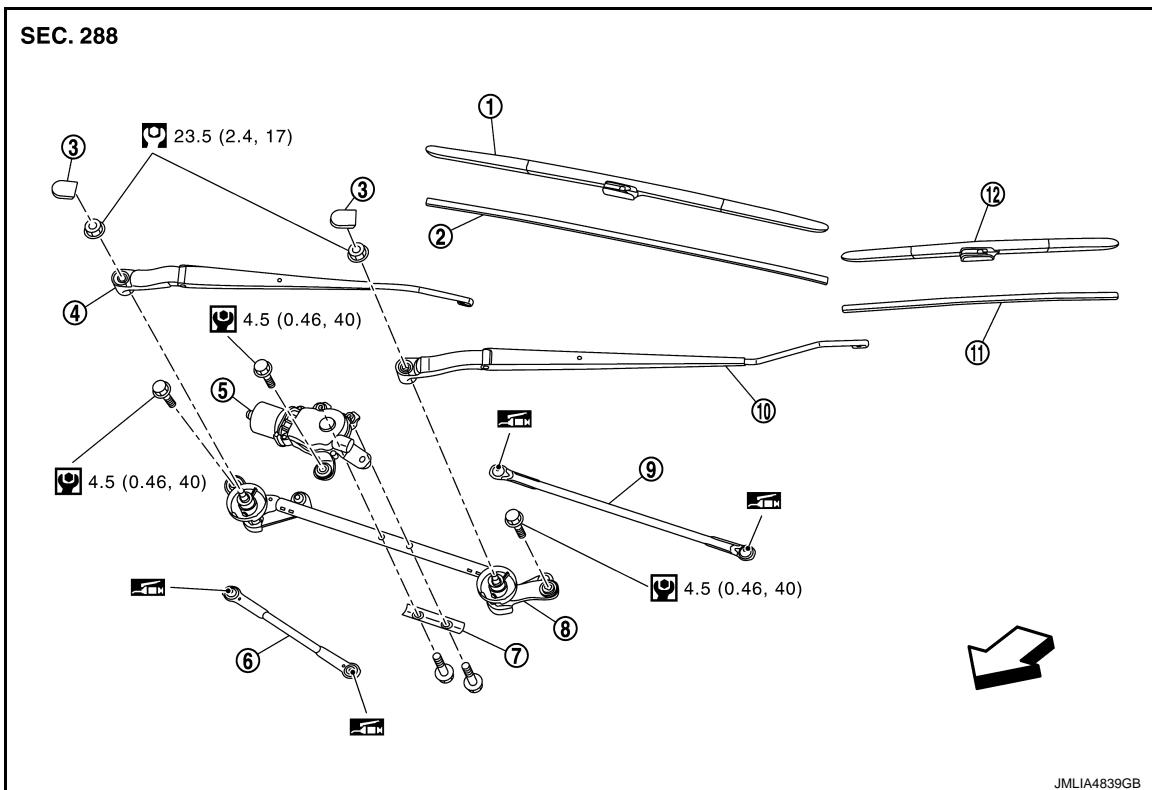
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

FRONT WIPER

Exploded View

INFOID:0000000010785446



① Front wiper blade RH

② Front wiper refill RH

③ Front wiper arm cap

④ Front wiper arm RH

⑤ Front wiper motor *

⑥ Front wiper linkage 1 *

⑦ Front wiper motor bracket *

⑧ Front wiper frame *

⑨ Front wiper linkage 2 *

⑩ Front wiper arm LH

⑪ Front wiper refill LH

⑫ Front wiper blade LH

← : Vehicle front

kg·m : N·m (kg·m, in-lb)

kg·m : N·m (kg·m, ft-lb)

■ : Nissan MP special grease No. 2

* : Part of wiper drive assembly.

WIPER ARM

WIPER ARM : Removal and Installation

INFOID:0000000010785447

CAUTION:

Clean the windshield glass and front wiper refill so that the windshield glass may not be damaged by dust, etc.

REMOVAL

1. Full open hood assembly.

CAUTION:

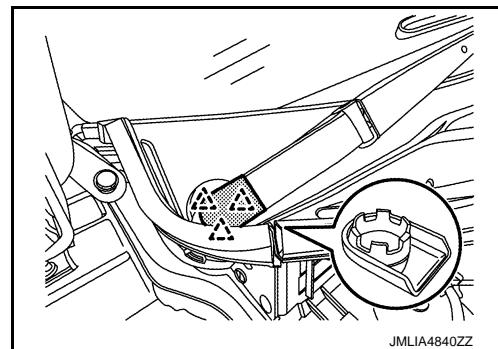
Before opening hood assembly, check that front wipers are in auto stop position.

FRONT WIPER

< REMOVAL AND INSTALLATION >

2. Remove front wiper arm cap.

△ : pawl



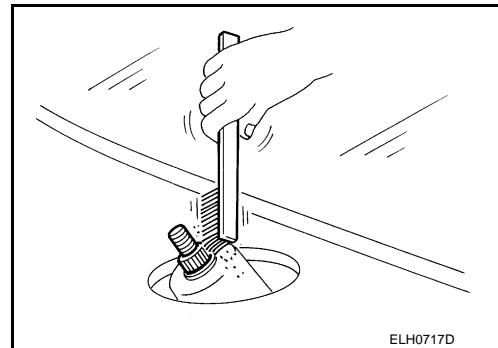
3. Remove front wiper arm mounting nut, and then remove front wiper arm.

INSTALLATION

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

CAUTION:

- Clean front wiper arm installation location as shown in the figure, and then fully insert front wiper arm to prevent nut from being loosened by shakiness.



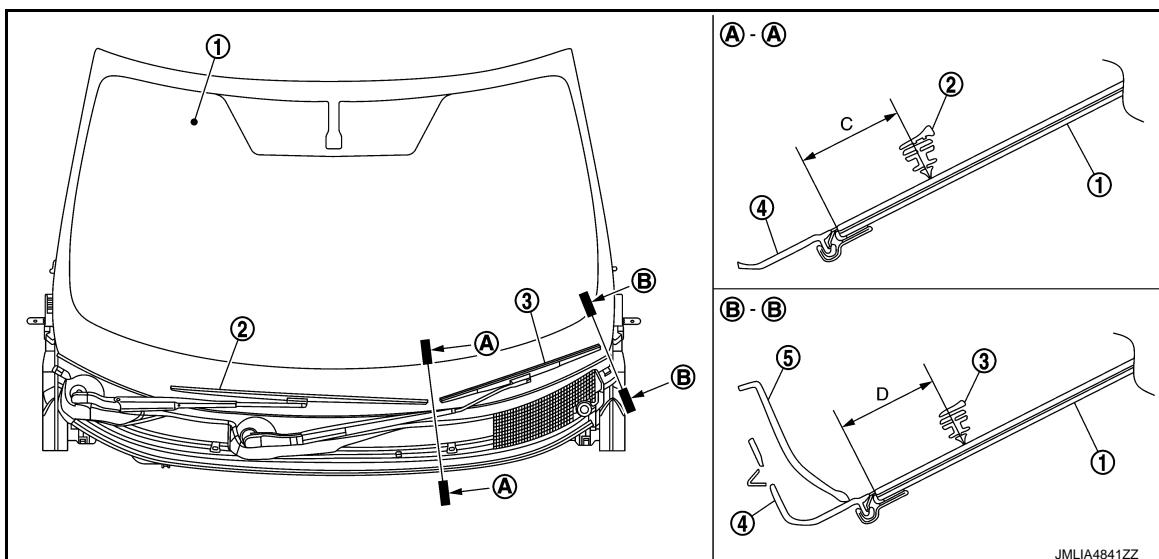
- When installing front wiper arm, install so that it is within the standard. For the standard, refer to [WW-83, "WIPER ARM : Adjustment".](#)
- After installation, operate front wiper, and then check that front wiper blades stop at the specified position. Refer to [WW-83, "WIPER ARM : Adjustment".](#)

WIPER ARM : Adjustment

INFOID:000000010785448

WIPER BLADE POSITION ADJUSTMENT

Clearance between the end of cowl top cover / front fender cover and the top of front wiper blade center.



① Windshield glass

④ Cowl top cover

② Front wiper blade RH

⑤ Front fender cover LH

③ Front wiper blade LH

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FRONT WIPER

< REMOVAL AND INSTALLATION >

Standard clearance

C : 34.88 ± 7.5 mm (1.37 ± 0.30 in)

D : 38.20 ± 7.5 mm (1.50 ± 0.30 in)

WIPER BLADE

WIPER BLADE : Removal and Installation

INFOID:0000000010785449

CAUTION:

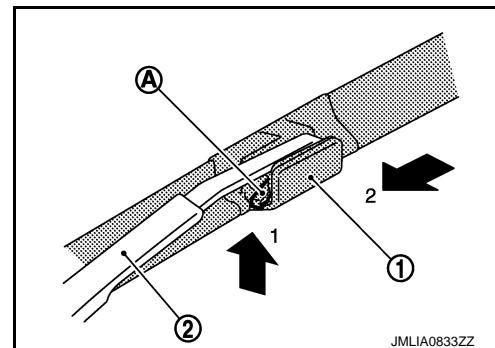
Clean the windshield glass and front wiper refill so that the windshield glass may not be damaged by dust, etc.

REMOVAL

1. Move front wiper arm by service position operation to lock back possibility position.
 - With rain sensor: Refer to [WW-13, "FRONT WIPER AND WASHER SYSTEM \(WITH LIGHT & RAIN SENSOR\) : System Description"](#).
 - Without rain sensor: Refer to [WW-17, "FRONT WIPER AND WASHER SYSTEM \(WITHOUT LIGHT & RAIN SENSOR\) : System Description"](#).
2. Lift up front wiper arm, and then lock back front wiper arm.
3. Slide the wiper blade ① while pushing the lever Ⓐ according to the numerical order 1→2 as shown in the figure from front wiper arm ②.

CAUTION:

After the wiper blade is removed, wrap the wiper arm tip with a shop cloth and fold it down so that the wiper arm does not fall against and damage the windshield glass.



INSTALLATION

Install in the reverse order of removal.

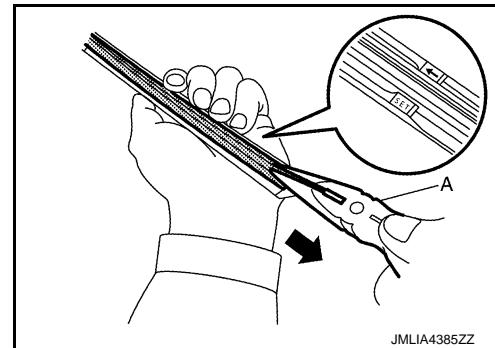
WIPER REFILL

WIPER REFILL : Removal and Installation

INFOID:0000000010785450

REMOVAL

1. Remove front wiper blade. Refer to [WW-84, "WIPER BLADE : Removal and Installation"](#).
2. Pull out front wiper refill using a long-nose pliers (A), and then remove front wiper refill.

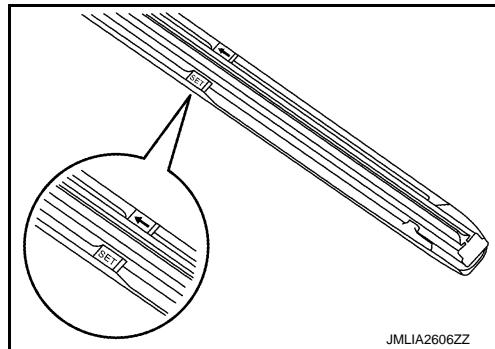


INSTALLATION

FRONT WIPER

< REMOVAL AND INSTALLATION >

1. Check the front wiper refill insertion direction by arrow mark on front wiper blade.



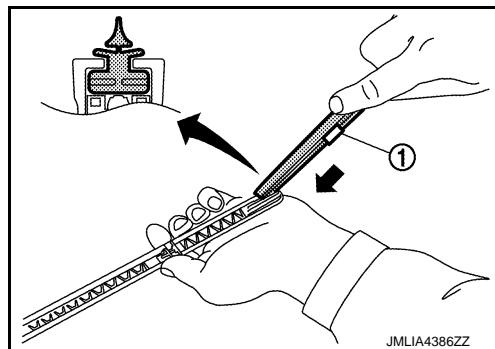
JMLIA2606ZZ

2. Pass through pawl of front wiper blade in the groove of front wiper refill.

NOTE:

Remove holder ①* at last procedure.

*: Attached to service parts.



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3. Engage front wiper refill stopper hole, and front wiper blade pawl with imprinted "SET" mark ("←" mark).

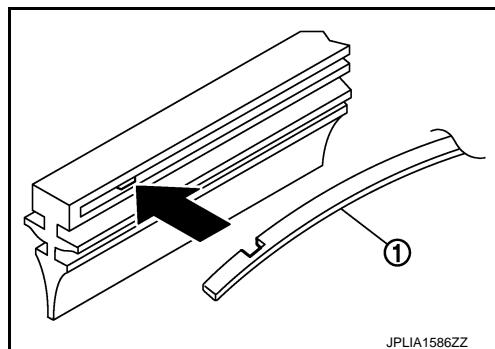
4. Check the following items after installing.

- Front wiper refill thoroughly fits in the pawl on front wiper blade.
- Front wiper refill is not deformed (waving / tucking).

