

SECTION

WW

WIPER & WASHER

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APPLICATION NOTICE

< HOW TO USE THIS MANUAL >

HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000010957670

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:

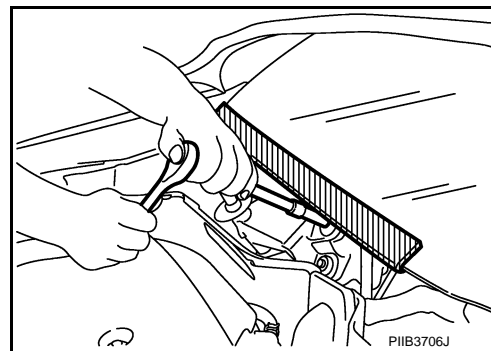
Always observe the following items for preventing accidental activation.

- 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

INFOID:0000000010785898

- 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.

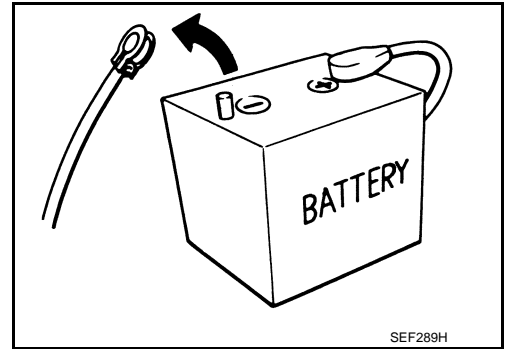
NOTE:

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.



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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

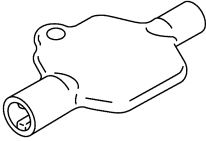
< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tool

INFOID:0000000010785405

Tool name	Description
<div>Washer nozzle adjuster</div> <div></div> <div>JSLIA0149ZZ</div>	<div>Adjusting washer nozzle. (Available in SEC. 289 of PARTS CATALOG: Part No. 28949 1EA0A)</div> <div>NOTE: Washer nozzle adjuster is included with shipment of nozzle.</div>

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

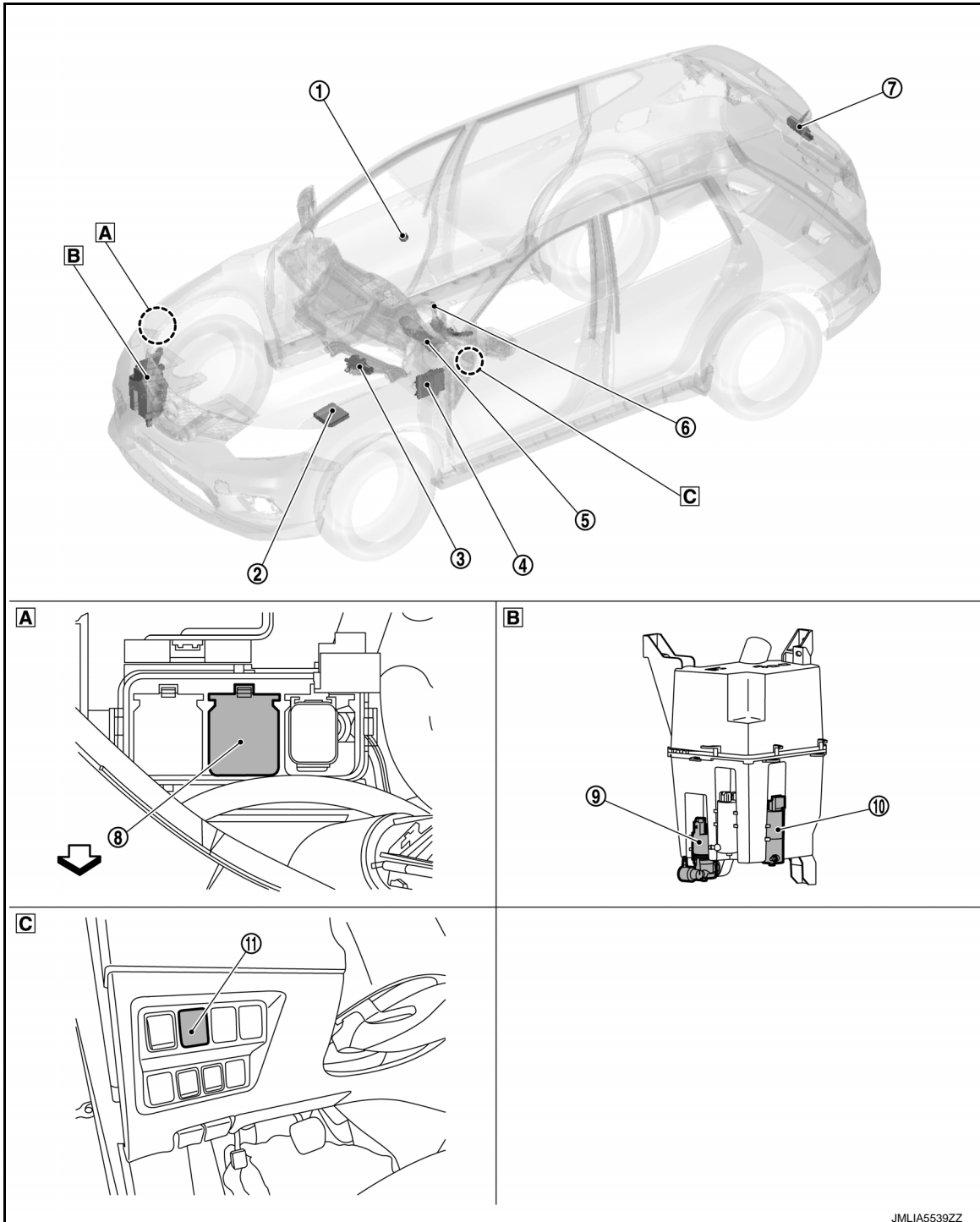
SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000010785406

LHD MODELS



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

C Instrument lower panel LH

8 : Vehicle front

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

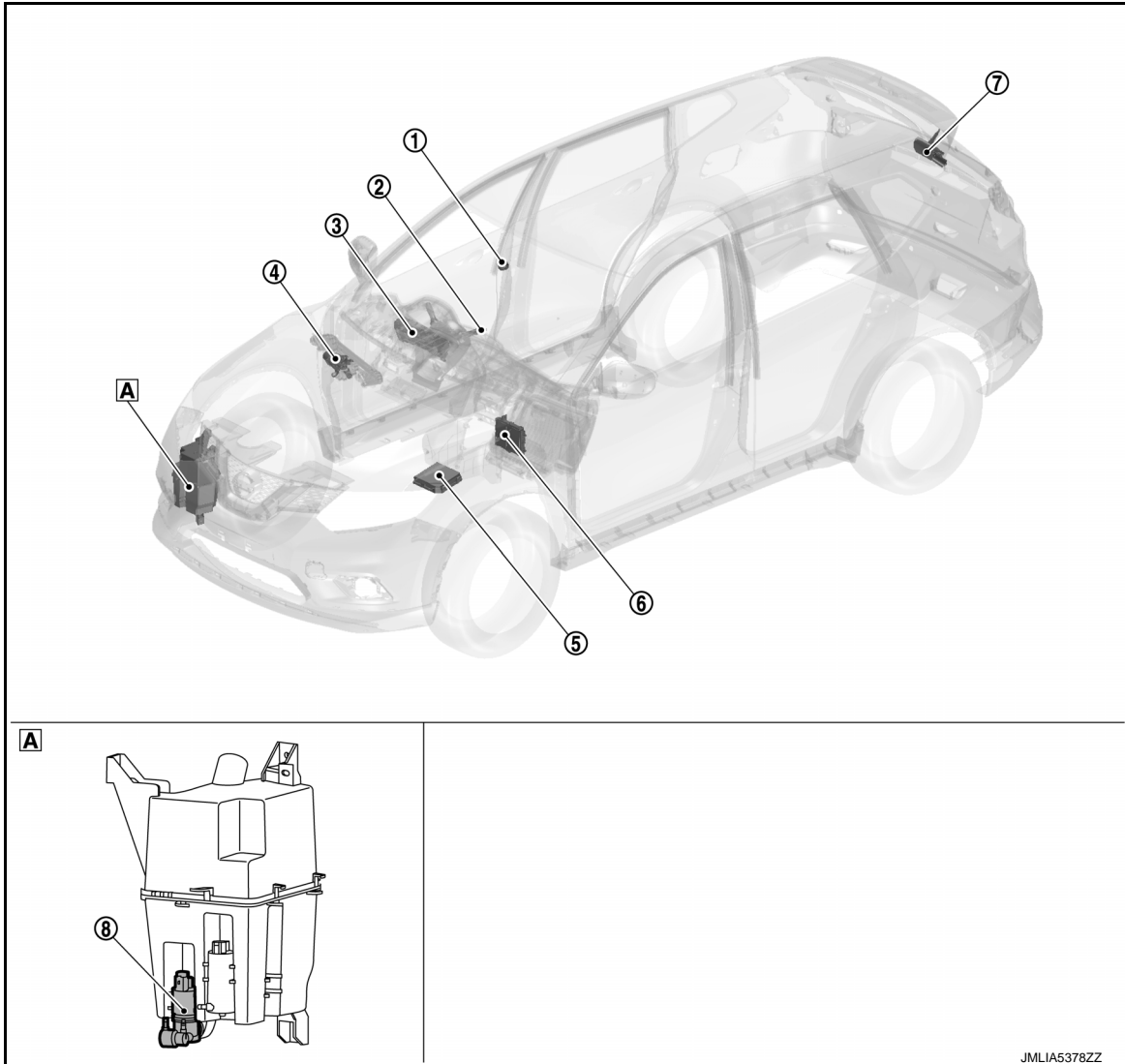
RHD MODELS

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COMPONENT PARTS

< SYSTEM DESCRIPTION >



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. Refer to PCS-5, "Component Parts Location" for detailed installation location.
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

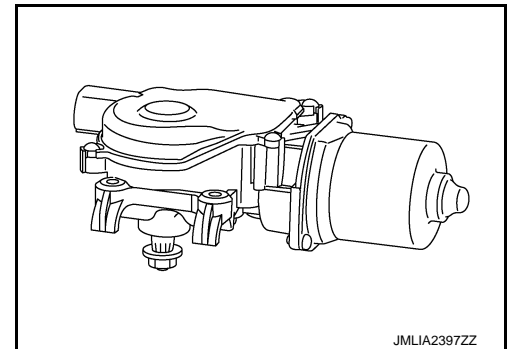
*2: For M/T models

*3: Except for M/T models

Front Wiper Motor

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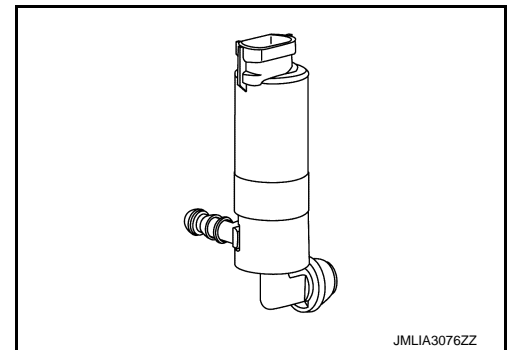
- Controls front wiper operation with IPDM E/R control.
- Transmits front wiper stop position signal to IPDM E/R.



Headlamp Washer Pump

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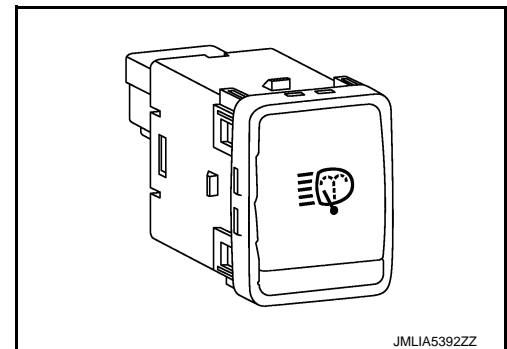
Washer fluid is sprayed according to the power supply from headlamp washer relay.



Headlamp Washer Switch

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



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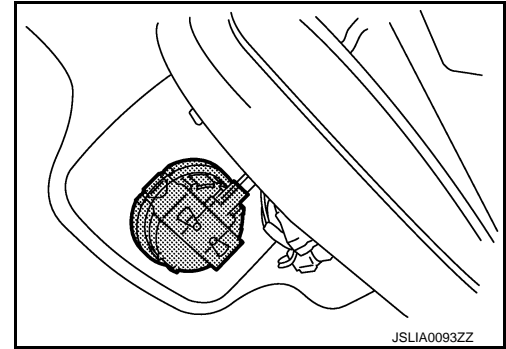
COMPONENT PARTS

< SYSTEM DESCRIPTION >

Light & Rain Sensor

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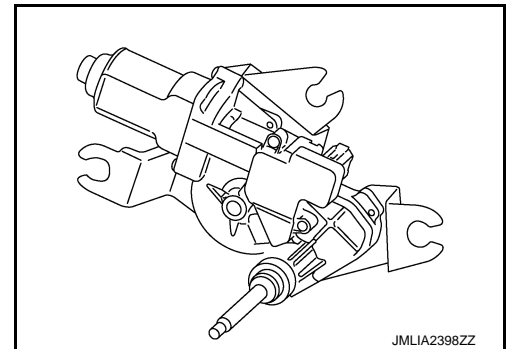
Detects water droplets on the windshield with infrared rays, and transmits the light & rain sensor signal to BCM via the light & rain sensor serial link.