NOTE:

When the vertebra is detached

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



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WIPER DRIVE ASSEMBLY

WIPER DRIVE ASSEMBLY : Removal and Installation

INFOID:0000000010785451

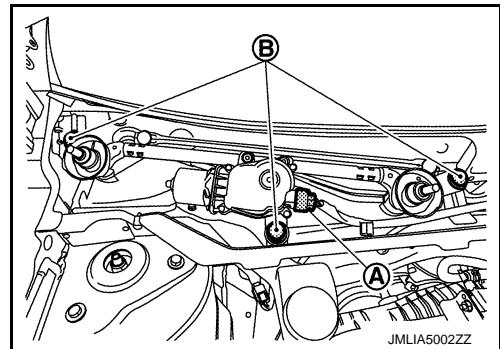
REMOVAL

1. Remove cowl top cover. Refer to [EXT-25, "Removal and Installation"](#).

FRONT WIPER

< REMOVAL AND INSTALLATION >

2. Disconnect front wiper motor harness connector **(A)**.
3. Remove front wiper drive assembly mounting bolts **(B)**, and then remove front wiper drive assembly.



INSTALLATION

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

CAUTION:

When installing, temporarily tighten all mounting bolts, and then tighten bolts to specified torque.

WIPER DRIVE ASSEMBLY : Disassembly and Assembly

INFOID:0000000010785452

DISASSEMBLY

1. Remove front wiper linkage 1 and 2 from front wiper flame.

CAUTION:

Never bend the link or damage the plastic part of the ball joint when removing front wiper linkage.

2. Remove front wiper motor bracket mounting bolts, and then remove front wiper motor from front wiper flame.

ASSEMBLY

Note the following items, and assembly in the reverse order of disassembly.

CAUTION:

- **When front wiper motor is replaced, before installing front wiper arm, operate front wipers, set front wiper motor to the auto stop position, and then install front wiper arms.**
- **Be careful for grease condition at front wiper linkage joint (retainer), apply Multi-purpose grease or an equivalent if necessary.**

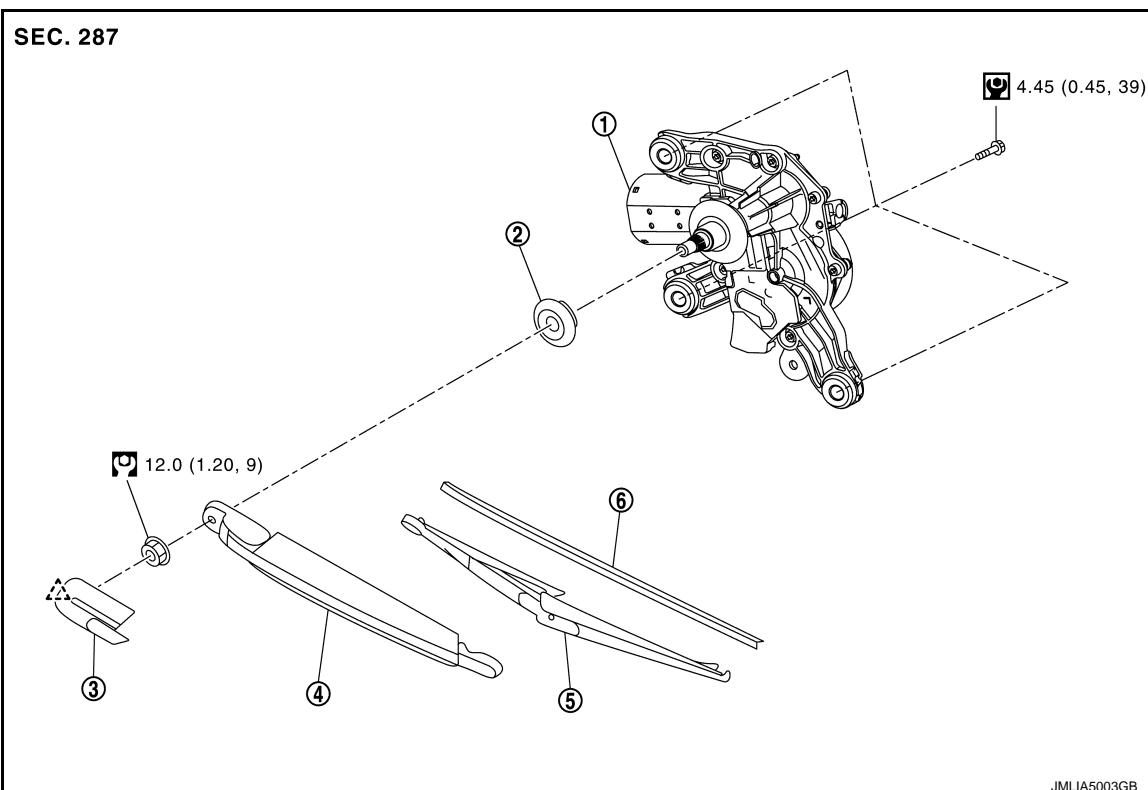
REAR WIPER

< REMOVAL AND INSTALLATION >

REAR WIPER

Exploded View

INFOID:0000000010785453



① Rear wiper motor assembly

② Pivot seal

③ Rear wiper arm cover

J

④ Rear wiper arm

⑤ Rear wiper blade

⑥ Rear wiper refill

K

△ : Pawl

Nm : N·m (kg·m, in-lb)

oz-in : N·m (kg·m, ft-lb)

WIPER ARM

WIPER ARM : Removal and Installation

INFOID:0000000010785454

M

CAUTION:

Clean the back door window glass and rear wiper refill so that the back door window glass may not be damaged by dust, etc.

N

REMOVAL

1. Operate rear wiper to the auto stop position.

O

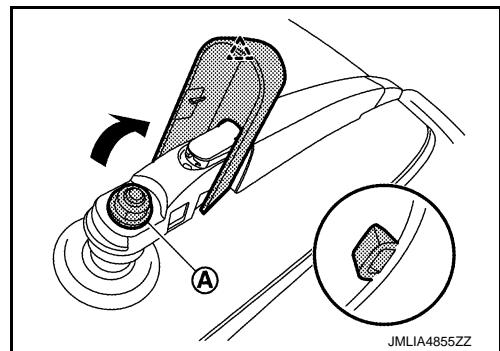
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REAR WIPER

< REMOVAL AND INSTALLATION >

2. Open rear wiper arm cover, and then remove rear wiper arm mounting nut (A).

△ : Pawl



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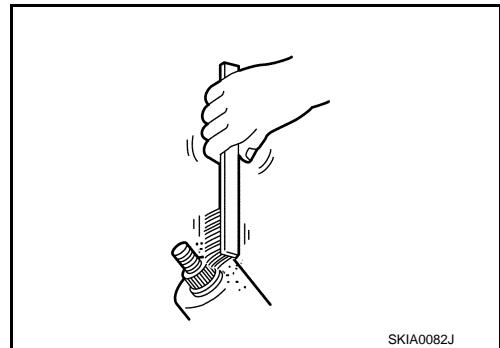
3. Pull up rear wiper arm, and then remove rear wiper arm from vehicle.

INSTALLATION

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

CAUTION:

- Clean wiper arm installation location as shown in the figure, and then fully insert wiper arm to prevent nut from being loosened by shakiness.



SKIA0082J

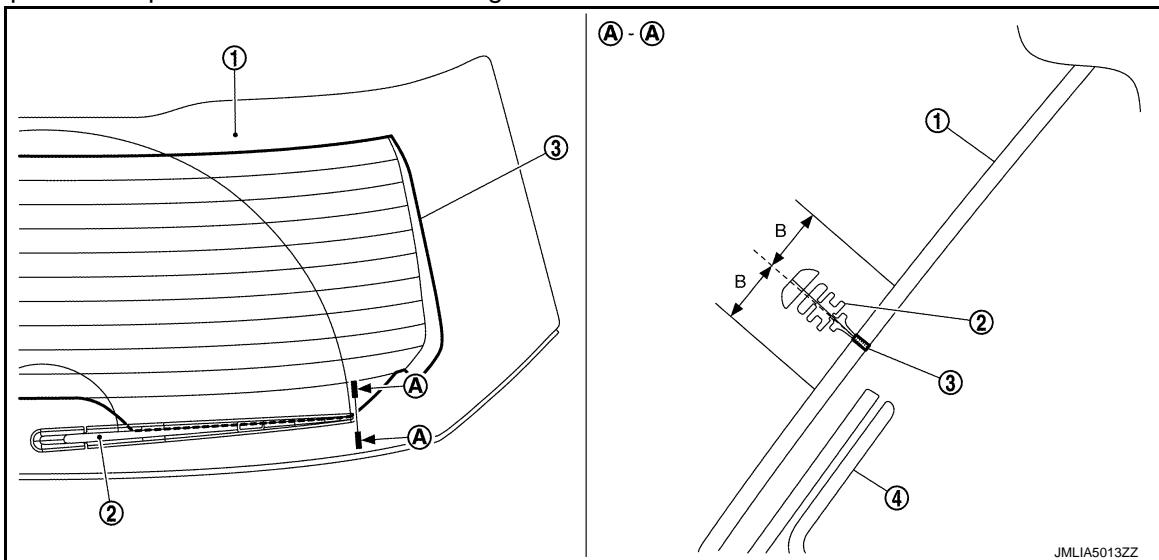
- When installing rear wiper arm, install so that it is within the standard. For the standard, refer to [WW-88, "WIPER ARM : Adjustment"](#).
- After installation, operate rear wiper, and then check that the rear wiper blade stop at the specified position. Refer to [WW-88, "WIPER ARM : Adjustment"](#).

WIPER ARM : Adjustment

INFOID:0000000010785455

REAR WIPER ARM POSITION ADJUSTMENT

Adjust tip of rear wiper blade as shown in the figure.



JMLIA5013ZZ

① Back door window glass

② Rear wiper assembly

③ Rear window defogger

④ Back door panel

REAR WIPER

< REMOVAL AND INSTALLATION >

Standard clearance from rear window defogger.

B : 7.5 mm (0.30 in)

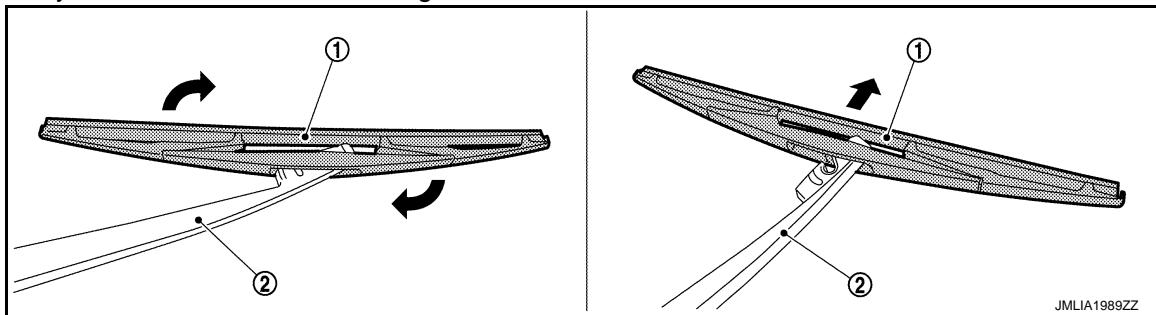
WIPER BLADE

WIPER BLADE : Removal and Installation

INFOID:0000000010785456

REMOVAL

1. Lift up and hold rear wiper arm.
2. Remove rear wiper blade ① from rear wiper arm ② while rotating rear wiper blade in the direction indicated by the arrow as shown in the figure.



CAUTION:

After rear wiper blade is removed, wrap rear wiper arm tip with a shop cloth and fold it down so that rear wiper arm does not fall against and damage back door window glass.

INSTALLATION

Install in the reverse order of removal.

WIPER MOTOR

WIPER MOTOR : Removal and Installation

INFOID:0000000010785457

REMOVAL

1. Remove rear wiper arm. Refer to [WW-87, "WIPER ARM : Removal and Installation"](#).
2. Remove back door trim. Refer to [INT-47, "Removal and Installation"](#).
3. Disconnect rear wiper motor assembly harness connector.
4. Remove rear wiper motor mounting bolts, and then remove rear wiper motor assembly from back door panel.

CAUTION:

Never drop rear wiper motor or cause it to come into contact with other parts.

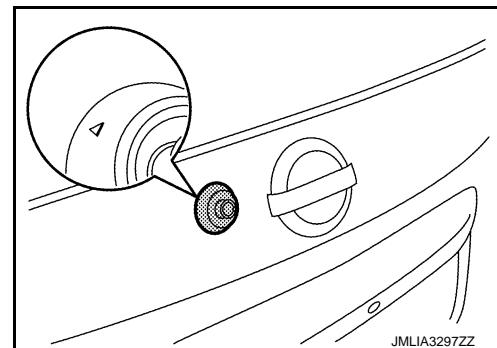
5. Remove pivot seal from back door panel.

INSTALLATION

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

CAUTION:

Always install pivot seal with “△” mark facing upward as shown in the figure.



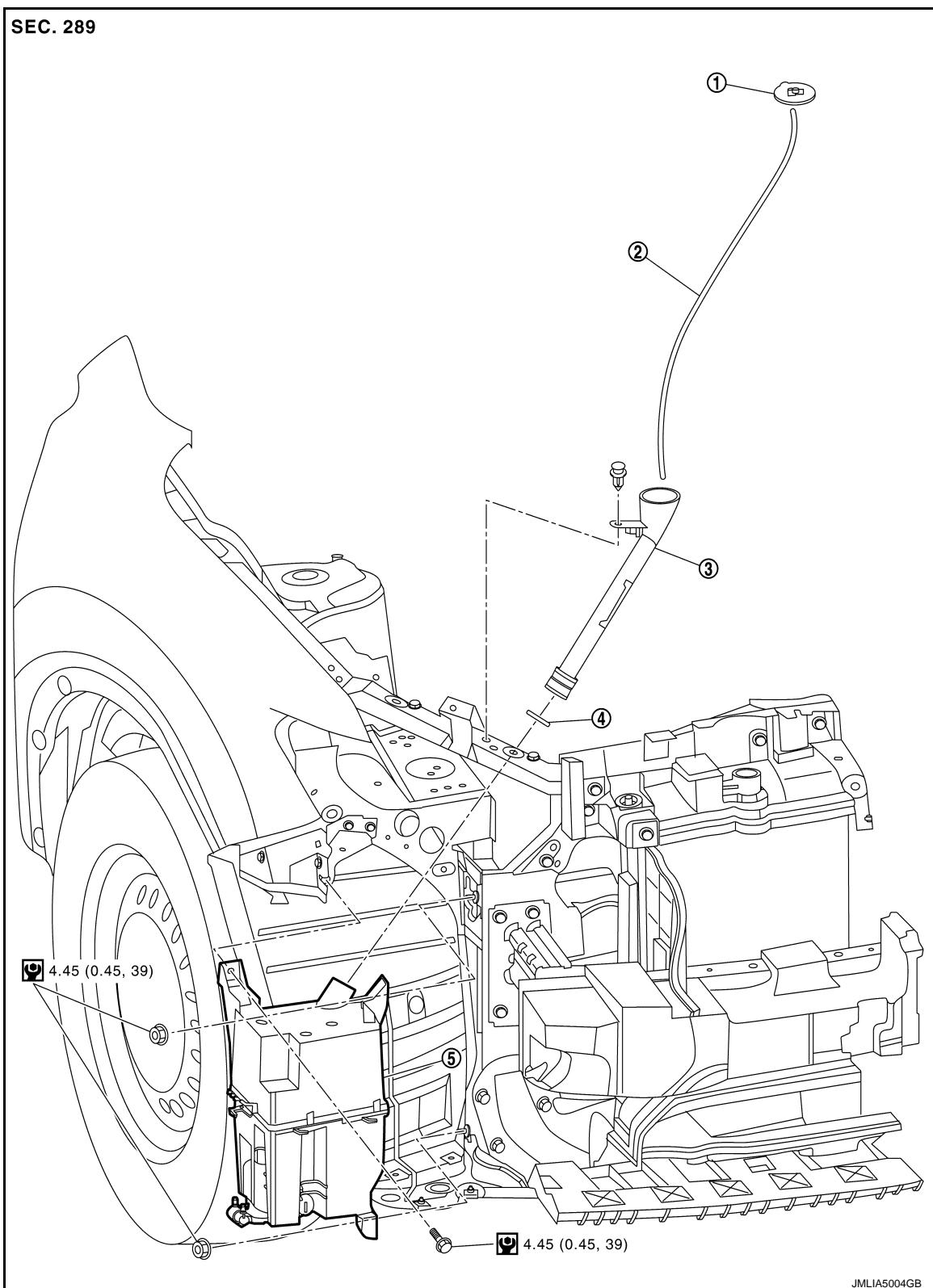
WASHER TANK

< REMOVAL AND INSTALLATION >

WASHER TANK

Exploded View

INFOID:0000000010785458



① Washer tank cap

② Washer tank tube

③ Washer tank inlet

WASHER TANK

< REMOVAL AND INSTALLATION >

④ O-ring

⑤ Washer tank

 : N·m (kg·m, in·lb)

Removal and Installation

INFOID:0000000010785459

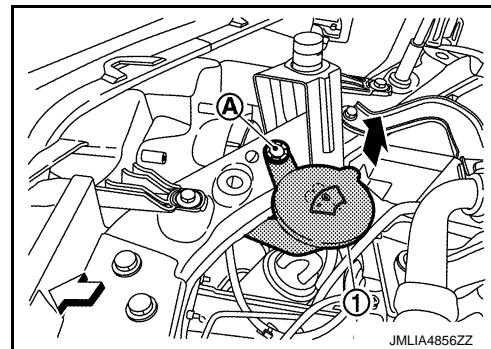
CAUTION:

When the washer tank is removed, washer fluid may come out so prepare a container to receive the fluid and never allow fluid to be sprinkled.

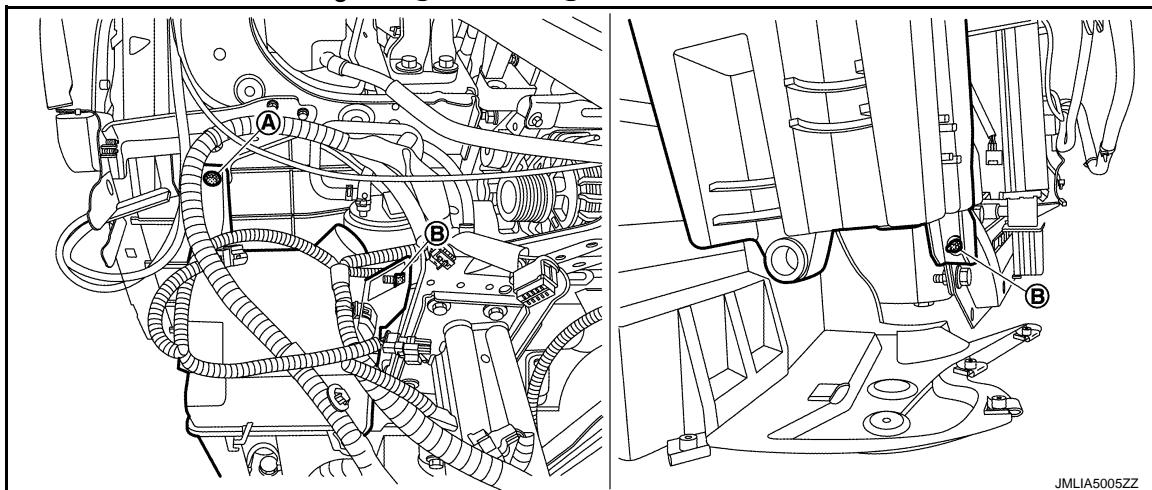
REMOVAL

1. Fully open hood assembly.
2. Remove washer tank inlet ① fixing clip Ⓐ.
3. Pull out washer tank inlet from washer tank.

 : Vehicle front



4. Remove front bumper fascia. Refer to [EXT-15, "Removal and Installation"](#).
5. Remove washer pump. Refer to [WW-92, "Removal and Installation"](#).
6. Remove washer tank mounting bolt Ⓐ and nuts Ⓑ.



7. Remove washer tank.

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 installing. Check that there is no leakage.

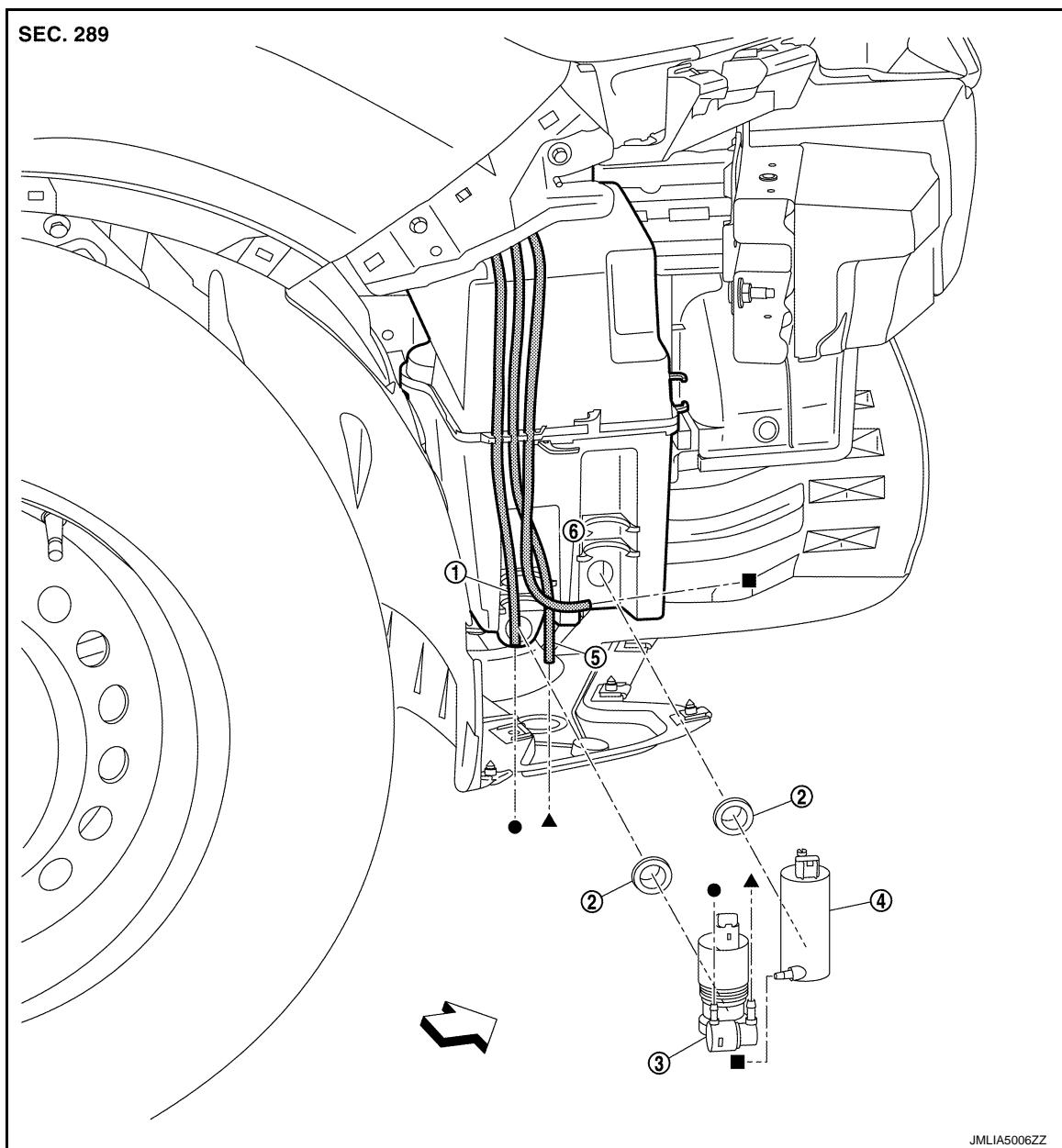
WASHER PUMP

< REMOVAL AND INSTALLATION >

WASHER PUMP

Exploded View

INFOID:0000000010785460



① Rear washer tube

② Packing

③ Washer pump (front/rear washer)

④ Washer pump (rear camera washer)
(with around view monitor system)

⑤ Front washer tube

⑥ Rear camera washer tube
(with around view monitor system)

◀ : Vehicle front

●, ▲, ■: Indicates that the part is connected at points with same symbol in actual vehicle.

Removal and Installation

INFOID:0000000010785461

REMOVAL

1. Remove front fender protector RH. Refer to [EXT-35, "FENDER PROTECTOR : Removal and Installation".](#)

WASHER PUMP

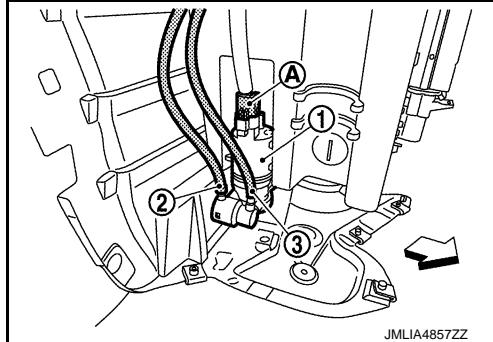
< REMOVAL AND INSTALLATION >

2. Disconnect harness connector **A** from washer pump **①** (front/rear washer), and then disconnect rear washer tube **②** and front washer tube **③**.

NOTE:

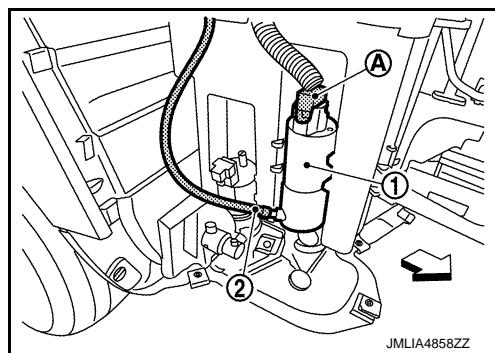
Apply a marking either on front washer tube or rear washer tube when removing them so that the positions can be identified for installation.

◀ : Vehicle front



3. Disconnect harness connector **A** from washer pump **①** (rear camera washer), and then disconnect rear camera washer tube **②** (with around view monitor system).