Rear Wiper Motor

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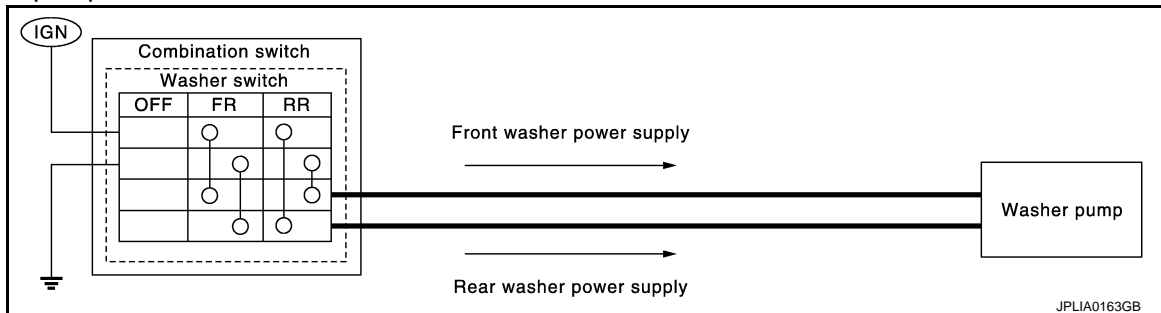
- Controls rear wiper operation with BCM control.
- Transmits rear wiper stop position signal to BCM.



Washer Switch

INFOID:0000000010785410

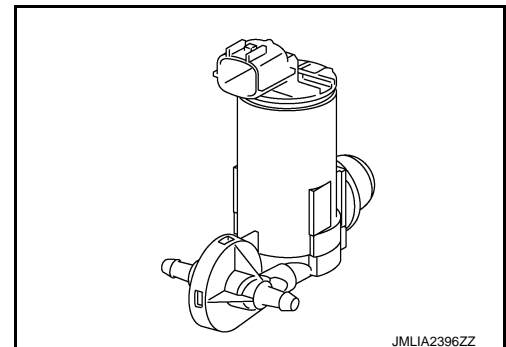
- Washer switch is integrated with combination switch.
- Combination switch operates front washer or rear washer by changing voltage polarity to be supplied to washer pump.



Washer Pump

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Washer fluid is sprayed according to washer switch states.



SYSTEM

< SYSTEM DESCRIPTION >

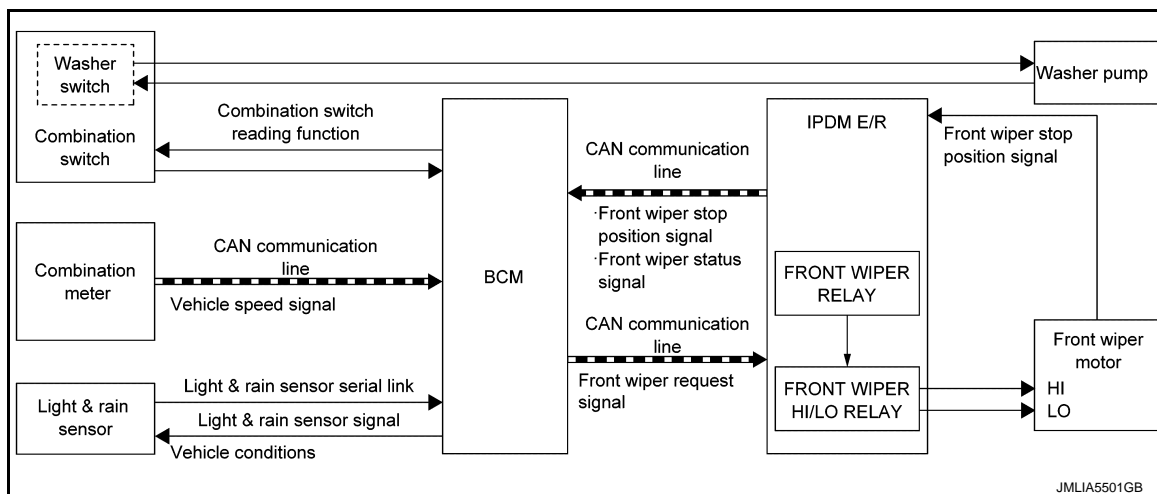
SYSTEM

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



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.

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 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.

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.)

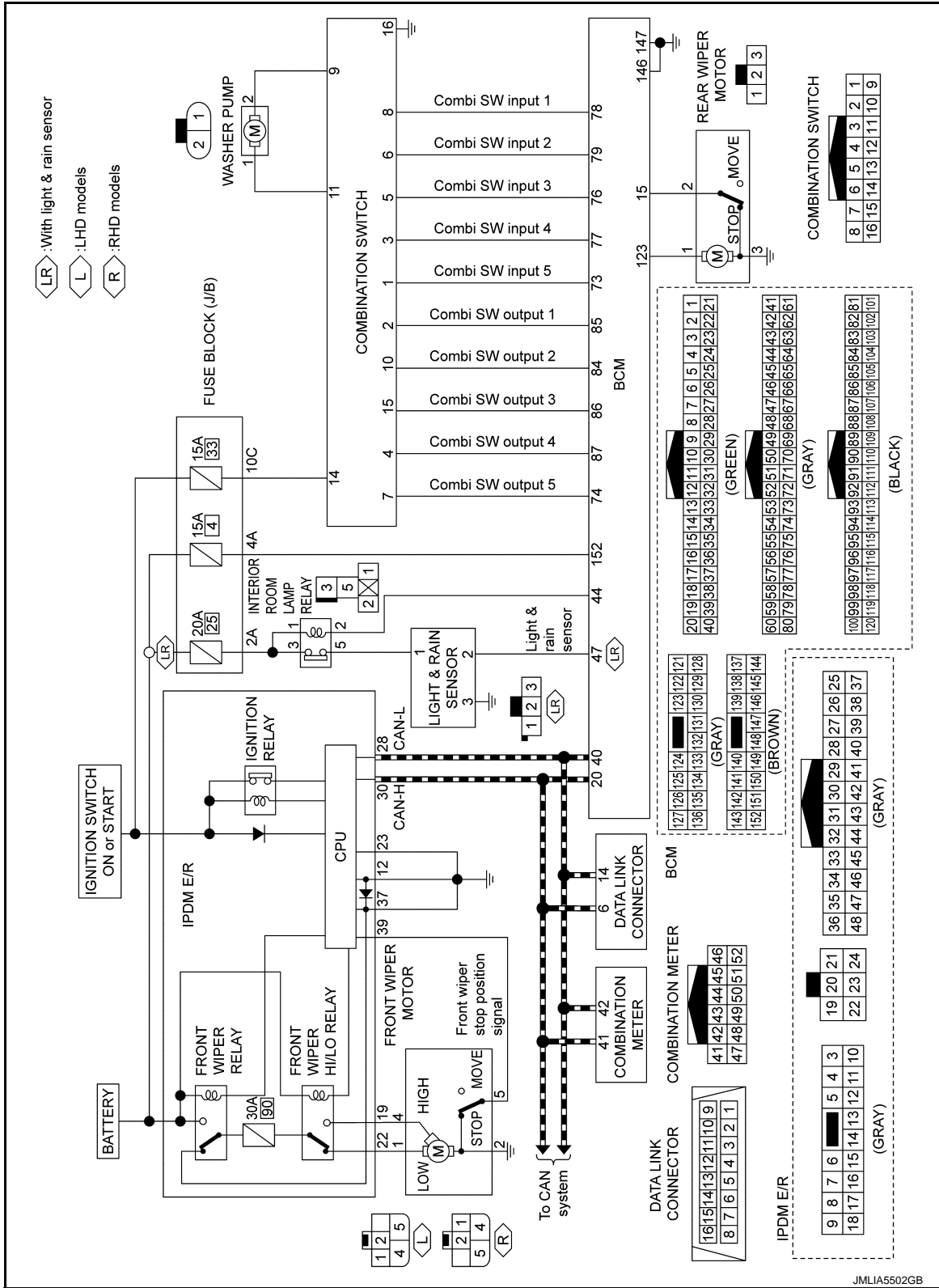
FRONT WIPER AND WASHER SYSTEM (WITH LIGHT & RAIN SENSOR) : Circuit

SYSTEM

< SYSTEM DESCRIPTION >

Diagram

INFOID:000000010785414



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

INFOID:000000010785414

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.

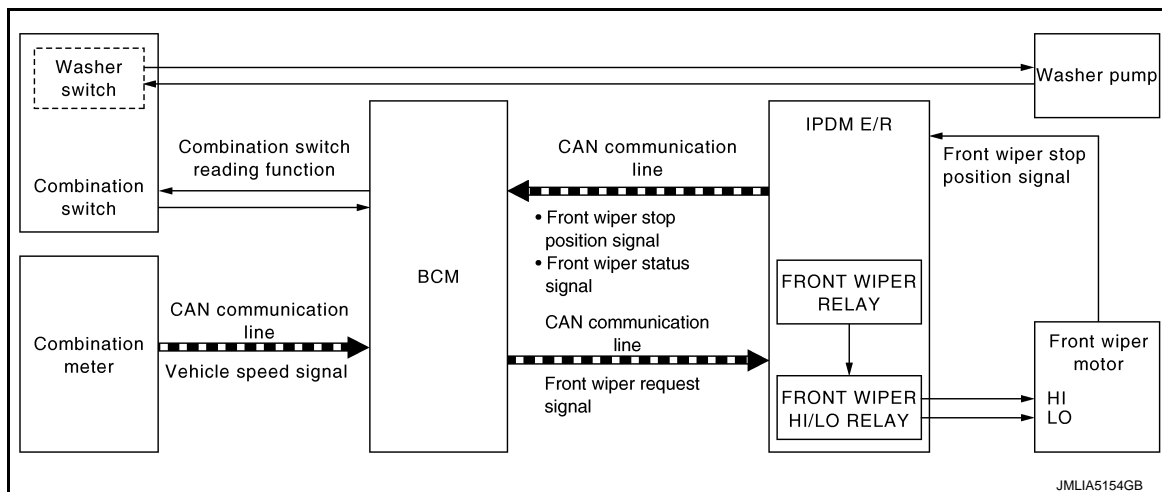
- Front wiper switch AUTO and sensing rain drop: The condition just before the activation of fail-safe is maintained until the front wiper switch is turned OFF.
- Front wiper switch AUTO and not sensing rain drop: Front wiper is LO operation until the front wiper switch is turned off.

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	↓ Short	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. A
- 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). B
- 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. C
- 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 D

- 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. E

Washer linked operating condition of front wiper

- Ignition switch ON F
- 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. G

FRONT WIPER DROP WIPE OPERATION

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

Front wiper drop wiper 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. I

NOTE:

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

FRONT WIPER SERVICE POSITION OPERATION K

- 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. WW

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) M

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

- Front wiper switch is OFF N
- 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. O
- 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.) P

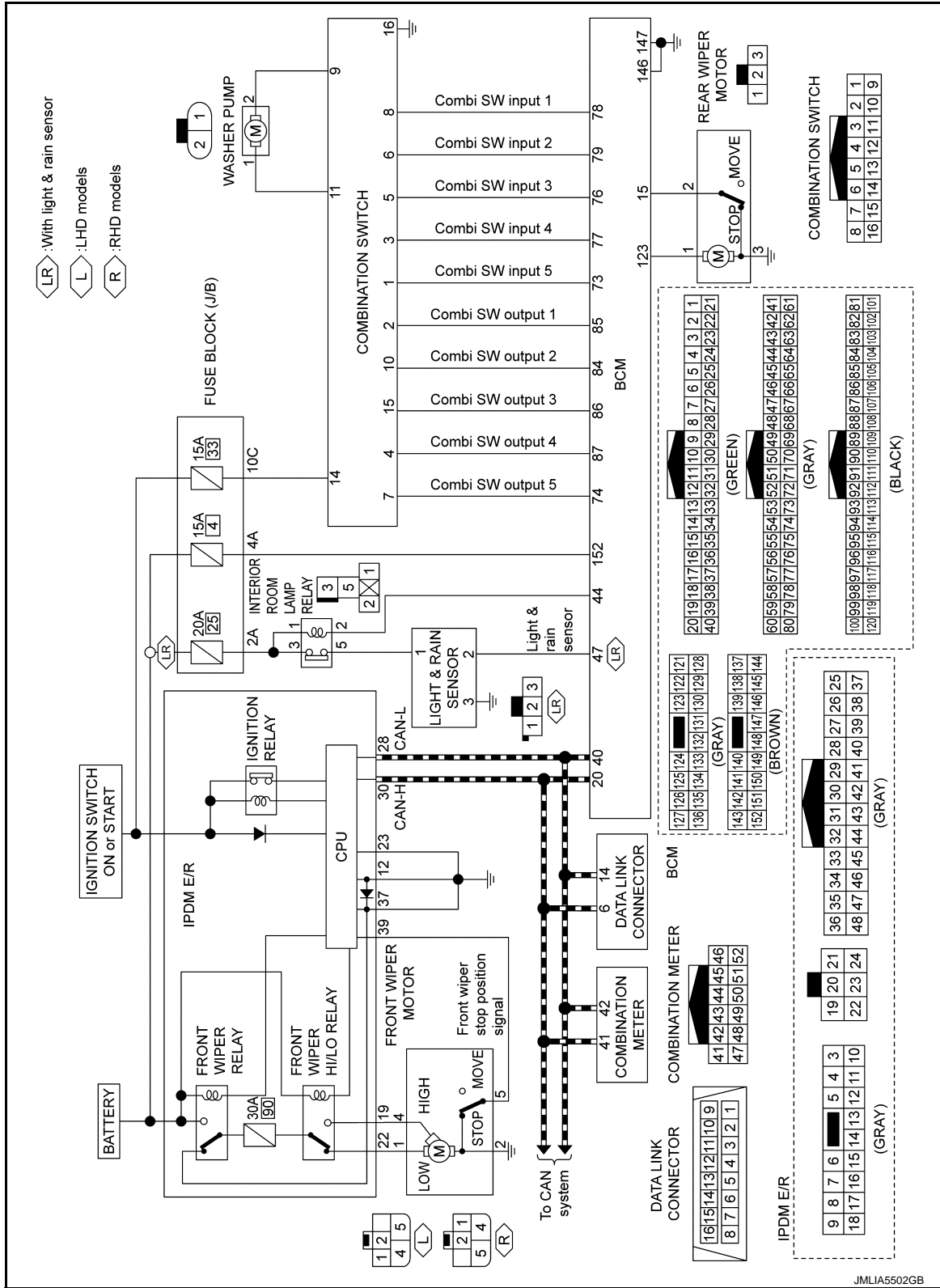
FRONT WIPER AND WASHER SYSTEM (WITHOUT LIGHT & RAIN SENSOR) : Cir-

SYSTEM

< SYSTEM DESCRIPTION >

cuit Diagram

INFOID:000000010785416



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

INFOID:000000010785417

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.

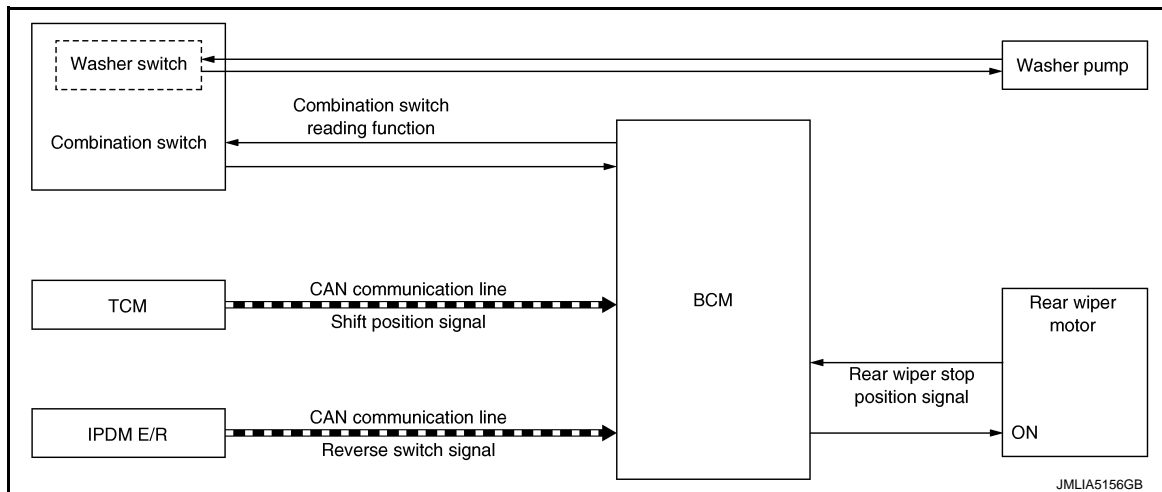
Ignition switch	Front wiper switch	Front wiper stop position signal	Fail-safe
ON	OFF	The signal does not change from the battery voltage for 10 seconds.	Stops front wiper power supply for 20 seconds
	Except OFF	The signal does not change for 10 seconds.	

REAR WIPER AND WASHER SYSTEM

REAR WIPER AND WASHER SYSTEM : System Description

INFOID:0000000010785418

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

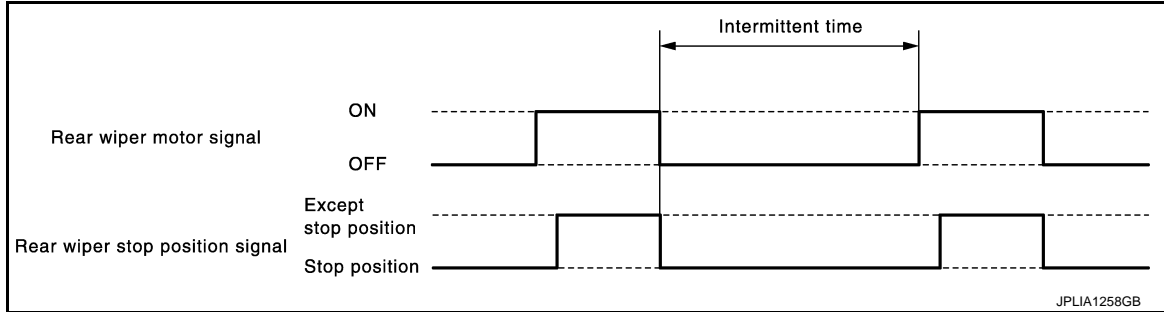
- BCM supplies power to the rear wiper motor according to the INT operating condition.

Rear wiper INT operating condition

SYSTEM

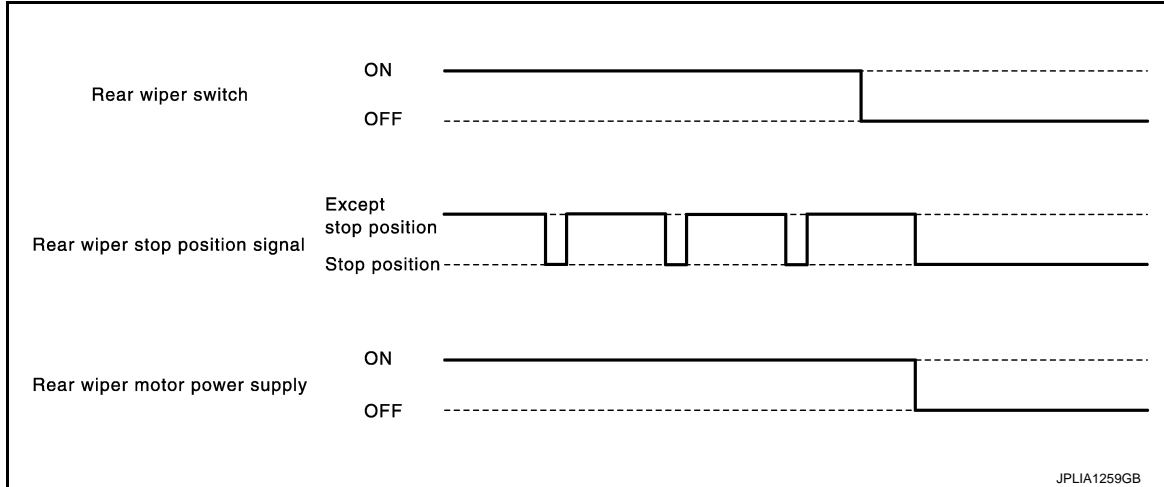
< SYSTEM DESCRIPTION >

- 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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WW

INFOID:0000000010785419



INFOID:0000000010785420

WW-24

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.

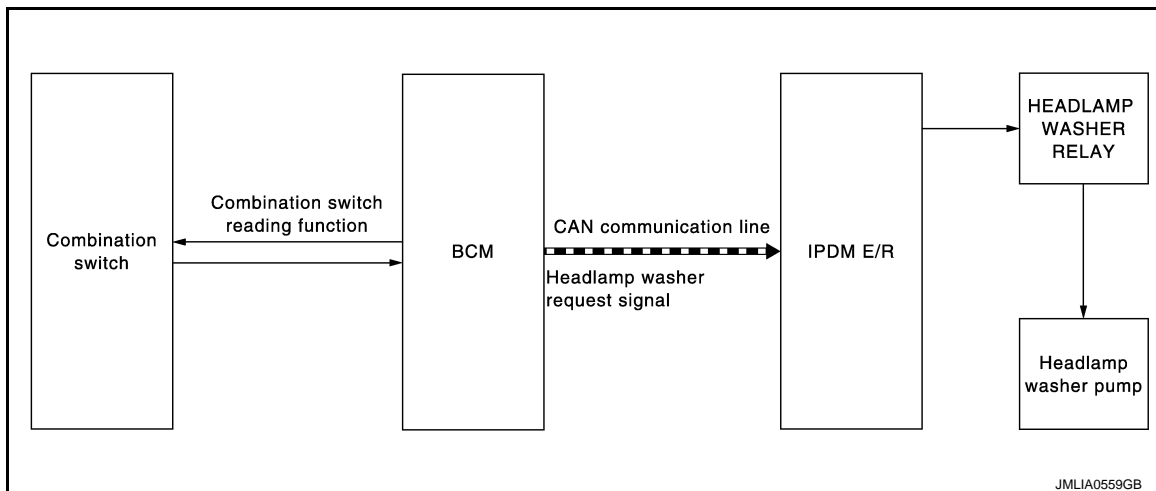
HEADLAMP WASHER SYSTEM

HEADLAMP WASHER SYSTEM : System Description

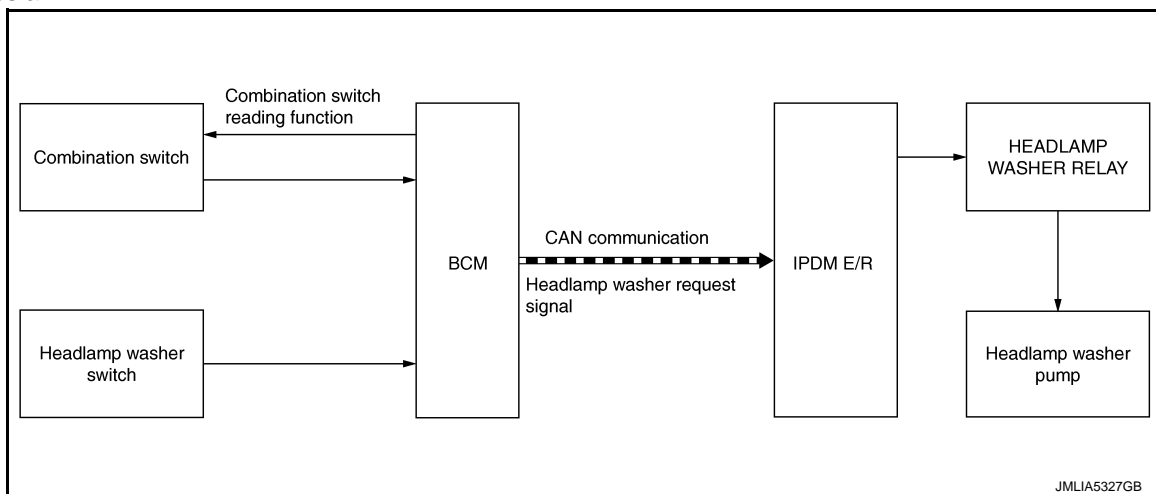
INFOID:0000000010957659

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

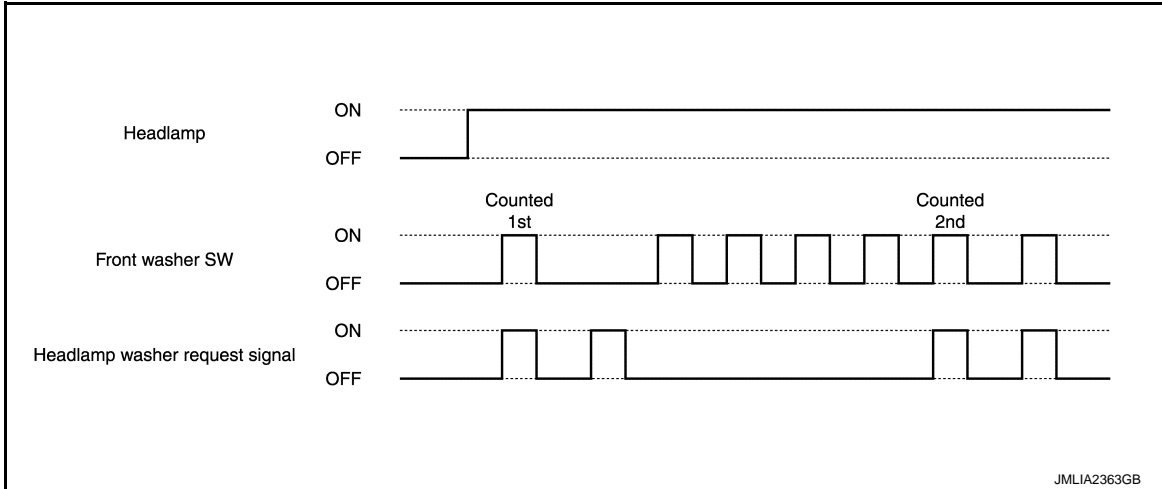
Except For Russia

- 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

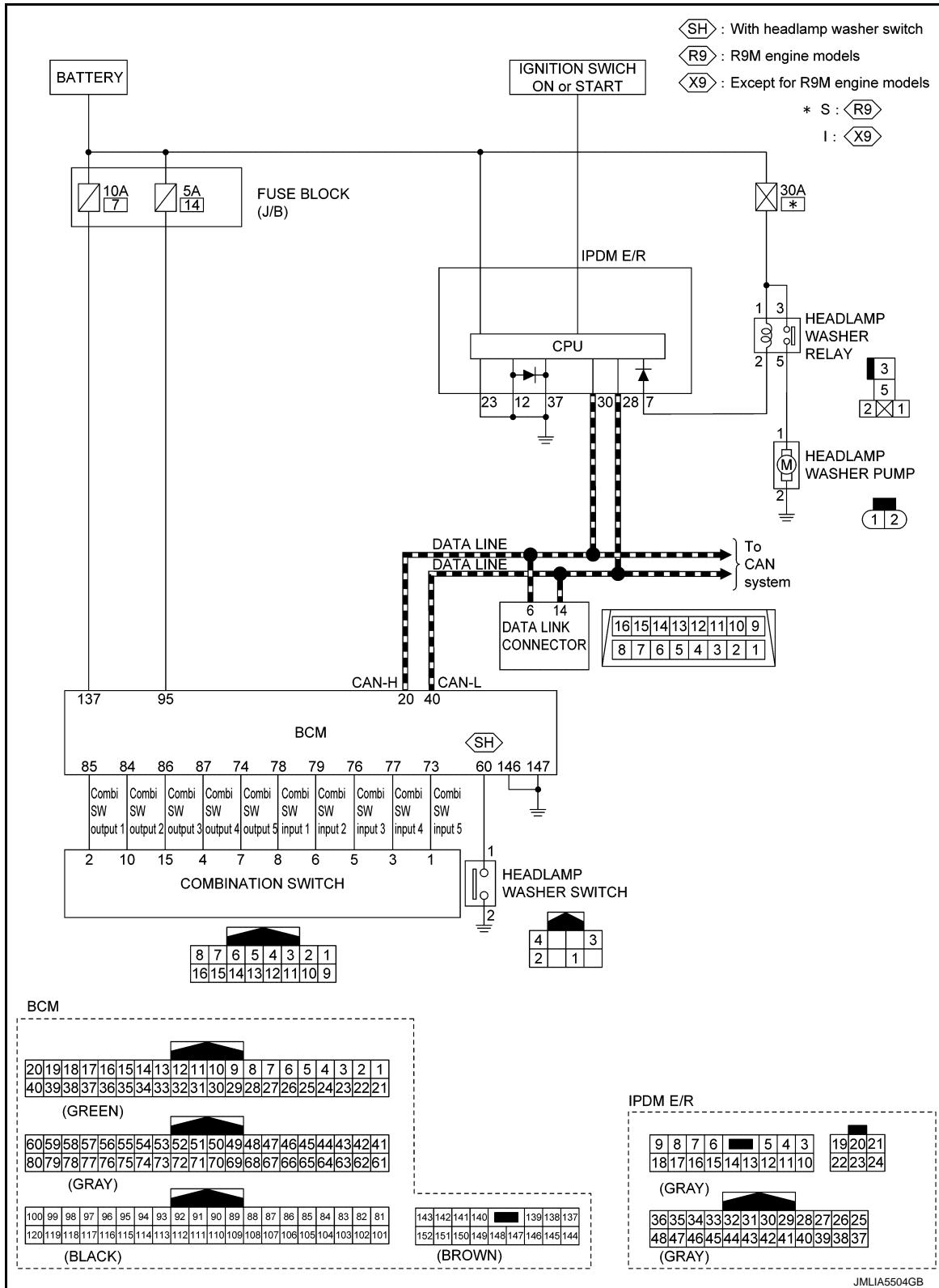
- Ignition switch ON
- Headlamps ON
- Headlamp washer switch ON
- IPDM E/R turns ON/OFF the headlamp washer relay by receiving the headlamp washer request signal, and controls the headlamp washer.