◀ : Vehicle front



4. Remove washer pump from washer tank.
5. Remove packing from washer tank.

INSTALLATION

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

CAUTION:

- Never twist the packing when installing the washer pump.
- When installing tube to washer pump, be sure to install to front and rear correctly.
- Check that there is no leakage after installation or replace packing with new part if it has been damaged.

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

WW

WASHER NOZZLE AND TUBE

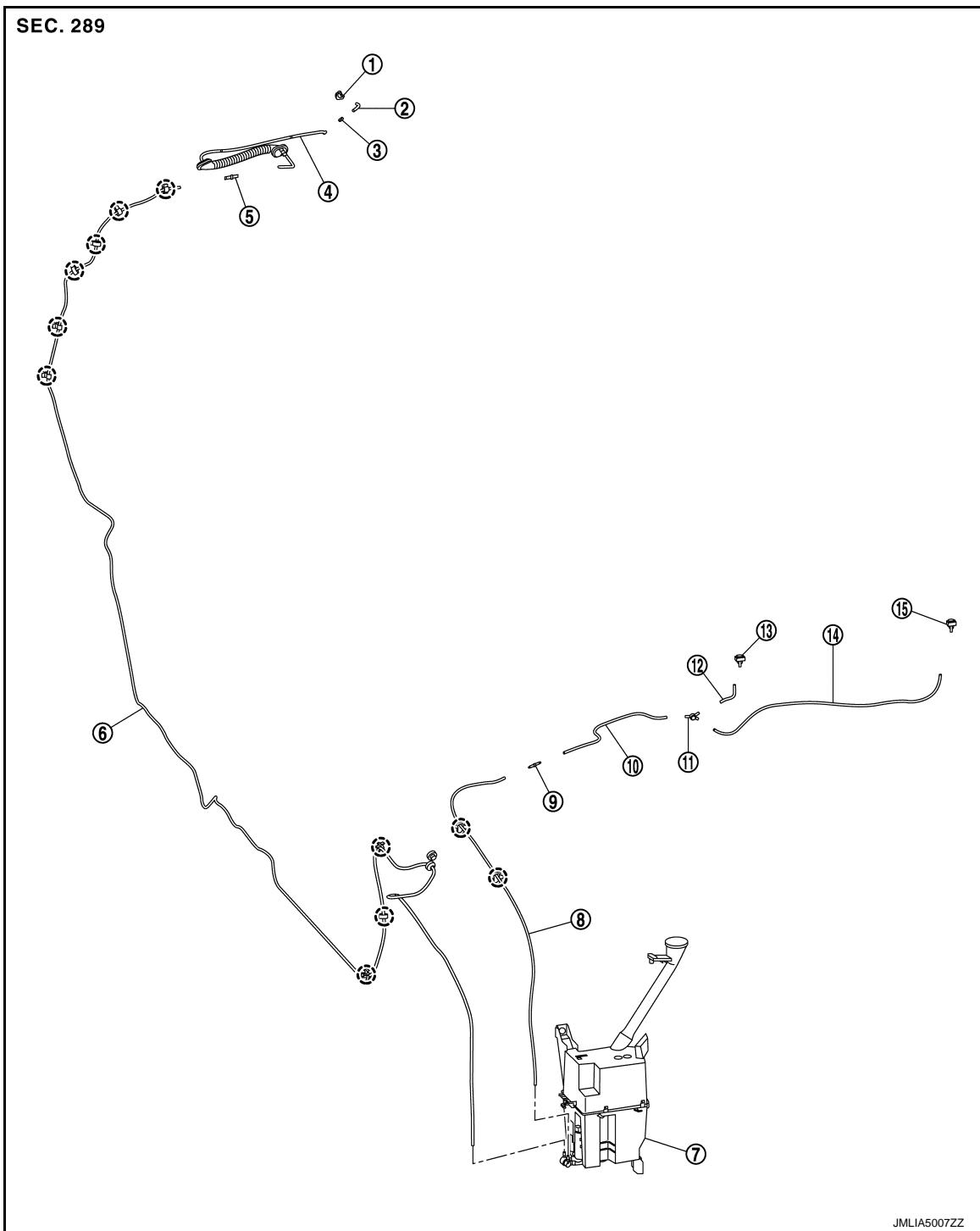
< REMOVAL AND INSTALLATION >

WASHER NOZZLE AND TUBE

Exploded View

INFOID:0000000010785462

WITHOUT AROUND VIEW MONITOR SYSTEM



① Rear washer nozzle

② Rear washer tube C

③ Joint

④ Rear washer tube B

⑤ Joint

⑥ Rear washer tube A

⑦ Washer tank

⑧ Front washer tube A

⑨ Joint

⑩ Front washer tube B

⑪ Check valve

⑫ Front washer tube C

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

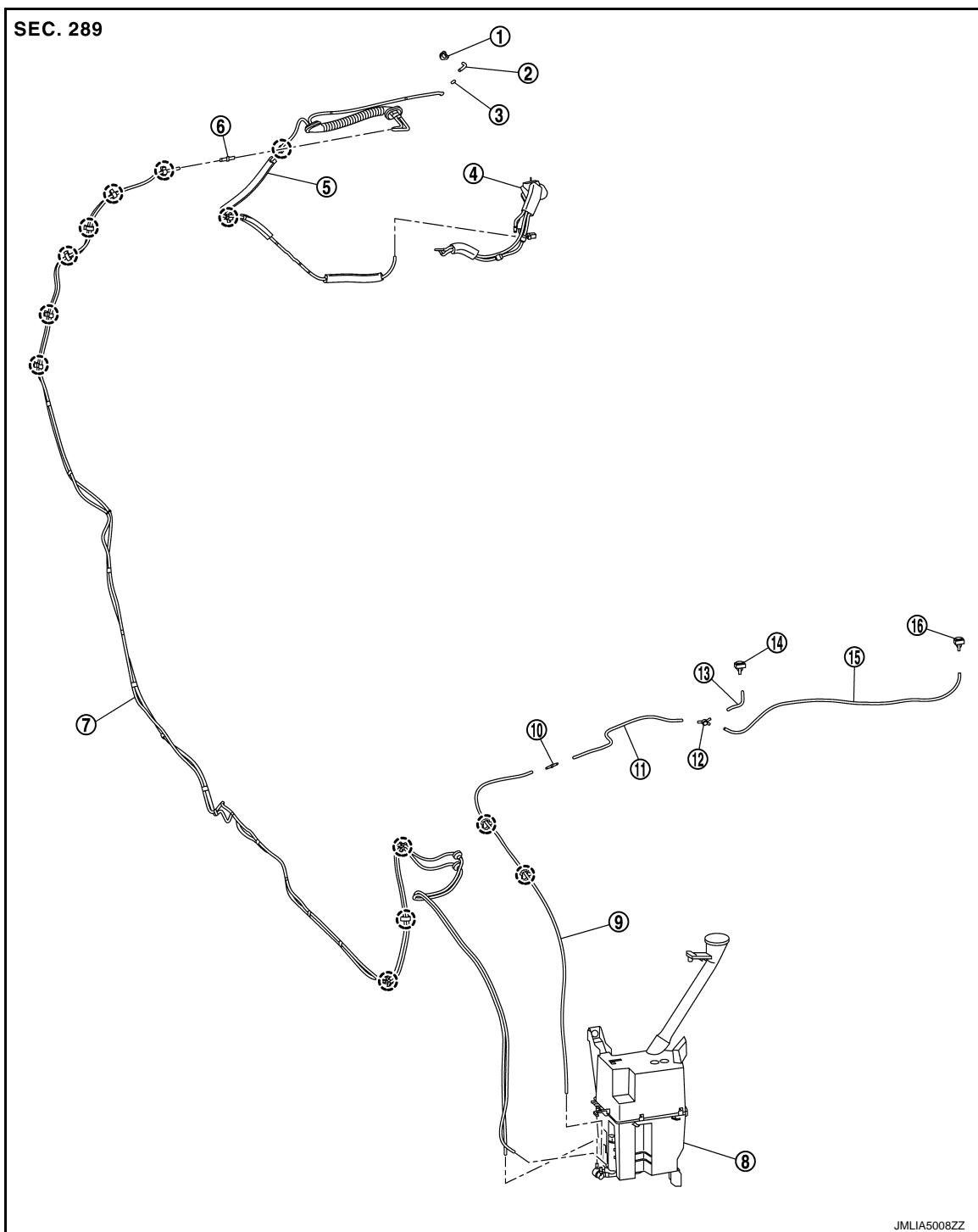
⑬ Front washer nozzle RH

⑭ Front washer tube D

⑮ Front washer nozzle LH

○ : Clip

WITH AROUND VIEW MONITOR SYSTEM



① Rear washer nozzle

② Rear washer tube C

③ Joint

④ Rear camera assembly

⑤ Rear washer tube B

⑥ Joint

⑦ Rear washer tube A

⑧ Washer tank

⑨ Front washer tube A

⑩ Joint

⑪ Front washer tube B

⑫ Check valve

⑬ Front washer tube C

⑭ Front washer nozzle RH

⑮ Front washer tube D

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

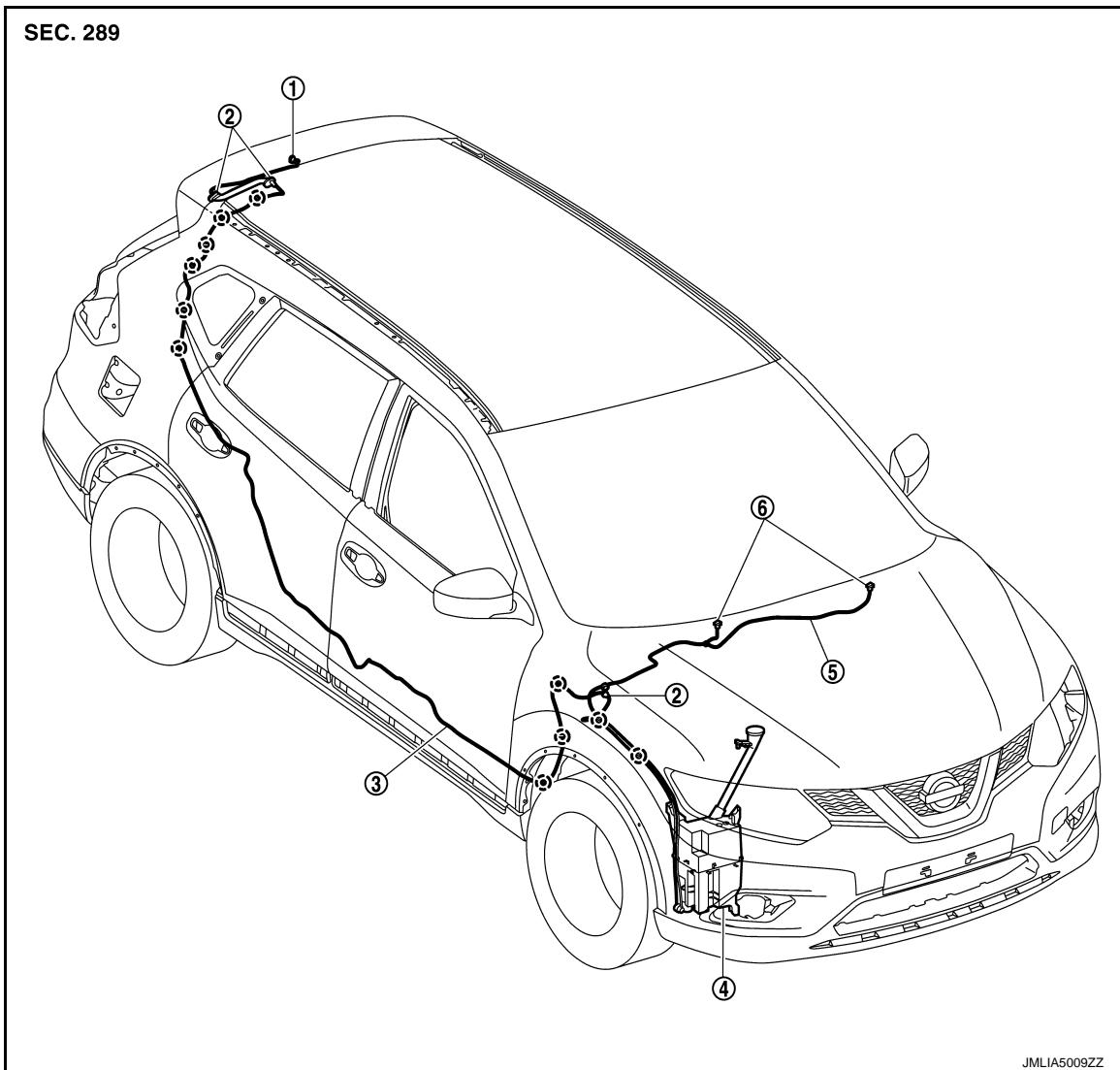
⑯ Front washer nozzle LH

○ : Clip

Hydraulic Layout

INFOID:000000010785463

WITHOUT AROUND VIEW MONITOR SYSTEM



① Rear washer nozzle

② Grommet

③ Rear washer tube

④ Washer tank

⑤ Front washer tube

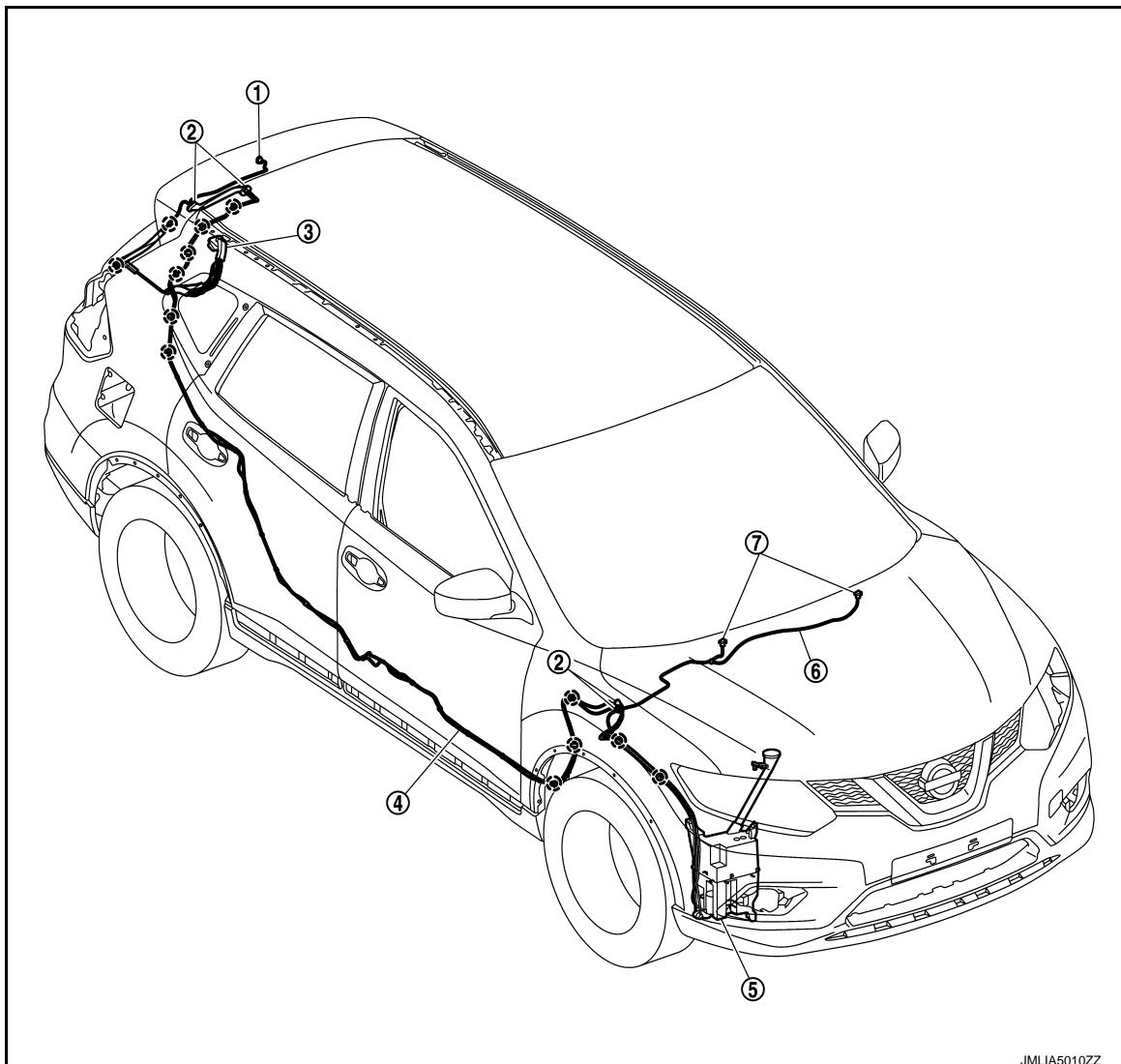
⑥ Front washer nozzle

○ : Clip

WITH AROUND VIEW MONITOR SYSTEM

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >



JMLIA5010ZZ

① Rear washer nozzle

② Grommet

③ Rear camera assembly

④ Rear washer tube

⑤ Washer tank

⑥ Front washer tube

⑦ Front washer nozzle

(): Clip

WW

FRONT WASHER NOZZLE

FRONT WASHER NOZZLE : Removal and Installation

INFOID:0000000010785464

N

REMOVAL

1. Remove cowl top cover. Refer to [EXT-25, "Removal and Installation"](#).

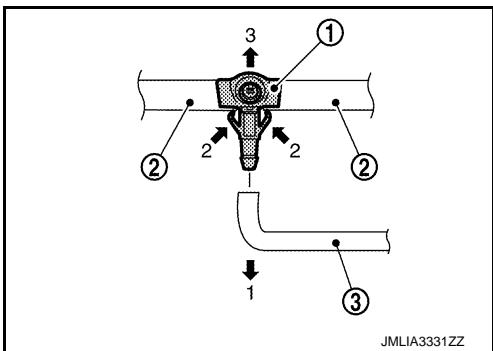
O

P

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