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 CONDITONER*		×	×
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.)
	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)
	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
	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
	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]	Displays the status of the rear wiper stop position signal received from rear wiper motor.
H/L WSR SW* [Off/On]	Status of headlamp washer switch judged by BCM.
RAIN SENSOR [OFF/LOW/HIGH/SPLASH/NG]	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:000000010957676

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.White 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 SECURTY 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.

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DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

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

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
NMB HL (LO) RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (LO) (right) circuit. 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.
NMB HL (LO) RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (LO) (right) circuit.
T LAMP 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 tail lamp (left) circuit. NOTE: When the number of tail lamp (left) circuit retries count is 20, this item counts 1.
NMB T LAMP LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the tail lamp (left) circuit. 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.
NMB T LAMP LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the tail lamp (left) circuit.
T LAMP 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 tail lamp (right) circuit. NOTE: When the number of tail lamp (right) circuit retries count is 20, this item counts 1.
NMB T LAMP RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the tail lamp (right) circuit. 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.
NMB T LAMP RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the tail lamp (right) circuit.
BATTERY STATUS [OK/NG]	Monitor the battery status from the battery output.

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).

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

BCM, IPDM E/R

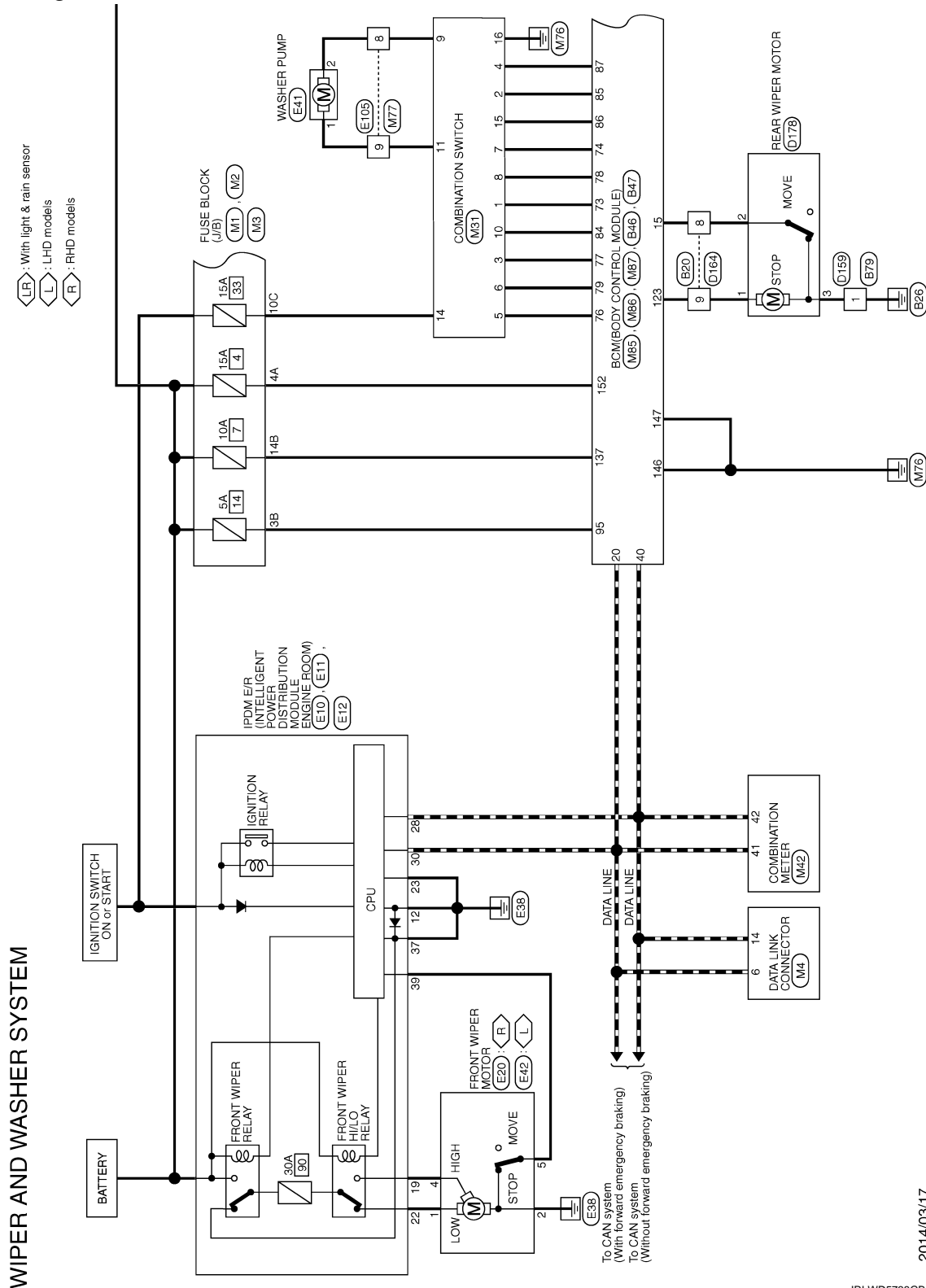
List of ECU Reference

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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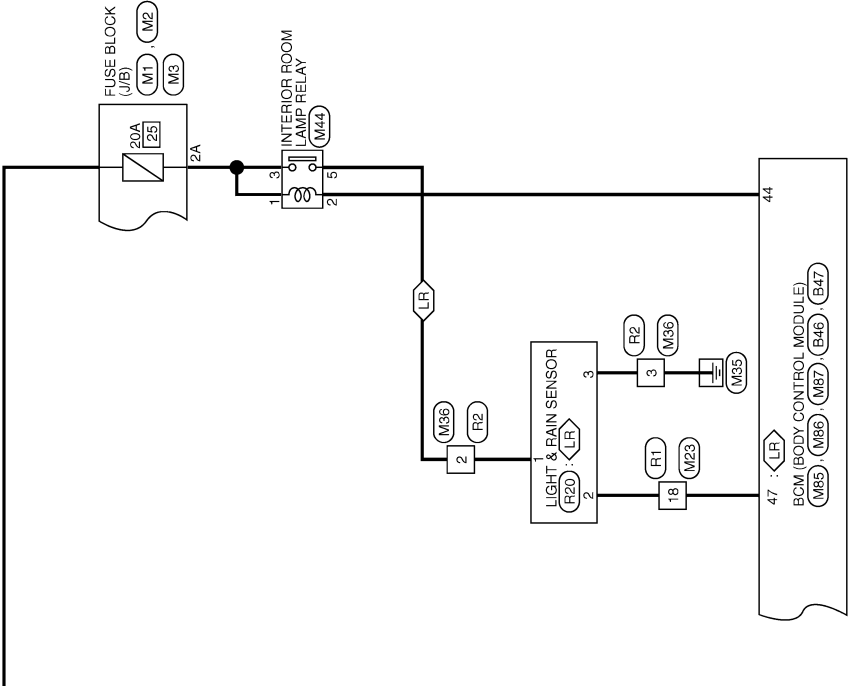


2014/03/17

JRLWD5738GB

WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >



JRLWD5739GB

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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

Connector No.	B20
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



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

Terminal No.	Color Of Wire	Signal Name [Specification]
8	LAV	-
9	LAV	-
10	LAV	-
12	LAV	-
13	SB	-
14	R	-
15	G	-
16	W	-

Connector No.	B46
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16GY-CS



127		125	124			123	122	121
136		134	133			131		129

Terminal No.	Color Of Wire	Signal Name [Specification]
121	LAV	BACK DOOR OPENER CONT
122	Y	REAR FOG LAMP OUTPUT
123	LAV	REAR WIPER OUTPUT
124	W	REAR DOOR UNLOCK OUTPUT
125	L	REAR DOOR LOCK OUTPUT
127	R	LUGGAGE ROOM LAMP CONT
129	LAV	STOP LAMP LH OUT
131	R	REAR DOOR SUPER LOCK OUTPUT
133	GR	TURN SIG LH (REAR)
134	LAV	STOP LAMP RH OUT
136	P	TURN SIG RH (REAR)

Connector No.	B47
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



20			47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1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WIPER AND WASHER SYSTEM

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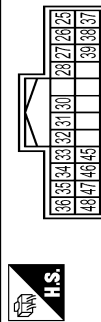
WIPER AND WASHER SYSTEM

Connector No.	E11
Connector Name	FROM ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH24FGY-NH



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

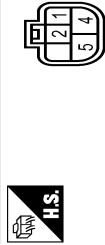
Connector No.	E12
Connector Name	FROM ER INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH24FGY-NH



Terminal No.	Color Of 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	-

45	L	-
46	P	-
47	W	-
48	R	-

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



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

Connector No.	E41
Connector Name	WASHER PUMP
Connector Type	FEA02FBL-C



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	L	-

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



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

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-C516-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
2	W	-
5	V	- [Without ISS]
5	W	- [With ISS]
9	LG	-
10	W	-
20	W	-
21	B	-
22	SHIELD	-
31	Y	-
32	W	-
33	SB	-
34	LG	-
35	BG	-
36	LG	-
37	V	-

38	G	-
39	BR	-
40	L	-
41	P	-
47	GR	-
48	SB	-
51	P	-
52	L	-
53	W	-
54	Y	-
55	BR	-
56	P	-
57	B	-
58	L	-
59	W	-
60	G	-
61	BR	-
62	V	-
63	BR	-
64	GR	-
65	LG	-
66	BG	-
67	L	-
68	R	-
71	V	-
72	L	-
73	R	-
76	L	-
77	V	-
78	LG	-
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	-

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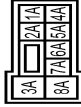
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WIPER AND WASHER SYSTEM

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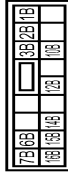
WIPER AND WASHER SYSTEM

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-M2



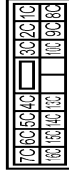
Terminal No.	Color Of Wire	Signal Name [Specification]
1A	L	-
2A	LG	-
3A	Y	-
4A	LG	-
5A	R	-
6A	BG	-
7A	BR	-
8A	SB	-

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-CS



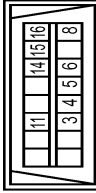
Terminal No.	Color Of Wire	Signal Name [Specification]
10B	GR	- [With MR20 engine or RSM engine]
10C	LA/GR	- [With MR20 engine or RSM engine]
10D	BR	-
10E	W	-
10F	W	-
10G	GR	-
10H	R	-
10I	V	-
10J	LX/L	-
10K	LX/V	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10C	LG	-
13C	LA/G	-
14C	R	-
15C	L	-
16C	LA/W	-
17C	R	-
2C	G	-
3C	Y	-
4C	LG	-
5C	GR	-
6C	LX/R	-
7C	Y	-
8C	BR	- [With ISS]
9C	LA/BR	- [Without ISS]

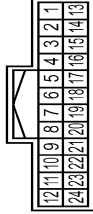
Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD06FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
8	Y	-

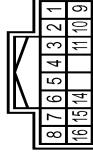
11	SB	-
14	P	-
15	BR	-
16	W	-

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
7	Y	-
8	L	-
9	R	-
13	SB	-
15	SB	-
16	GR	-
17	V	-
18	G	-
19	SB	-
20	R	-
21	B	-

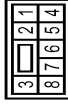
Connector No.	M31
Connector Name	COMBINATION SWITCH
Connector Type	TH06FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	INPUT 5
2	SB	OUTPUT 1
3	GR	INPUT 4

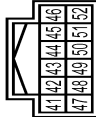
4	BG	OUTPUT 4
5	G	INPUT 3
6	W	INPUT 2
7	Y	-
8	V	-
9	G	RR WASH MOTOR
10	BR	OUTPUT 2
11	Y	FR WASH MOTOR
14	LG	IGN
15	P	OUTPUT 3
16	GR	GND

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Type	NS08FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
2	V	-
3	B	-

Connector No.	M42
Connector Name	COMBINATION METER
Connector Type	TH02FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
41	L	CANH
42	P	CANH
43	W	ILLUMINATION CONTROL SIGNAL
44	LAG	FUEL LEVEL SENSOR GROUND
45	LAG	BATTERY POWER SUPPLY

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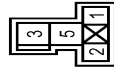
WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