2. Disconnect front washer tube ③ from front washer nozzle ① direction by the arrow numerical order 1 as shown in the figure.
3. Press front washer nozzle fixing pawls toward the direction shown by the arrows 2→3 and pull up remove from hood assembly ②.



INSTALLATION

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

CAUTION:

- The spray positions differ, check that left and right nozzles are installed correctly.
- Adjust the washer nozzle spray position. Refer to [WW-98, "FRONT WASHER NOZZLE : Inspection and Adjustment".](#)

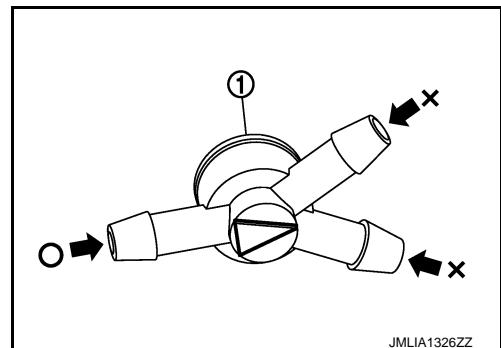
FRONT WASHER NOZZLE : Inspection and Adjustment

INFOID:0000000010785465

INSPECTION

Front Check Valve Inspection

Check that air can pass through the hose by blowing forward [toward the nozzle ①], and check that air cannot pass through by sucking.



ADJUSTMENT

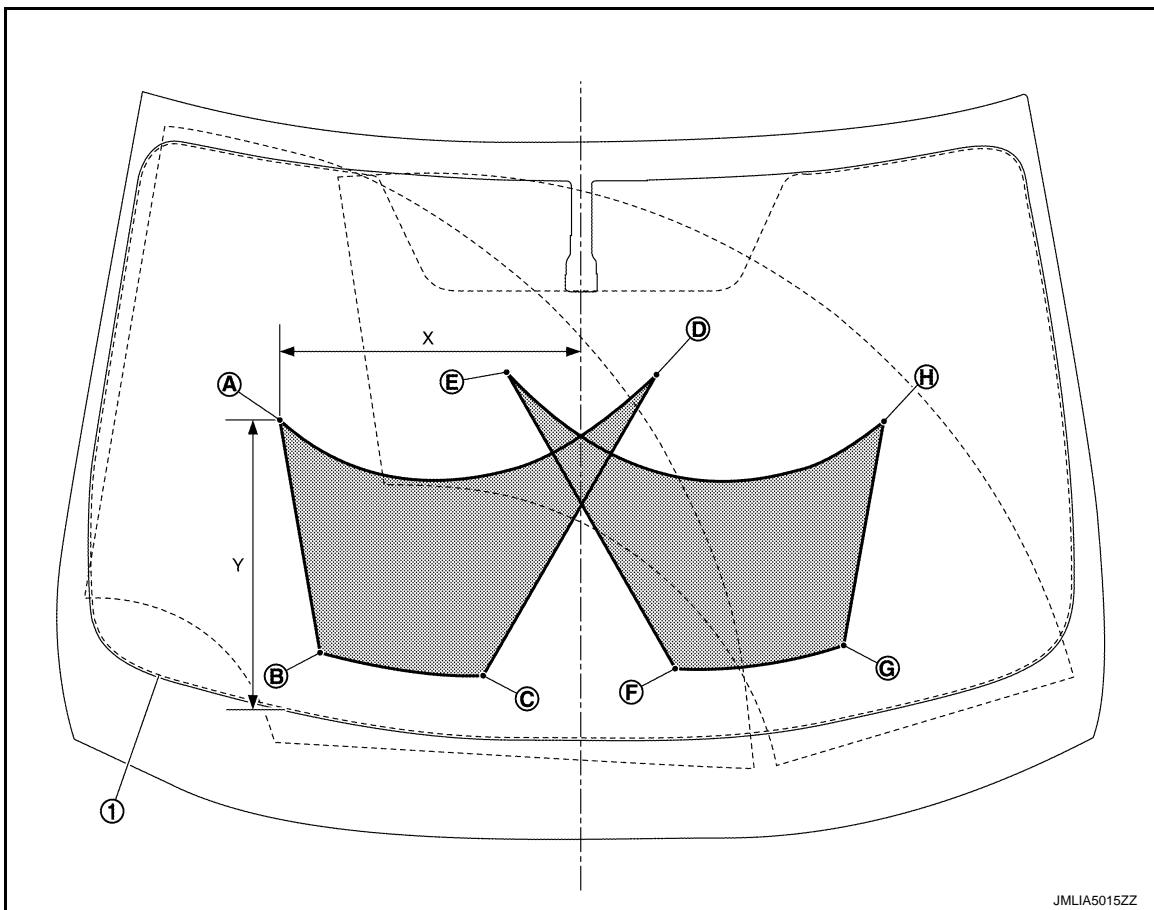
Front Washer Nozzle Spray Position Adjustment

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

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

RHD models



① Black printed frame line

■■■■ : Spray area

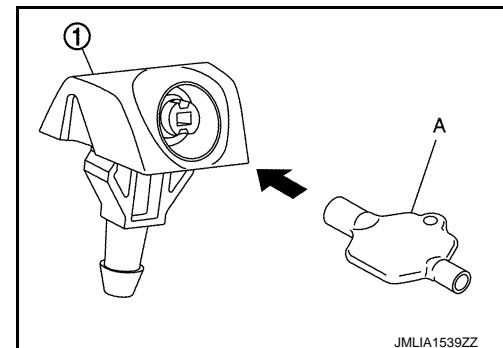
Unit: mm (in)

	Driver side				Passenger side			
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
X	409 (16.10)	356 (14.02)	127 (5.00)	103 (4.06)	103 (4.06)	133 (5.24)	354 (13.94)	409 (16.10)
Y	398 (15.67)	100 (3.94)	93 (3.66)	496 (19.53)	497 (19.57)	80 (3.15)	90 (3.54)	380 (14.96)

- Use washer nozzle adjuster (A) for front washer nozzle ① adjustment.

CAUTION:

Never use needle or small pin.



REAR WASHER NOZZLE

REAR WASHER NOZZLE : Removal and Installation

INFOID:0000000010785466

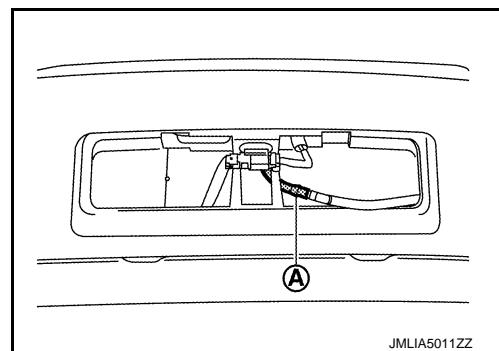
REMOVAL

- Remove high-mounted stop lamp. Refer to [EXL-207, "Removal and Installation"](#) (for LED headlamp) or [EXL-392, "Removal and Installation"](#) (for Halogen headlamp).

WASHER NOZZLE AND TUBE

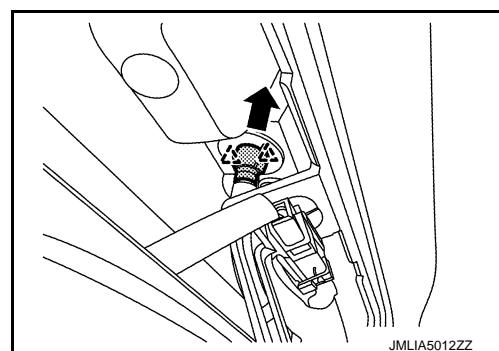
< REMOVAL AND INSTALLATION >

2. Disconnect portion **A** of rear washer tube C from joint.



3. While holding rear washer nozzle fixing pawls, push up in the direction of the arrow in the figure, and then remove rear washer nozzle.

 : Pawl



4. Remove rear washer nozzle from rear washer tube C.

INSTALLATION

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

CAUTION:

Adjust rear washer nozzle spray position. Refer to [WW-100, "REAR WASHER NOZZLE : Inspection and Adjustment"](#).

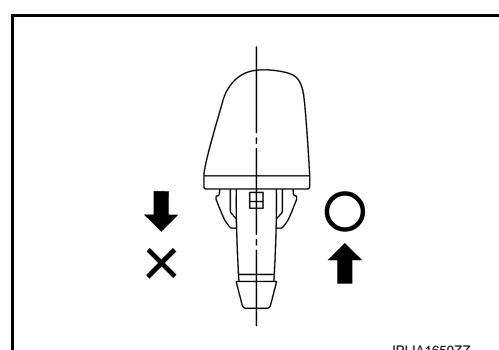
REAR WASHER NOZZLE : Inspection and Adjustment

INFOID:0000000010785467

INSPECTION

Rear Check Valve Inspection

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



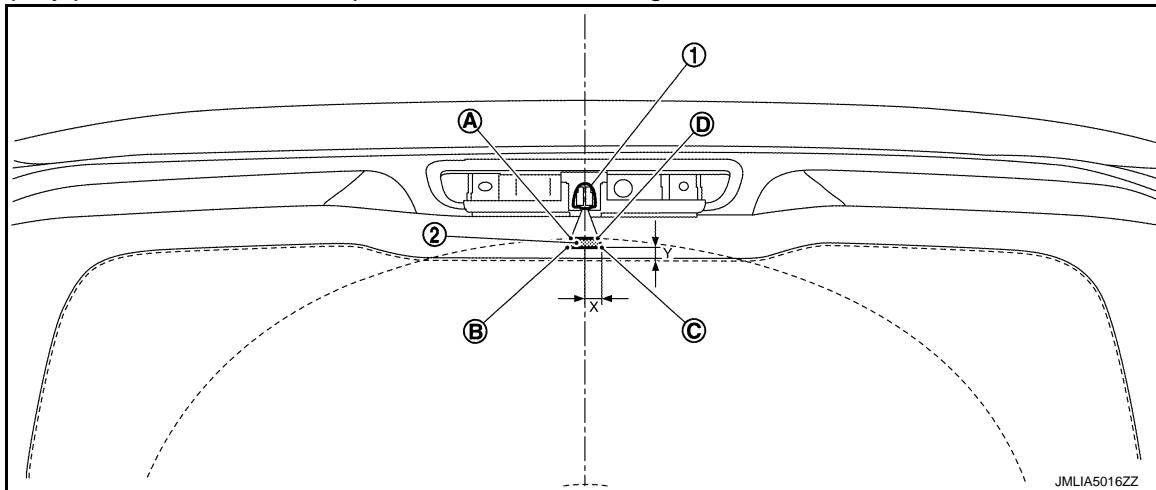
ADJUSTMENT

Rear Washer Nozzle Spray Position Adjustment

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

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



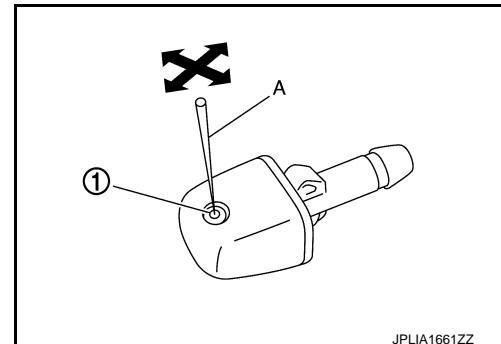
① Rear washer nozzle

② Spray range

Unit: mm (in)

Spray position	X	Y
Ⓐ	10.6 (0.42)	20.6 (0.81)
Ⓑ	12.8 (0.50)	15.5 (0.61)
Ⓒ	12.8 (0.50)	15.5 (0.61)
Ⓓ	10.6 (0.42)	20.6 (0.81)

Insert a needle or similar object (A) into the spray opening ① and move up/down and left/right to adjust the spray position.



FRONT WASHER TUBE

FRONT WASHER TUBE : Removal and Installation

INFOID:000000010785468

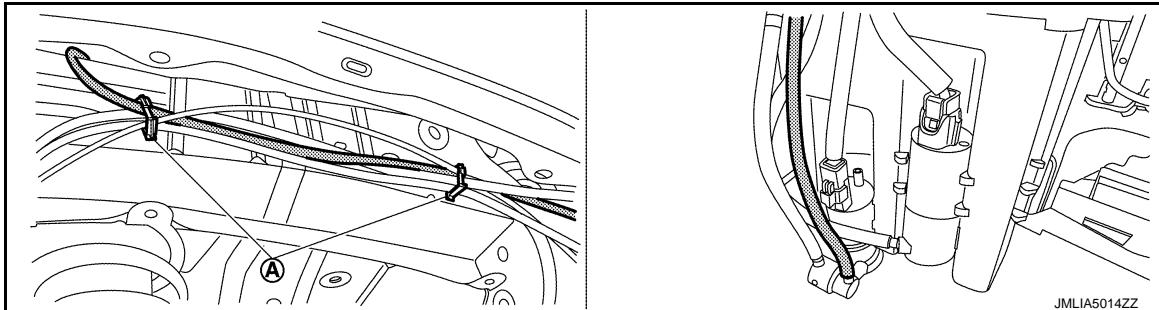
REMOVAL

1. Remove cowl top cover. Refer to [EXT-25, "Removal and Installation"](#).
2. Disconnect front washer tube C from front washer nozzle RH.
3. Disconnect front washer tube D from front washer nozzle LH.
4. Disconnect front washer tube C and D from check valve.
5. Disconnect check valve from front washer tube B.
6. Disconnect front washer tube B from cowl top cover.
7. Disconnect joint from front washer tube A.
8. Remove fender protector RH. Refer to [EXT-35, "FENDER PROTECTOR : Removal and Installation"](#).

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

9. Disconnect front washer tube A from washer tank and fixing clips Ⓐ.



INSTALLATION

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

CAUTION:

Align washer tube marking to the vehicle installation position.

REAR WASHER TUBE

REAR WASHER TUBE : Removal and Installation

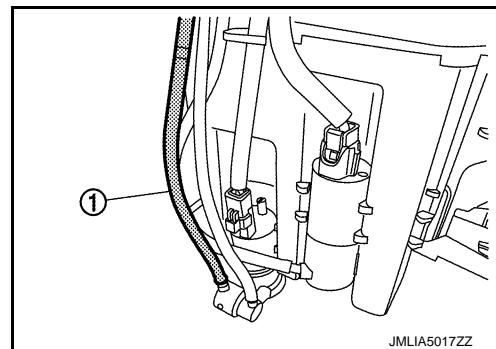
INFOID:0000000010785469

REMOVAL

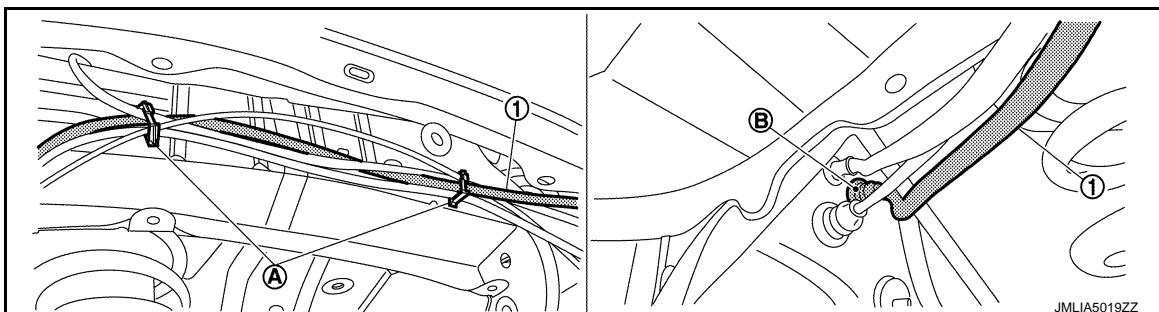
CAUTION:

Replacement of a single part is not possible due to the adoption of rear washer tube B. For replacement, replace back door assembly as a set.

1. Remove fender protector RH. Refer to [EXT-35, "FENDER PROTECTOR : Removal and Installation"](#).
2. Disconnect rear washer tube A ① from washer pump.



3. Remove rear washer tube A ① from fixing clips Ⓐ, and then remove grommet Ⓑ, and then pull in rear washer tube A of inside the vehicle.



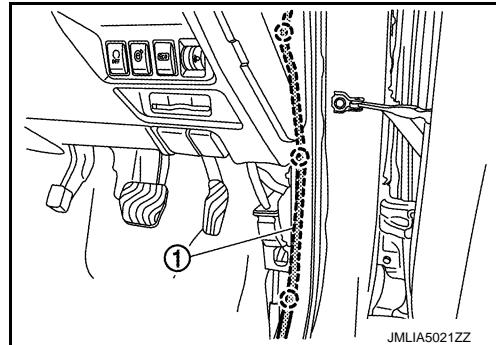
4. Remove dash side finisher RH. Refer to [INT-26, "DASH SIDE FINISHER : Removal and Installation"](#).
5. Remove center pillar lower garnish RH. Refer to [INT-27, "CENTER PILLAR LOWER GARNISH : Removal and Installation"](#).
6. Remove luggage side upper finisher RH. Refer to [INT-45, "LUGGAGE SIDE UPPER FINISHER : Removal and Installation"](#).

WASHER NOZZLE AND TUBE

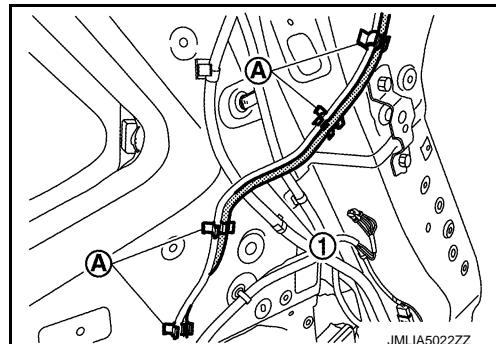
< REMOVAL AND INSTALLATION >

7. Remove rear washer tube A ① from fixing clips.

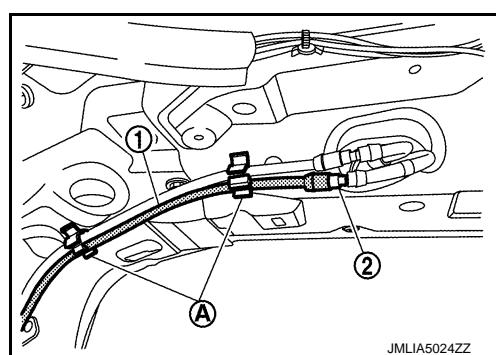
○ : Clip



8. Remove rear washer tube A from harness protector.
9. Remove rear washer tube A ① from fixing clips A.



10. Remove rear end of headlining to make work space. Refer to [INT-37, "Removal and Installation"](#).
11. Remove rear washer tube A ① from fixing clips A.
12. Disconnect rear washer tube A from joint ②, and then remove rear washer tube A.



13. Remove rear washer tube C. Refer to [WW-99, "REAR WASHER NOZZLE : Removal and Installation"](#).

INSTALLATION

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

CAUTION:

Align washer tube marking to the vehicle installation position.

REAR CAMERA WASHER TUBE

REAR CAMERA WASHER TUBE : Removal and Installation

INFOID:0000000010785470

REMOVAL

Remove rear camera washer tube. Refer to [DAS-156, "Removal and Installation"](#).

INSTALLATION

Install in the reverse order of removal.