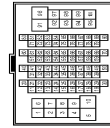
Terminal No.	Signal Name [Specification]
46	IGNITION SIGNAL [Without ISS]
47	IGNITION SIGNAL [With ISS]
48	AV COMMUNICATION SIGNAL (H)
49	AV COMMUNICATION SIGNAL (L)
50	OIL LEVEL SENSOR SIGNAL
51	OIL LEVEL SENSOR GROUND
52	FUEL LEVEL SENSOR SIGNAL
53	FUEL LEVEL SENSOR GROUND

Connector No.	Connector Name	Connector Type
M44	INTERIOR ROOM LAMP RELAY	MS02EL-M2-LC



Terminal No.	Signal Name [Specification]
1	LG
2	P
3	LG
5	V

Connector No.	Connector Name	Connector Type
M77	WIPE TO WIRE	TH60MW-CS16-TM4



Terminal No.	Signal Name [Specification]
2	LAR
5	V
8	W
9	G
10	R

Terminal No.	Signal Name [Specification]
20	W
21	B
22	SHIELD
31	V
32	GR
33	G
34	LG
35	BG
36	LG
37	V
38	G
39	BR
40	L
41	P
47	Y
48	BG
51	GR
52	SB
53	R
54	LAL
55	BR
56	P
57	B
58	L
59	W
60	LAR
61	P
62	V
63	LAR
64	Y
65	GR
66	BG
67	L
68	R
71	V
72	L
73	Y
76	L
77	V
78	LG
79	SHIELD
80	L
82	LAL
83	LG
84	SB
85	G
86	B
87	Y
88	B

Terminal No.	Signal Name [Specification]
91	L
92	W
96	LG
97	BR
98	V
99	R

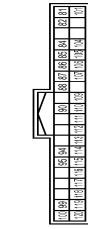


Connector No.	Connector Name	Connector Type
M85	BCM (BODY CONTROL MODULE)	NS16FBR-CS



Terminal No.	Signal Name [Specification]
137	W
138	SB
139	L
141	V
143	LAV
144	BG
145	GR
146	B
147	B
148	G
149	W
151	R
152	LG

Connector No.	Connector Name	Connector Type
M86	BCM (BODY CONTROL MODULE)	TH40FB-NH



Terminal No.	Signal Name [Specification]
81	L
82	LAR
83	W
84	BR
85	SB
86	P
87	BG
88	W
90	Y
94	G
95	V
99	R
100	V
101	Y
104	R
105	Y
106	W
107	V
109	P
110	BG
111	R
112	SB
113	LG
114	Y
115	W
116	BG
117	GR
118	P
119	P
120	BR

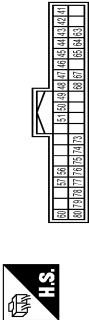
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WIPER AND WASHER SYSTEM

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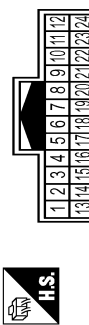
WIPER AND WASHER SYSTEM

Connector No.	M87
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
41	V	STEERING LOCK UNIT POWER SUPPLY
42	LA/G	TURN SIG LH (SIDE)
43	LAY	TURN SIG RH (SIDE)
44	P	INTERIOR ROOM LAMP RELAY CONT
45	R	CAN-L
46	L	CAN-H
47	G	LIGHT & RAIN SENSOR
48	L	CAN-L
49	R	CAN-H
50	BG	DOOR LOCK SW
51	Y	HAZARD SW
56	P	DONGLE
57	L	CVT SHIFT SELECT (DETENT SW) PWR
60	R	HEADLAMP WASHER SW
63	G	POWER WINDOW RELAY CONT
64	LA/R	REAR WINDOW DEFROGGER RELAY CONT
65	BR	ACC RELAY CONT
67	Y	IGN RELAY (FIB) 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

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
3	-	-
7	-	-
8	-	-
9	-	-
13	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-
21	-	-

Connector No.	R2
Connector Name	WIRE TO WIRE
Connector Type	NS08MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
2	-	-
3	-	-
4	B	-

Connector No.	R20
Connector Name	LIGHT & RAIN SENSOR
Connector Type	JAEB03FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

HEADLAMP WASHER SYSTEM

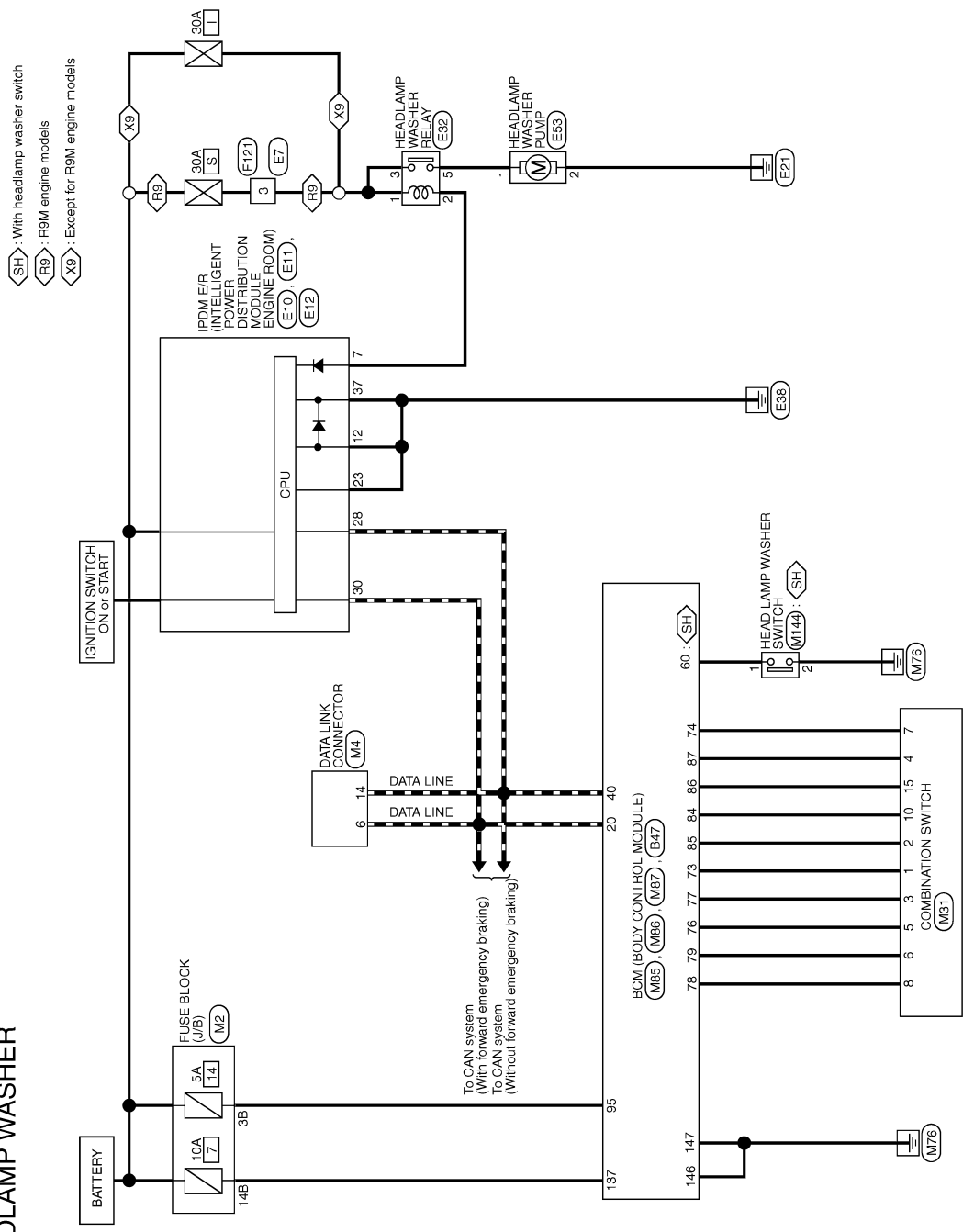
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HEADLAMP WASHER SYSTEM

Wiring Diagram

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HEADLAMP WASHER



2014/03/17

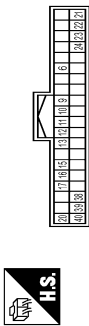
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HEADLAMP WASHER SYSTEM

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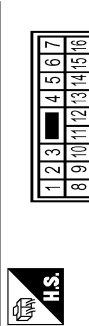
HEADLAMP WASHER

Connector No.	E47
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



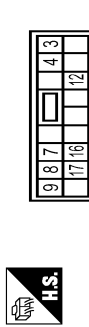
Terminal No.	Color Of Wire	Signal Name [Specification]
6	R	BACK DOOR OPENER REQUEST SW
9	G	HANDS FREE SENSOR
10	W	REAR RH DOOR SW
11	LG	BACK DOOR SW
12	R	REAR LH DOOR SW
13	SB	PASSENGER DOOR SW
15	LAG	REAR WIPER AUTO STOP
16	Y	BACK DOOR OPENER SW
17	SB	DRIVER DOOR SW
20	L	CANH
21	BR	BUMPER ANTENNA(-)
22	Y	REAR ANTENNA(+)
23	L	REAR ANTENNA(+)
24	G	BUMPER ANTENNA(+)
38	V	SIREN
39	LAW	HIGH-MOUNTED STOP LAMP
40	P	CANH

Connector No.	E7
Connector Name	WIRE TO WIRE
Connector Type	NS16MBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	- [With MR20 or QR25 engine]
2	BR	- [With MR20 or QR25 engine]
3	G	- [With R3M engine]
4	R	- [With R3M engine]
5	B	- [With MR20 engine]
5	L	- [With R3M engine]
5	LG	- [With QR25 engine]
6	BG	-
7	G	-
8	V	- [With MR20 engine or R3M engine]
9	W	- [With QR25 engine]
9	BG	- [With R3M engine]
9	BR	- [With MR20 engine]
10	BR	-
11	Y	-
12	L	- [With R3M engine]
12	LG	- [With QR25 engine]
13	BR	- [With MR20 or QR25 engine]
13	R	- [With R3M engine]
15	L	-
16	SB	-

Connector No.	E10
Connector Name	FROM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS16FGY-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
3	P	-
4	Y	-
7	L	-
8	BG	-
9	L	-
12	B	-
16	G	-
17	W	-

Connector No.	E11
Connector Name	FROM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	renault_243405408R



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

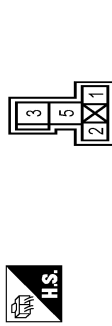
Connector No.	E12
Connector Name	FROM E/R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH24FGY-NH



Terminal No.	Color Of 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	-
45	L	-
46	P	-
47	W	-
48	R	-

Connector No.	E32
Connector Name	HEADLAMP WASHER RELAY
Connector Type	MS02FL-M2-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	L	-
3	G	-
5	GR	-

Connector No.	E53
Connector Name	HEADLAMP WASHER PUMP
Connector Type	YE202FDGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	GR	-

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HEADLAMP WASHER SYSTEM

< WIRING DIAGRAM >

HEADLAMP WASHER

Connector No.	F121
Connector Name	WIRE TO WIRE
Connector Type	NS16BRC-3



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

Terminal No.	Color	Wire	Signal Name [Specification]
1	B	-	[With MR20 or QR25 engine]
2	P	-	[With R3M engine]
3	GR	-	[With QR25 engine]
4	Y	-	[With MR20 engine]
5	G	-	[With R3M engine]
6	GR	-	[With MR20 engine]
7	B	-	[With QR25 engine]
8	W	-	[With MR20 engine]
9	L	-	[With R3M engine]
10	LG	-	[With QR25 engine]
11	V	-	[With MR20 engine]
12	GR	-	[With R3M engine]
13	Y	-	[With QR25 engine]
14	P	-	[With MR20 engine]
15	B	-	[With R3M engine]
16	LG	-	[With QR25 engine]

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16BRC-3



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

Terminal No.	Color	Wire	Signal Name [Specification]
10B	GR	-	[With MR20 engine or R3M engine]
12B	LA	GR	-
14B	W	-	[With QR25 engine]
16B	W	-	[With R3M engine]
18B	GR	-	[With MR20 engine]
20B	R	-	[With QR25 engine]
22B	V	-	[With MR20 engine]
24B	L	-	[With R3M engine]
26B	LA	-	[With QR25 engine]
28B	W	-	[With MR20 engine]

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



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

Terminal No.	Color	Wire	Signal Name [Specification]
3	LG	-	-
4	B	-	-
5	B	-	-
6	L	-	-
7	Y	-	-
8	Y	-	-
9	SB	-	-
10	P	-	-
11	BR	-	-
12	BR	-	-
13	BR	-	-
14	BR	-	-
15	BR	-	-
16	W	-	-

Connector No.	M31
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH



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

Terminal No.	Color	Wire	Signal Name [Specification]
1	LG	-	INPUT 5
2	SB	-	OUTPUT 1
3	GR	-	INPUT 4
4	GR	-	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
12	LG	-	IGN
13	P	-	OUTPUT 3
14	GR	-	GND
15	GR	-	-
16	GR	-	-

Connector No.	M85
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16BRC-3



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

Terminal No.	Color	Wire	Signal Name [Specification]
137	W	-	BAT POWER SUPPLY (FUSE)
138	SB	-	INT ROOM LAMP CONT
139	V	-	PASSENGER DOOR UNLOCK OUTPUT
140	Y	-	FRONT DOOR LOCK OUTPUT
141	P	-	POWER SUPPLY (FR DOOR LK ACT)
142	LA	-	-
143	LA	-	-
144	BG	-	POWER SUPPLY (TURN SIGNAL)

145	GR	-	POWER SUPPLY (STOP LAMP)
146	B	-	GROUND
147	B	-	GROUND
148	G	-	DRIVER DOOR UNLOCK OUTPUT
149	R	-	FRONT DOOR SUPERLOCK OUTPUT
150	W	-	POWER SUPPLY (REAR DOOR LK ACT)
151	LG	-	POWER SUPPLY (REAR WIPER)