A
B
C
D
E
F
G
H
I
J
K

WW

M
N
O
P

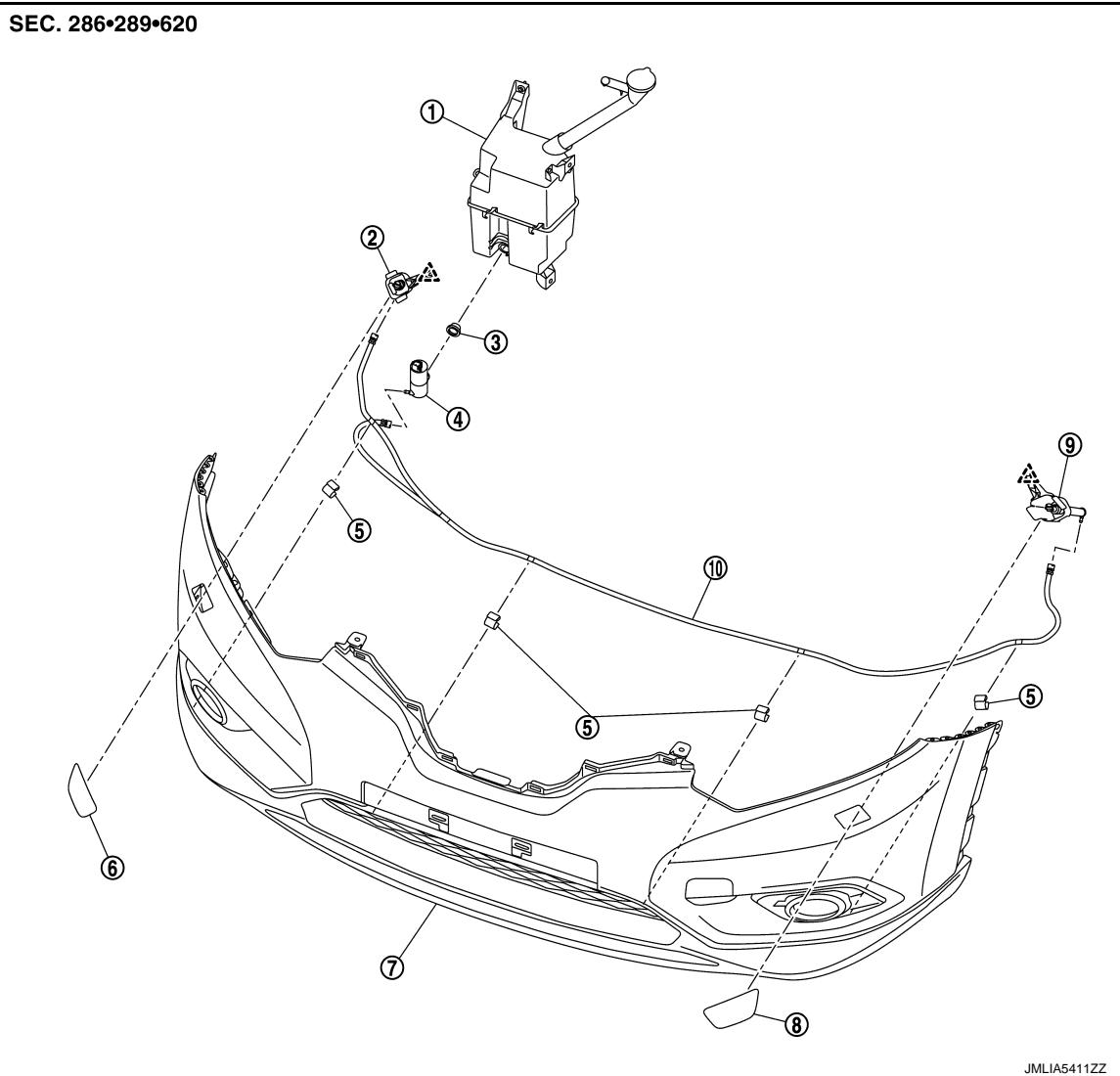
HEADLAMP WASHER

< REMOVAL AND INSTALLATION >

HEADLAMP WASHER

Exploded View

INFOID:0000000010786689



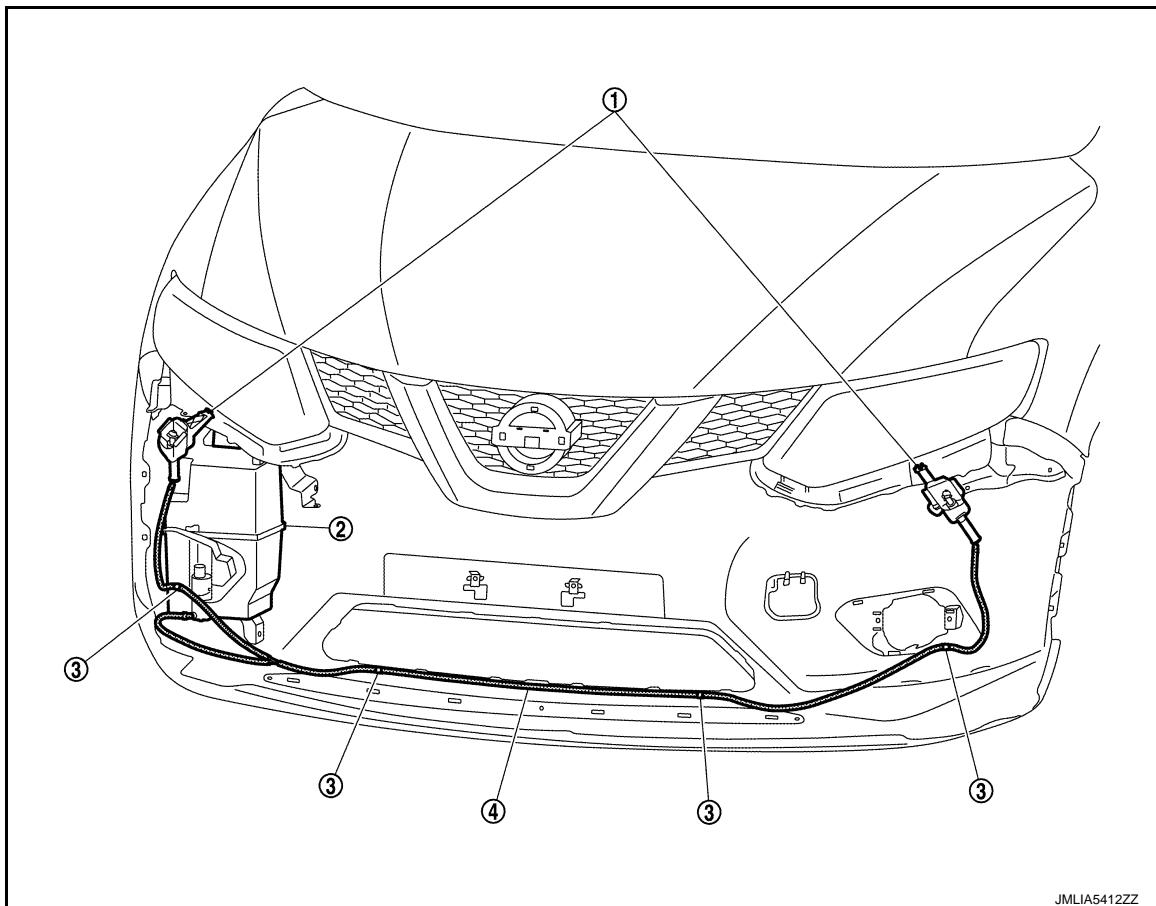
- | | | |
|------------------------|-----------------------------|-----------------------------|
| ① Washer tank | ② Headlamp washer nozzle RH | ③ Packing |
| ④ Headlamp washer pump | ⑤ Tube clip | ⑥ Headlamp washer cover RH |
| ⑦ Front bumper fascia | ⑧ Headlamp washer cover LH | ⑨ Headlamp washer nozzle LH |
| ⑩ Headlamp washer tube | | |
- △ : Pawl

HEADLAMP WASHER

< REMOVAL AND INSTALLATION >

Hydraulic Layout

INFOID:0000000010786690



① Headlamp washer nozzle

② Washer tank

③ Tube clip

④ Headlamp washer tube

WASHER NOZZLE

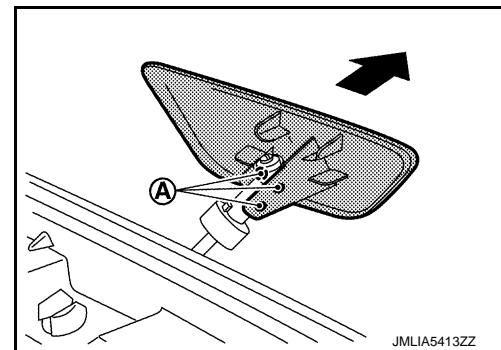
WASHER NOZZLE : Removal and Installation

INFOID:0000000010786691

WW

REMOVAL

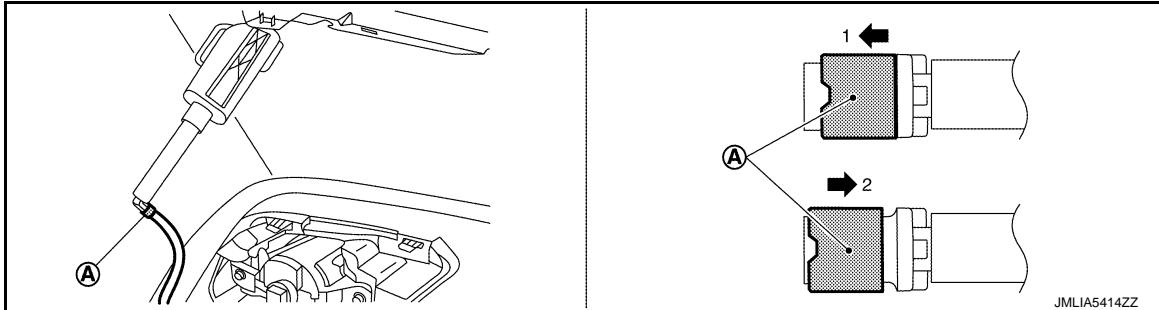
1. Remove front bumper fascia. Refer to [EXT-15, "Removal and Installation"](#).
2. Disengage headlamp washer cover fixing pawls Ⓐ while pull out headlamp washer nozzle from front bumper fascia, and then remove headlamp washer cover.



HEADLAMP WASHER

< REMOVAL AND INSTALLATION >

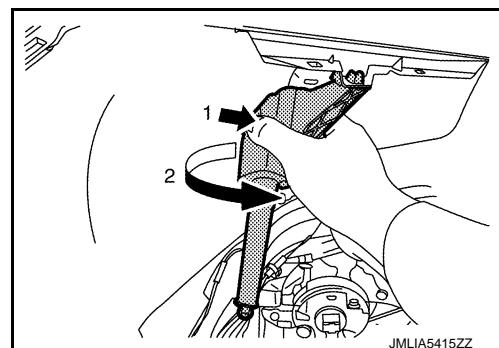
3. Disconnect headlamp washer tube connector **(A)**, and then remove headlamp washer tube from headlamp washer nozzle.



NOTE:

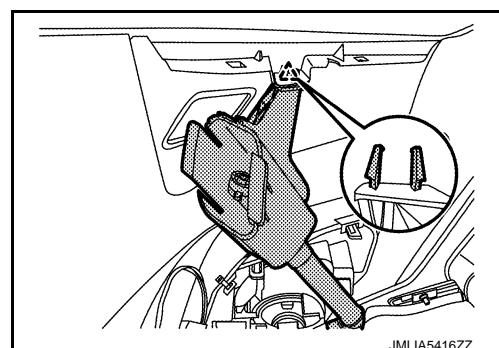
- Move headlamp washer tube connector **(A)** toward the direction of arrow (1) to unlock.
- Move headlamp washer tube connector **(A)** toward the direction of arrow (2) to lock.

4. Disengage headlamp washer nozzle from front bumper fascia according to numerical order 1→2 indicated by arrows as shown in the figure.



5. Disengage headlamp washer nozzle fixing pawl, and then remove headlamp washer nozzle.

 Pawl



INSTALLATION

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

CAUTION:

- Add washer liquid up to the top of the washer tank inlet after installing. Check that there is no leakage.
- After installation, check spray position. Refer to [WW-106, "WASHER NOZZLE : Inspection"](#).

WASHER NOZZLE : Inspection

INFOID:000000010786692

HEADLAMP WASHER NOZZLE SPRAY POSITION INSPECTION

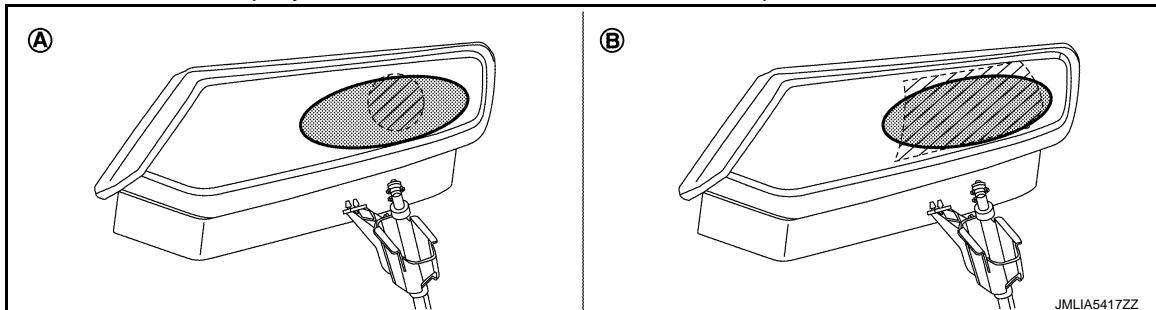
CAUTION:

Replace headlamp washer nozzle assembly with a new part if headlamp washer jet position is outside the headlamp illumination area shown in the figure.

HEADLAMP WASHER

< REMOVAL AND INSTALLATION >

Check that washer fluid is sprayed on the luminescent surface of lamp.



(A) LED headlamp (B) Halogen headlamp

■ : Shooting area

■ : Lamp light-em

■ Lamp light Shunting area

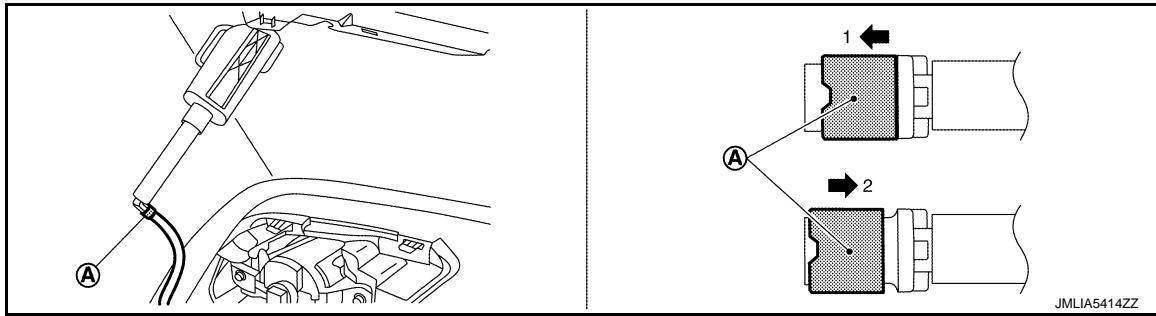
WASHER TUBE

WASHER TUBE : Removal and Installation

INFOID:0000000010786693

REMOVAL

1. Remove front bumper fascia. Refer to [EXT-15, "Removal and Installation"](#).
 2. Disconnect headlamp washer tube connector **Ⓐ**, and then remove headlamp washer tube from headlamp washer nozzle.