Connector No.	M86
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH16FW-NH



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

Terminal No.	Color	Wire	Signal Name [Specification]
81	L	-	KEY SWITCH
82	W	-	PASS DOOR REQ SW (with intelligent key)
83	BR	-	COMBI SW OUTPUT 2
84	BR	-	COMBI SW OUTPUT 1
85	SB	-	COMBI SW OUTPUT 3
86	P	-	COMBI SW OUTPUT 4
87	BG	-	PUSH-BTN IGN SW ILL CONT
88	W	-	SIL CONDITION
89	Y	-	DETENTION SW
90	G	-	EXTENDED STORAGE FUSE SW
91	V	-	STOP/START OFF SW
92	R	-	DRIVER DOOR ANT +
93	Y	-	PUSH SW
94	R	-	DR DOOR UNLK SENS
95	Y	-	DR DOOR REQ SW
96	W	-	ACC OUTPUT
97	V	-	SENSOR CANCEL SW
98	P	-	NATS ANTENNA AMP
99	BG	-	DIMMER SIGNAL
100	R	-	DOOR LK STAT IND OUTPUT
101	SB	-	STOP/START OFF SW INDICATOR
102	LG	-	NATS ANTENNA AMP
103	Y	-	NATS ANTENNA AMP
104	W	-	NATS ANTENNA AMP
105	BG	-	ROOM ANT 1 -
106	GR	-	ROOM ANT 1 +

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HEADLAMP WASHER SYSTEM

< WIRING DIAGRAM >

HEADLAMP WASHER

118	SB	PASSENGER DOOR ANT -
119	P	PASSENGER DOOR ANT +
120	BR	RRIVER DOOR ANT +

Connector No.	M87
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FGY-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
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Terminal No.	Color Of Wire	Signal Name [Specification]
41	V	STEERING LOCK UNIT POWER SUPPLY
42	LAG	TURN SIG LH (SIDE)
43	LAV	TURN SIG RH (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	DONGLE
57	L	CVT SHIFT SELECT (DETENT SW) PWR
60	R	HEADLAMP WASHER SW
63	G	POWER WINDOW RELAY CONT.
64	LAR	REAR WINDOW DEFROGGER RELAY CONT.
65	BR	ACC RELAY CONT.
67	Y	IGN RELAY (FIB) CONT. OUTPUT
68	LAW	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

Connector No.	M144
Connector Name	HEADLAMP WASHER SWITCH
Connector Type	TH08FTV-NH



1	2	3	4
---	---	---	---

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	B	-

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

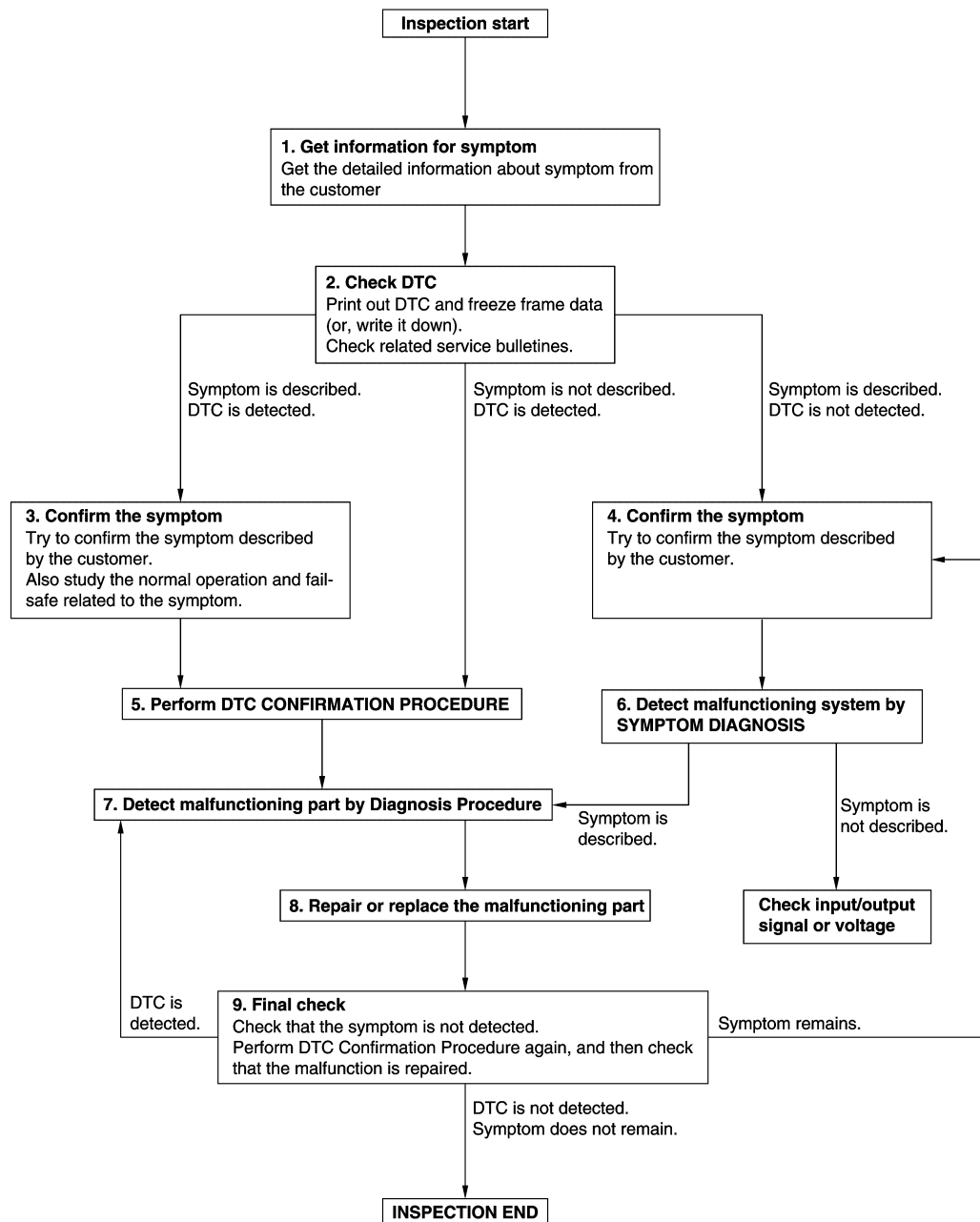
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000010785426

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"](#).

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.

>> 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.

Is DTC detected and does symptom remain?

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

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

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.

WW

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000010785429

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:000000010785430

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

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

RHD

(+) Front wiper motor		(-)	Condition		Voltage
Connector	Terminal				
E20	4	Ground	FRONT WIPER	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

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

RHD

(+)		(-)	Voltage
Front wiper motor			
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.

FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000010785433

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

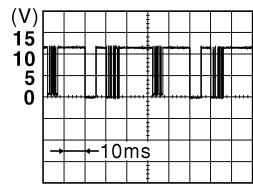
Is the inspection result normal?

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	Terminal			
M87	47	Ground	Ignition switch ON	<div><p>JPMIA0156GB Approx. 8.7V</p></div>

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.

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				
D178	1	Ground	Rear wiper switch	ON	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.

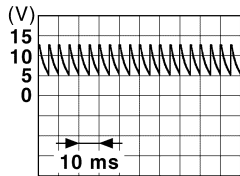
NO >> Refer to [WW-66](#), "Diagnosis Procedure".

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.

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

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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".	A
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:000000010957662

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:000000010957663

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.

(+)		(-)	Voltage (Approx.)
Headlamp washer relay			
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
IPDM E/R					
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.

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 switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-119, "Symptom Table" .
		<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R DATA MONITOR "FR WIP REQ"
	LO only	<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"> 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" .
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R DATA MONITOR "FR WIP REQ"
	AUTO only	<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"> Light & rain sensor Harness between light & rain sensor and BCM BCM 	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" .
	Rear wiper does not operate even when shift position is "R".	Check the wiper setting Refer to WW-29, "WIPER : CONSULT Function - WIPER" .	
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 	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:000000010957666

NOTE:

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

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Front wiper does not operate	HI only	<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"> 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 <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R Data monitor "FR WIP REQ"
	LO and INT	<ul style="list-style-type: none"> 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" .
	LO only	<ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM 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"
	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" .
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R Data monitor "FR WIP REQ"
	HI, LO and INT	SYMPTOM DIAGNOSIS Refer to WW-80, "Diagnosis Procedure" .	
	Front wiper does not stop	<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	—
		<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	—
		<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	—

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	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	—
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 	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" .
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".	Check the wiper setting. Refer to WW-29, "WIPER : CONSULT Function - WIPER" .	

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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 	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.

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

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

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

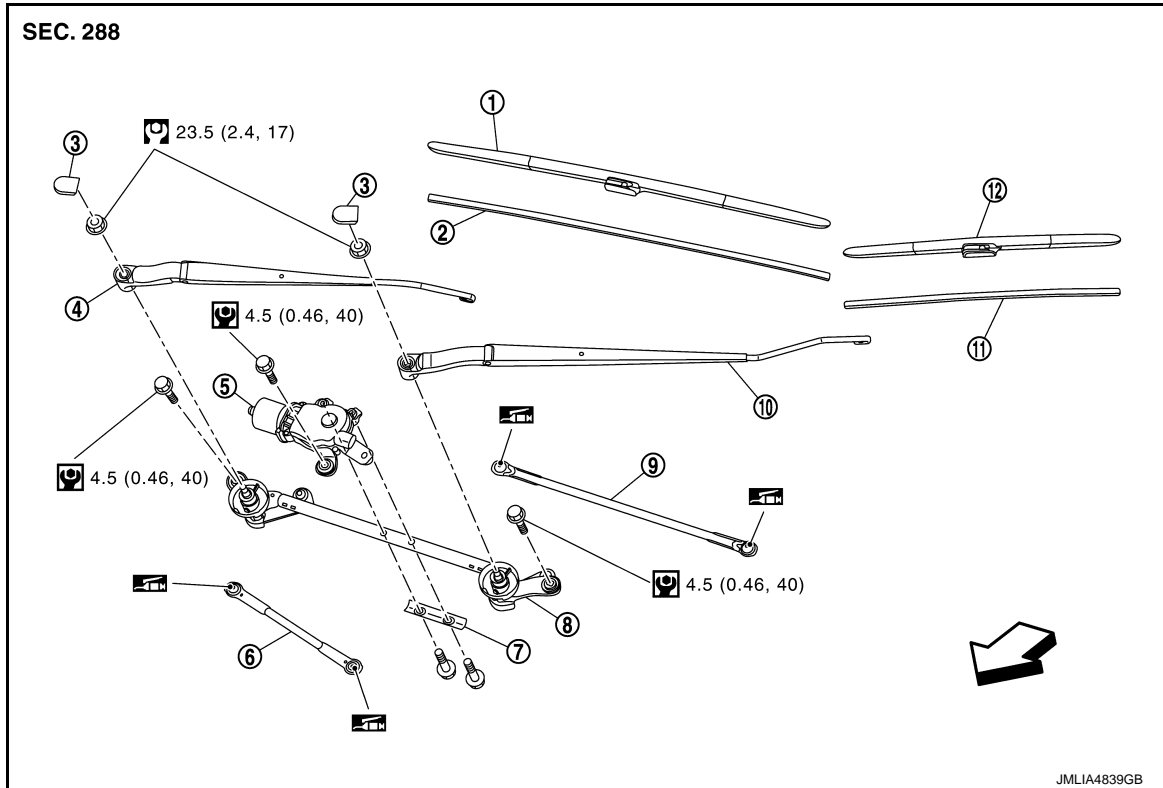
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

FRONT WIPER

Exploded View

INFOID:0000000010785446



JMLIA4839GB

- | | | |
|-------------------------------|-------------------------|---------------------------|
| 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

: N·m (kg-m, in-lb)

: 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:

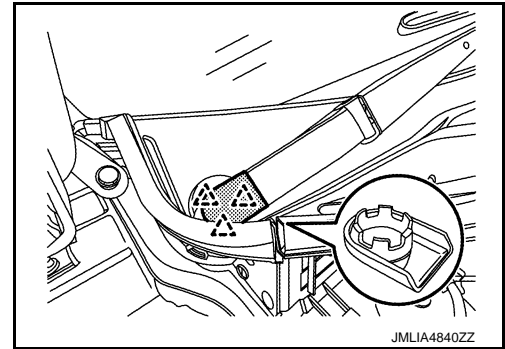
Before opening hood assembly, check that front wipers are in auto stop position.

FRONT WIPER

< REMOVAL AND INSTALLATION >

- Remove front wiper arm cap.

△ : pawl



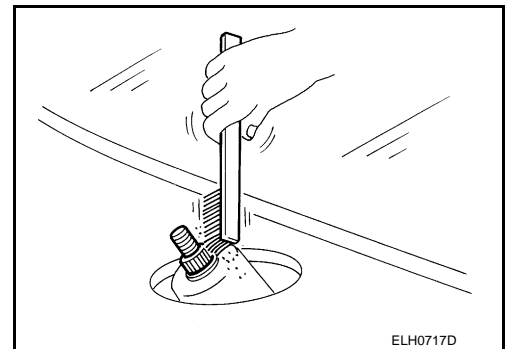
- Remove front wiper arm mounting nut, and then remove front wiper arm.

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.



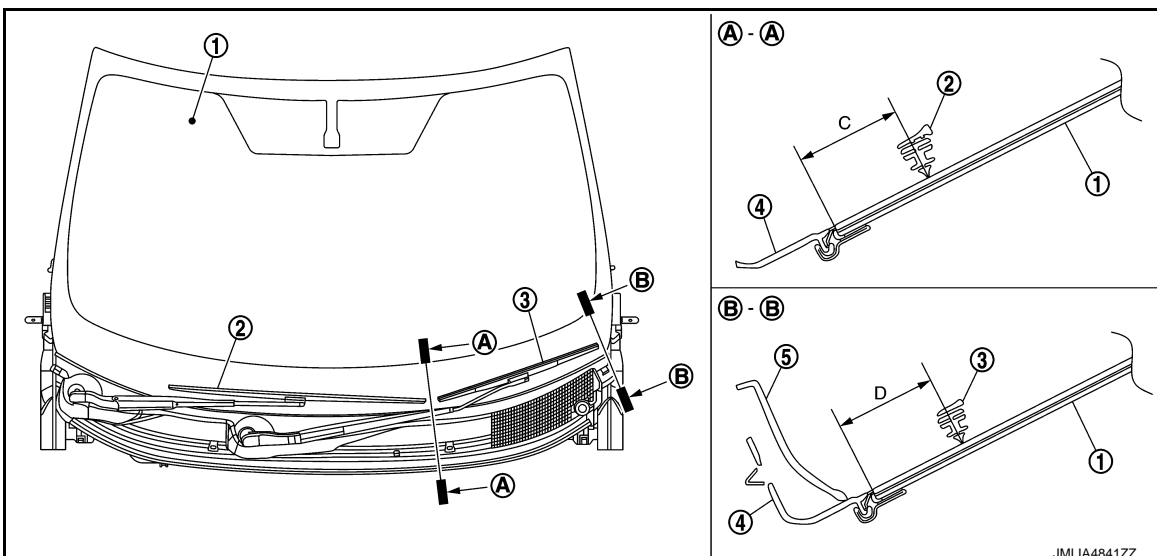
- When installing front wiper arm, install so that it is within the standard. For the standard, refer to [WW-83, "WIPER ARM : Adjustment"](#).
- After installation, operate front wiper, and then check that front wiper blades stop at the specified position. Refer to [WW-83, "WIPER ARM : Adjustment"](#).

WIPER ARM : Adjustment

INFOID:0000000010785448

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

FRONT WIPER

< REMOVAL AND INSTALLATION >

Standard clearance

C : $34.88 \pm 7.5 \text{ mm}$ ($1.37 \pm 0.30 \text{ in}$)

D : $38.20 \pm 7.5 \text{ mm}$ ($1.50 \pm 0.30 \text{ in}$)

WIPER BLADE

WIPER BLADE : Removal and Installation

INFOID:000000010785449

CAUTION:

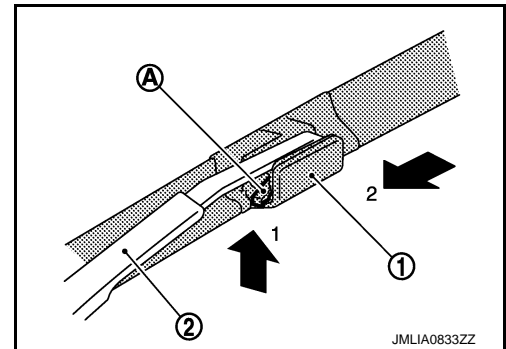
Clean the windshield glass and front wiper refill so that the windshield glass may not be damaged by dust, etc.

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 ② according to the numerical order 1→2 as shown in the figure from front wiper arm ③.

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.

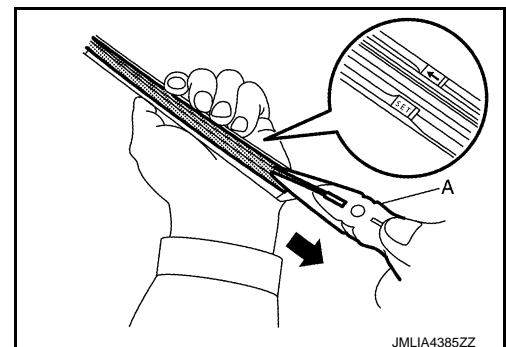
WIPER REFILL

WIPER REFILL : Removal and Installation

INFOID:000000010785450

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.

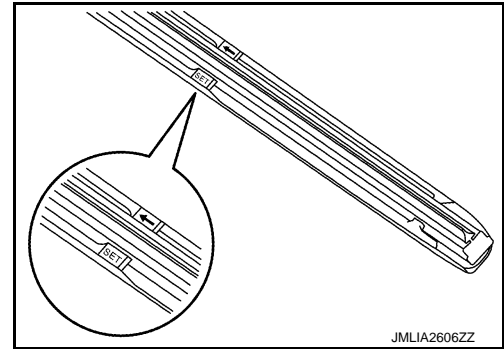


INSTALLATION

FRONT WIPER

< REMOVAL AND INSTALLATION >

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

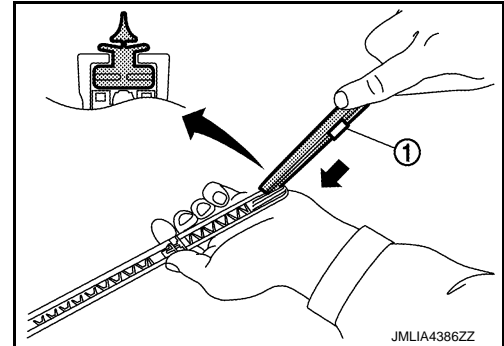


2. Pass through pawl of front wiper blade in the groove of front wiper refill.

NOTE:

Remove holder ①* at last procedure.

*: Attached to service parts.

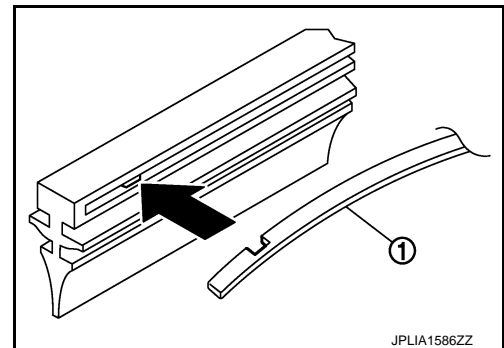


3. Engage front wiper refill stopper hole, and front wiper blade pawl with imprinted "SET" mark ("←" mark).
4. Check the following items after installing.
 - Front wiper refill thoroughly fits in the pawl on front wiper blade.
 - Front wiper refill is not deformed (waving / tucking).

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.



WIPER DRIVE ASSEMBLY

WIPER DRIVE ASSEMBLY : Removal and Installation

INFOID:000000010785451

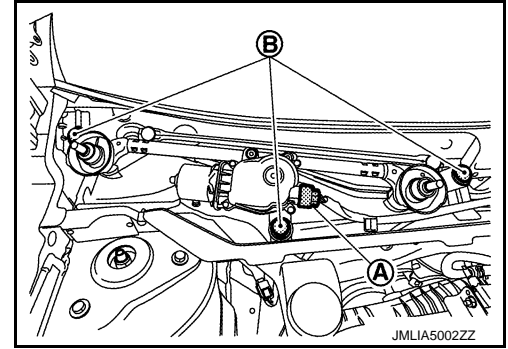
REMOVAL

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:000000010785452

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.**

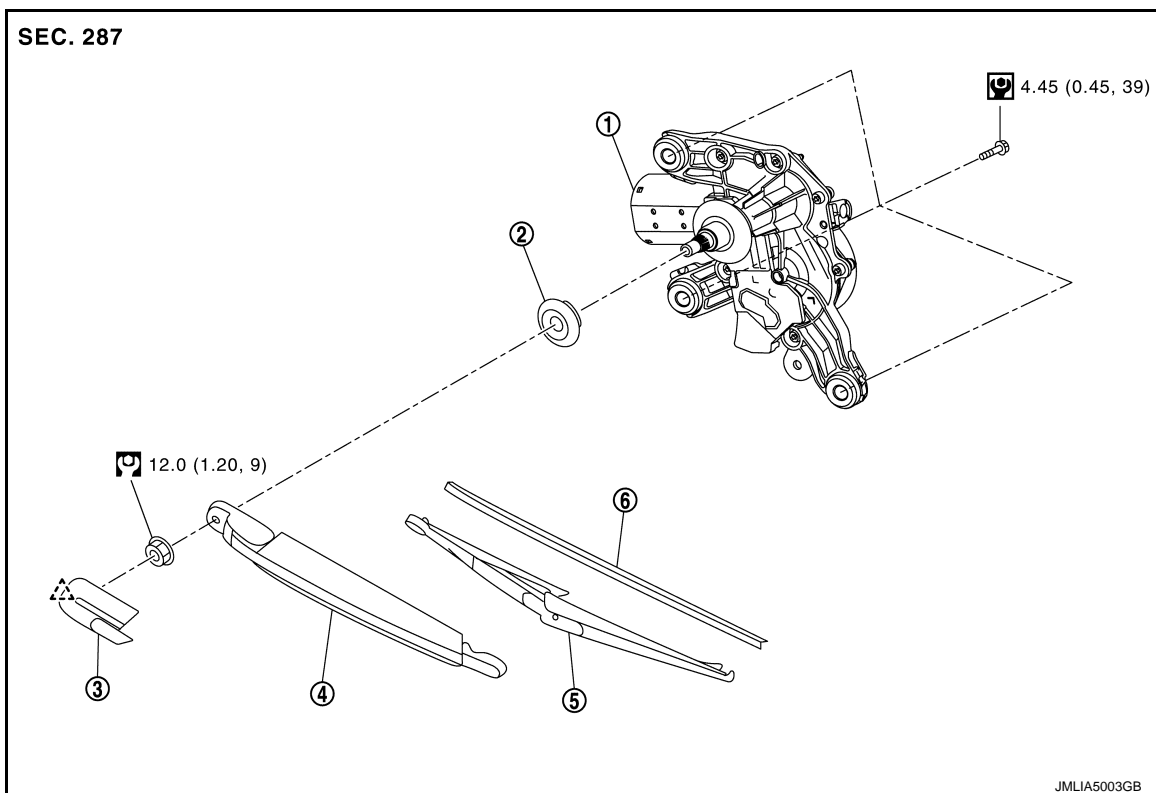
REAR WIPER

< REMOVAL AND INSTALLATION >

REAR WIPER

Exploded View

INFOID:0000000010785453



① Rear wiper motor assembly

② Pivot seal

③ Rear wiper arm cover

④ Rear wiper arm

⑤ Rear wiper blade

⑥ Rear wiper refill

△ : Pawl

⊙ : N·m (kg-m, in-lb)

⊙ : N·m (kg-m, ft-lb)

WIPER ARM

WIPER ARM : Removal and Installation

INFOID:0000000010785454

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.

REMOVAL

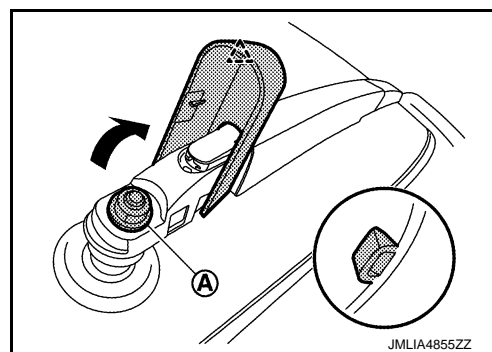
1. Operate rear wiper to the auto stop position.

REAR WIPER

< REMOVAL AND INSTALLATION >

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

△ : Pawl



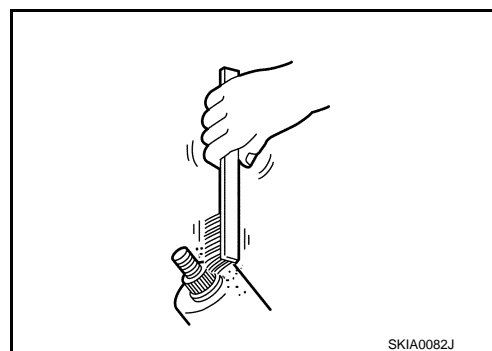
- Pull up rear wiper arm, and then remove rear wiper arm from vehicle.

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.



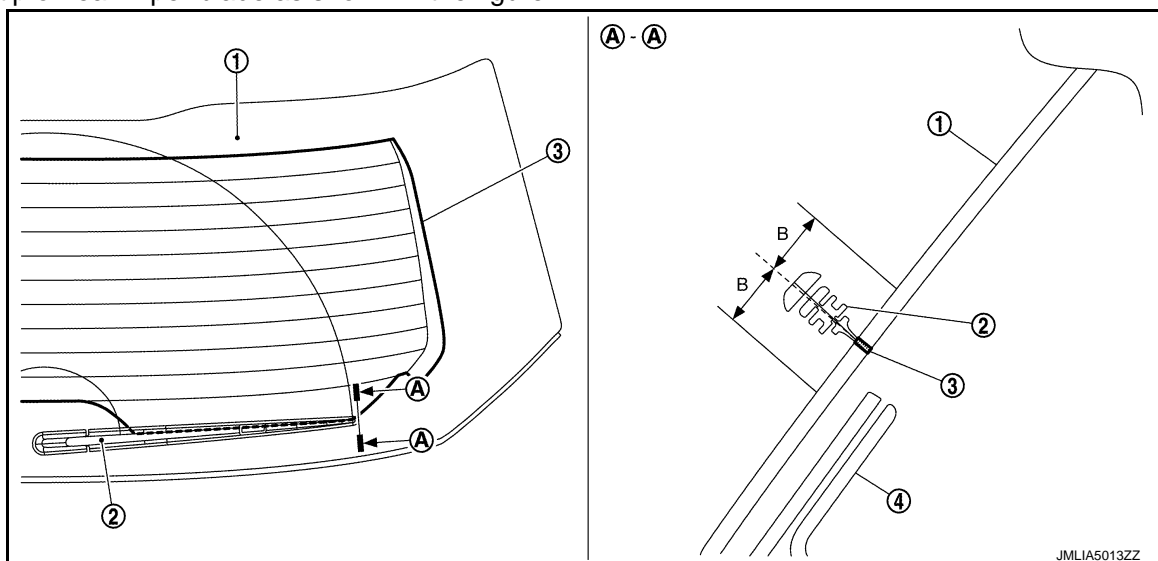
- When installing rear wiper arm, install so that it is within the standard. For the standard, refer to [WW-88, "WIPER ARM : Adjustment"](#).
- After installation, operate rear wiper, and then check that the rear wiper blade stop at the specified position. Refer to [WW-88, "WIPER ARM : Adjustment"](#).