NOTE:

- Move headlamp washer tube connector  toward the direction of arrow (1) to unlock.
 - Move headlamp washer tube connector toward the direction of arrow (2) to lock.

3. Disengage headlamp washer tube fixing tube clips, and then remove headlamp washer tube.

INSTALLATION

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

CAUTION:

Add washer liquid up to the top of the washer tank inlet after installing. Check that there is no leakage.

WASHER PUMP

WASHER PUMP : Removal and Installation

INFOID:0000000010786694

REMOVAL

CAUTION:

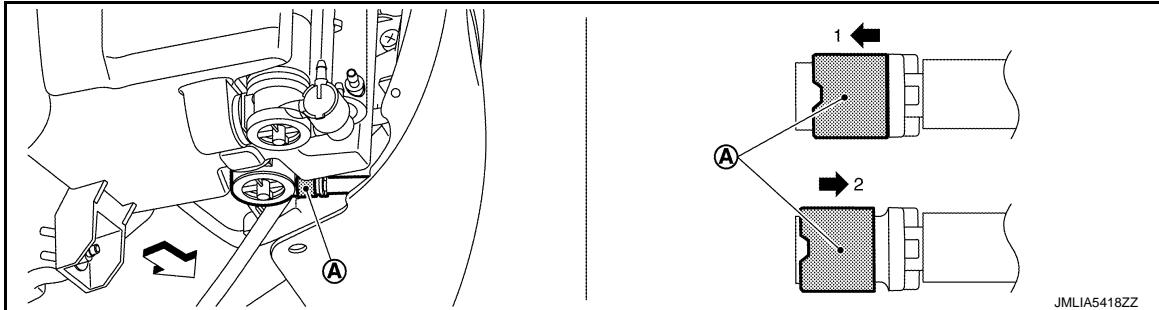
CAUTION: When the headlamp washer tube and headlamp washer tube is removed, washer fluid may come out so prepare a container to receive the fluid and never allow fluid to be sprinkled.

1. Remove front fender protector RH. Refer to EXT-35, "FENDER PROTECTOR : Removal and Installation".

HEADLAMP WASHER

< REMOVAL AND INSTALLATION >

2. Disconnect headlamp washer tube connector **(A)**, and then remove headlamp washer tube from washer tank.



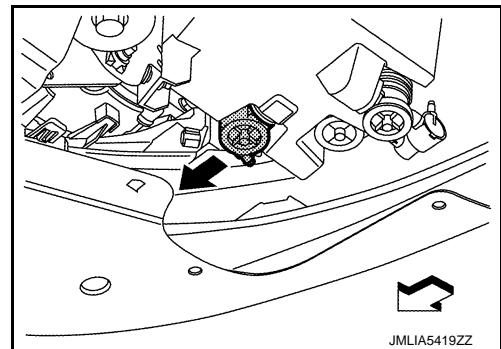
↖ : Vehicle front

NOTE:

- Move headlamp washer tube connector **(A)** toward the direction of arrow (1) to unlock.
- Move headlamp washer tube connector **(A)** toward the direction of arrow (2) to lock.

3. Disconnect headlamp washer pump harness connector.
4. Pull out headlamp washer pump from washer tank.

↖ : Vehicle front



5. Remove packing.

INSTALLATION

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

CAUTION:

- Check that packing is inserted fully. (This may be the cause of washer fluid leakage and washer pump looseness.)
- Add washer liquid up to the top of the washer tank inlet after installing. Check that there is no leakage.

LIGHT & RAIN SENSOR

< REMOVAL AND INSTALLATION >

LIGHT & RAIN SENSOR

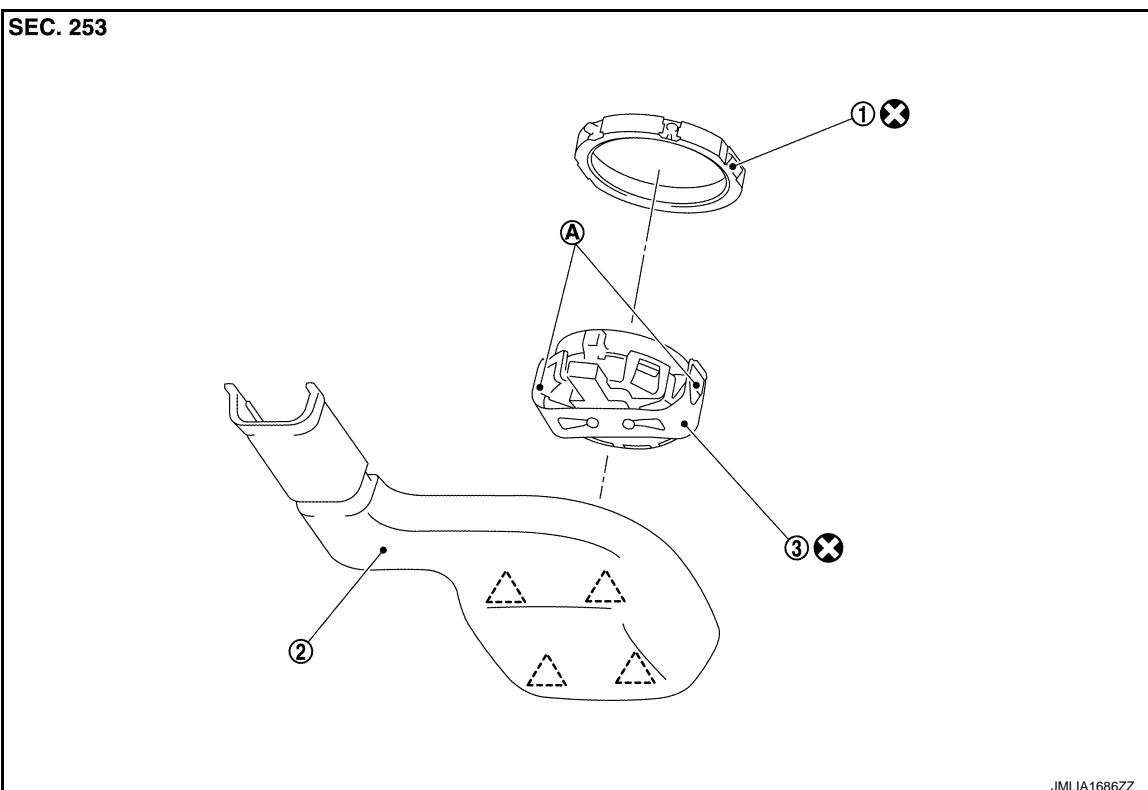
Exploded View

INFOID:0000000010785471

WITH FRONT CAMERA UNIT

Refer to [MIR-23, "Exploded View"](#).

WITHOUT FRONT CAMERA UNIT



① Rain sensor bracket

② Rain sensor cover

③ Rain sensor

Ⓐ Lock spring

△ : Pawl

ⓧ : Always replace after every disassembly.

K

WW

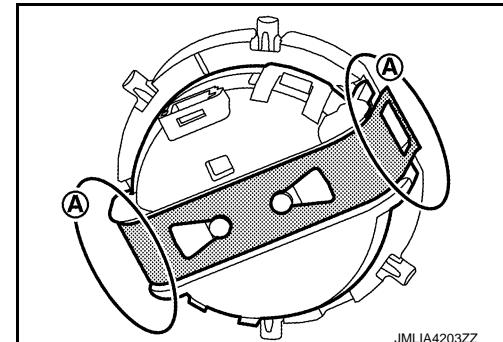
Removal and Installation

INFOID:0000000010785472

REMOVAL

With Front Camera Unit

1. Remove front camera unit cover. Refer to [DAS-149, "Removal and Installation"](#).
2. Disconnect rain sensor harness connector.
3. Disengage rain sensor fixing lock spring portion Ⓐ, and then Peel off rain sensor.

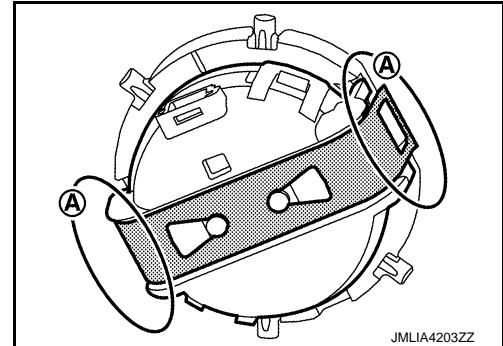


LIGHT & RAIN SENSOR

< REMOVAL AND INSTALLATION >

Without Front Camera Unit

1. Disengage rain sensor cover fixing pawls, and then remove rain sensor cover.
2. Disconnect rain sensor harness connector.
3. Disengage rain sensor fixing lock spring portion **A**, and then Peel off rain sensor.



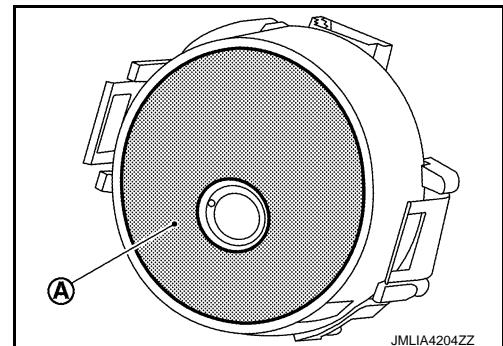
JMLIA4203ZZ

INSTALLATION

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

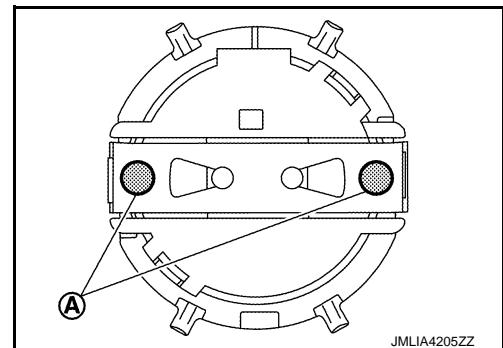
CAUTION:

- Replace rain sensor with a new part after removal. Never reuse rain sensor.
- Clean the sensor installation portion of the windshield.
- When the sensor is removed, wipe off the silicon pad remaining on the windshield surface.
- Remove the sensor protective cover just before installation.
- Never touch the silicon pad **A** after removal of sensor protective cover.



JMLIA4204ZZ

- Install the rain sensor so that the connector faces vehicle upward.
- When installing, never allow silicon pad to touch the sensor bracket and other parts.
- Compress the lock spring portion **A** vertically to the glass surface and fully engage both ends of lock spring.



JMLIA4205ZZ

- Never use a sensor that is dropped.
- Perform check after replacement. Refer to [WW-110, "Inspection"](#).

Inspection

INFOID:000000010785473

CAUTION:

Clean the windshield glass and wiper refill so that the windshield glass may not be damaged by dust, etc.

1. Push the ignition switch to the ON position, and set the combination switch to AUTO.

LIGHT & RAIN SENSOR

< REMOVAL AND INSTALLATION >

2. Spray water mist toward the sensor.
3. Check that wiper operates.
 - If the wiper does not operate, check the connection of the connector. Refer to [WW-61, "Component Function Check"](#).
 - If there is no malfunction in the connection, replace the sensor.

A

B

C

D

E

F

G

H

I

J

K

WW

M

N

O

P

WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Removal and Installation

INFOID:0000000010785474

Wiper and washer switch is integrated in the combination switch. Refer to [BCS-122, "Removal and Installation".](#)

HEADLAMP WASHER SWITCH

< REMOVAL AND INSTALLATION >

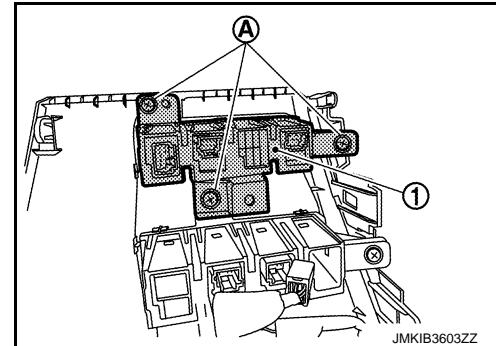
HEADLAMP WASHER SWITCH

Removal and Installation

INFOID:0000000010957658

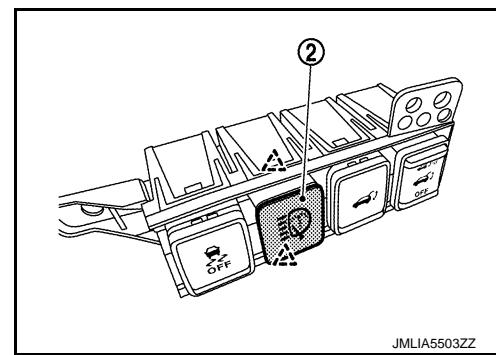
REMOVAL

1. Remove the instrument lower panel LH. Refer to [IP-14, "Removal and Installation"](#).
2. Remove screws Ⓐ and then remove the switch bracket ① from the instrument lower panel LH.



3. Remove headlamp washer switch ② from the switch bracket.

△ : Pawl



INSTALLATION

Install in the reverse order of removal.

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