WIPER ARM : Adjustment

INFOID:0000000010785455

REAR WIPER ARM POSITION ADJUSTMENT

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



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)

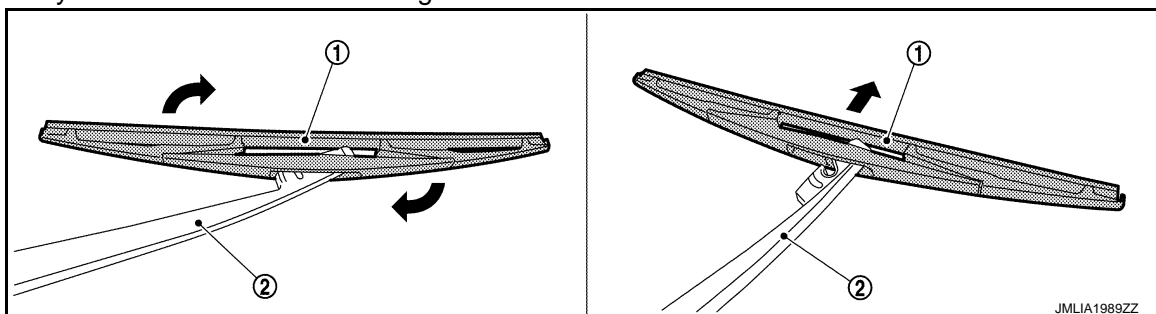
WIPER BLADE

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.

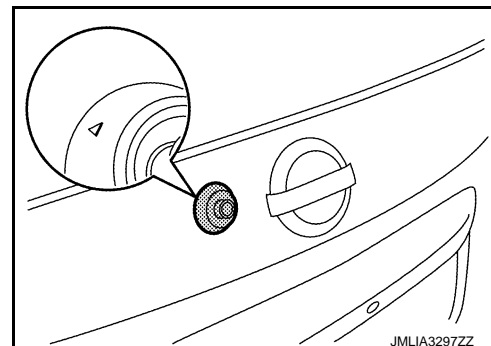
5. Remove pivot seal from back door panel.

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.



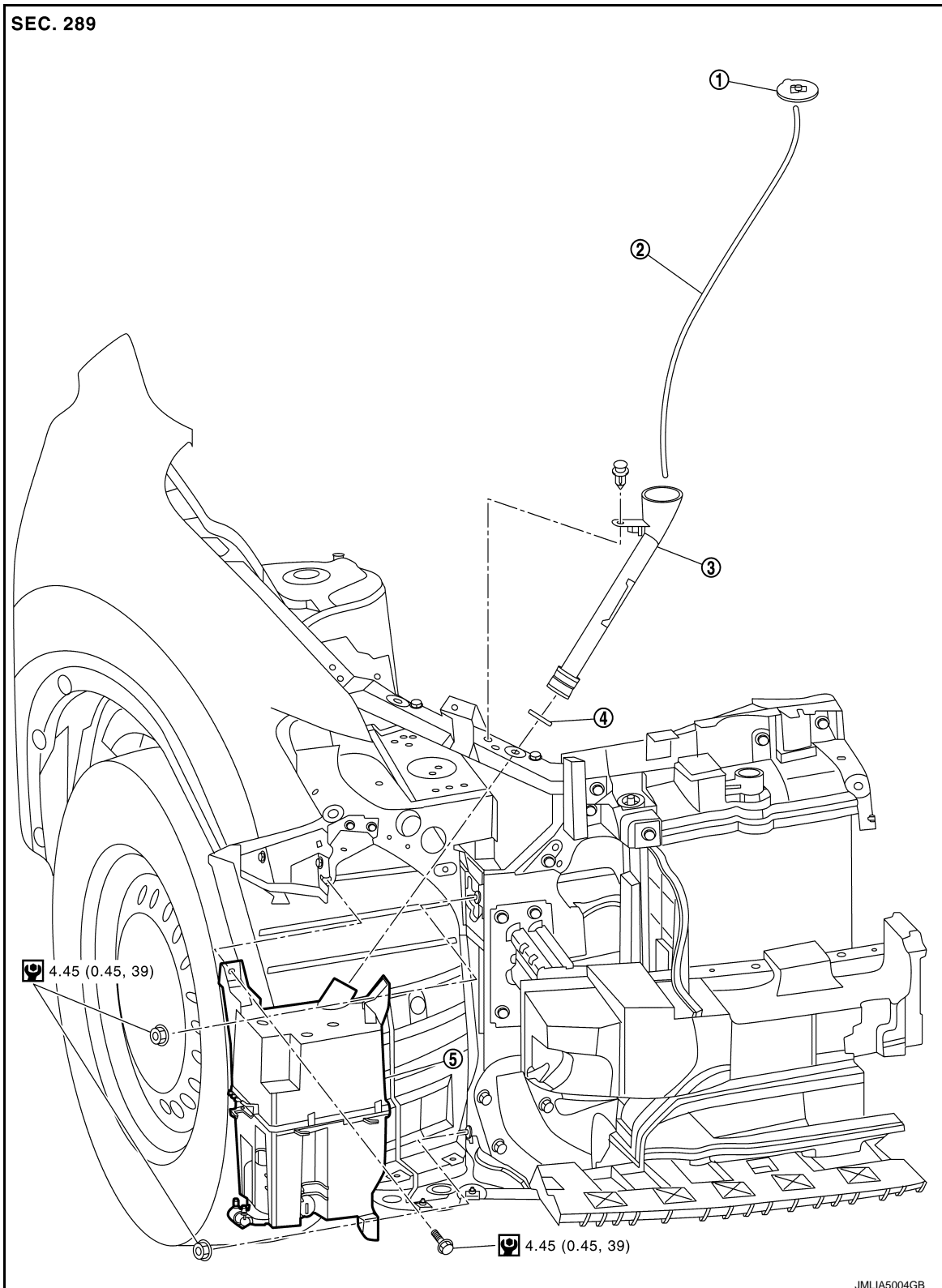
WASHER TANK

< REMOVAL AND INSTALLATION >

WASHER TANK

Exploded View

INFOID:000000010785458



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

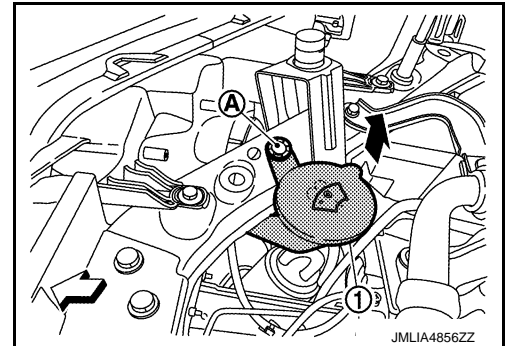
CAUTION:

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.

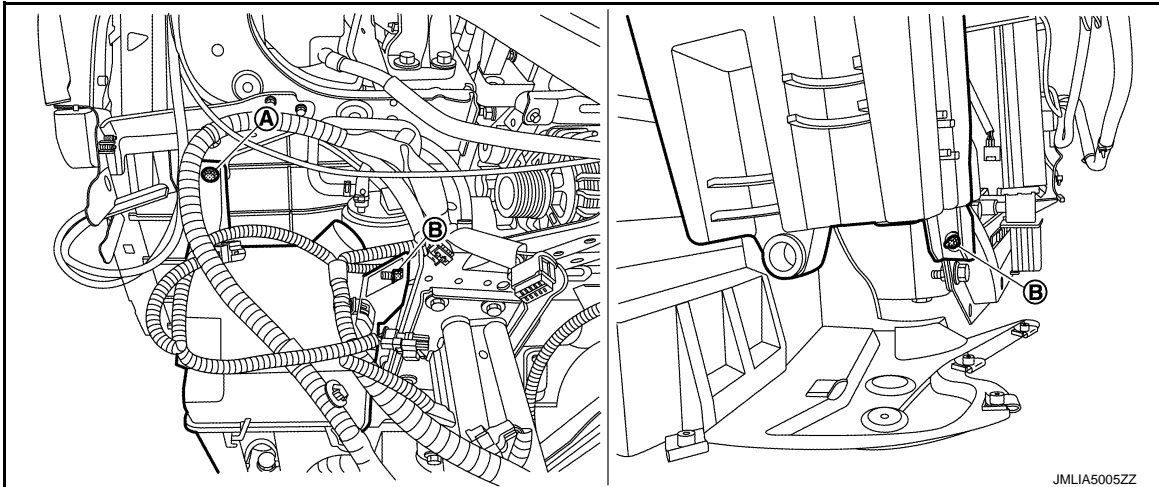
REMOVAL

1. Fully open hood assembly.
2. Remove washer tank inlet ① fixing clip ④.
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 ① and nuts ②.



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.

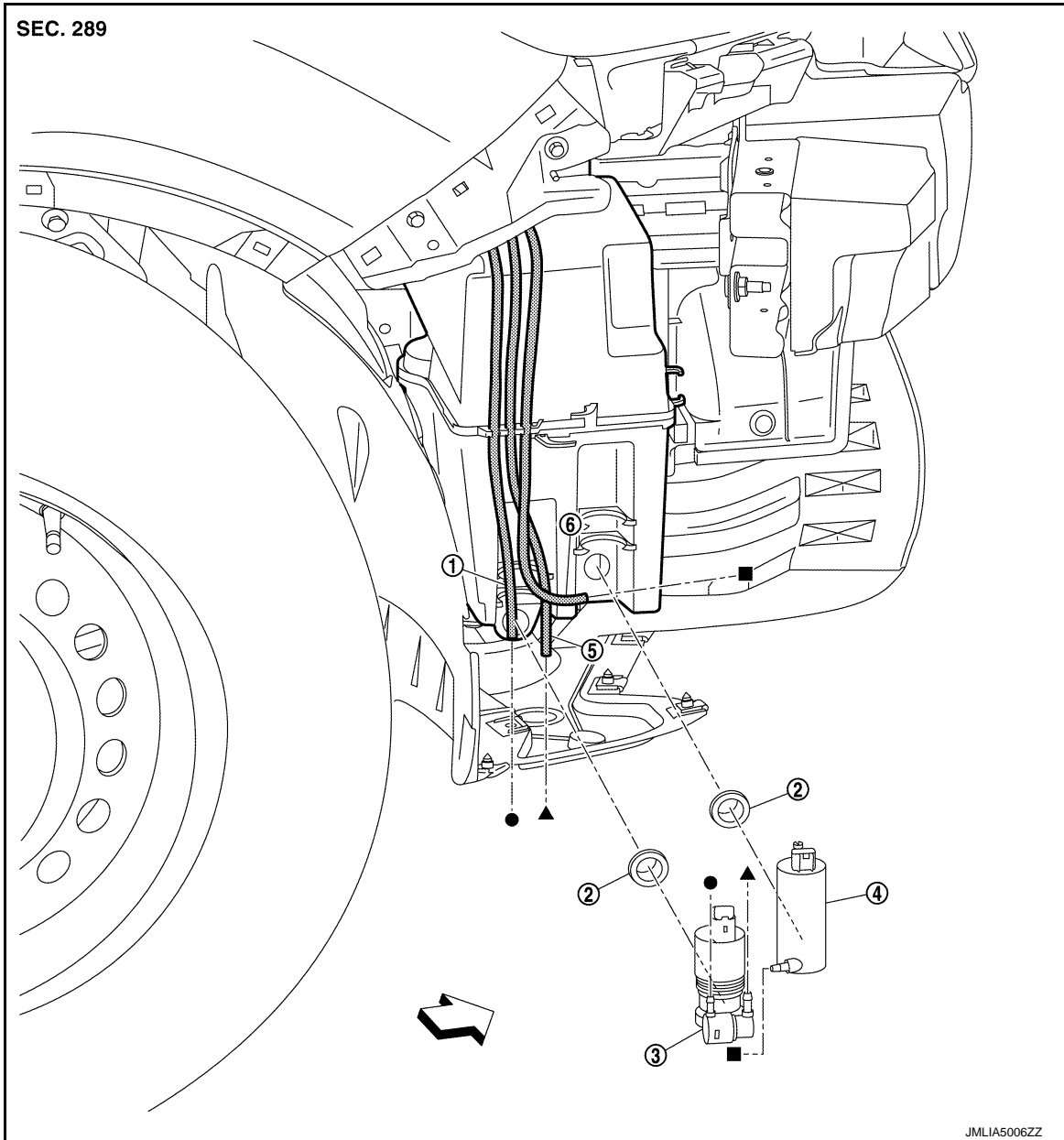
WASHER PUMP

< REMOVAL AND INSTALLATION >

WASHER PUMP

Exploded View

INFOID:000000010785460



- | | | |
|---|---------------------|--|
| 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:000000010785461

REMOVAL

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

WASHER PUMP

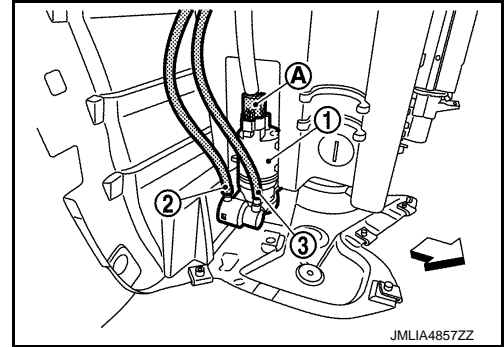
< REMOVAL AND INSTALLATION >

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

NOTE:

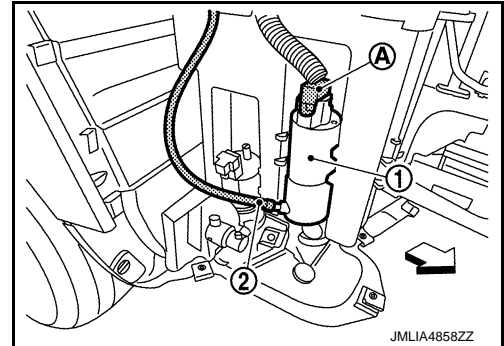
Apply a marking either on front washer tube or rear washer tube when removing them so that the positions can be identified for installation.

⇐ : Vehicle front



3. Disconnect harness connector ① 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

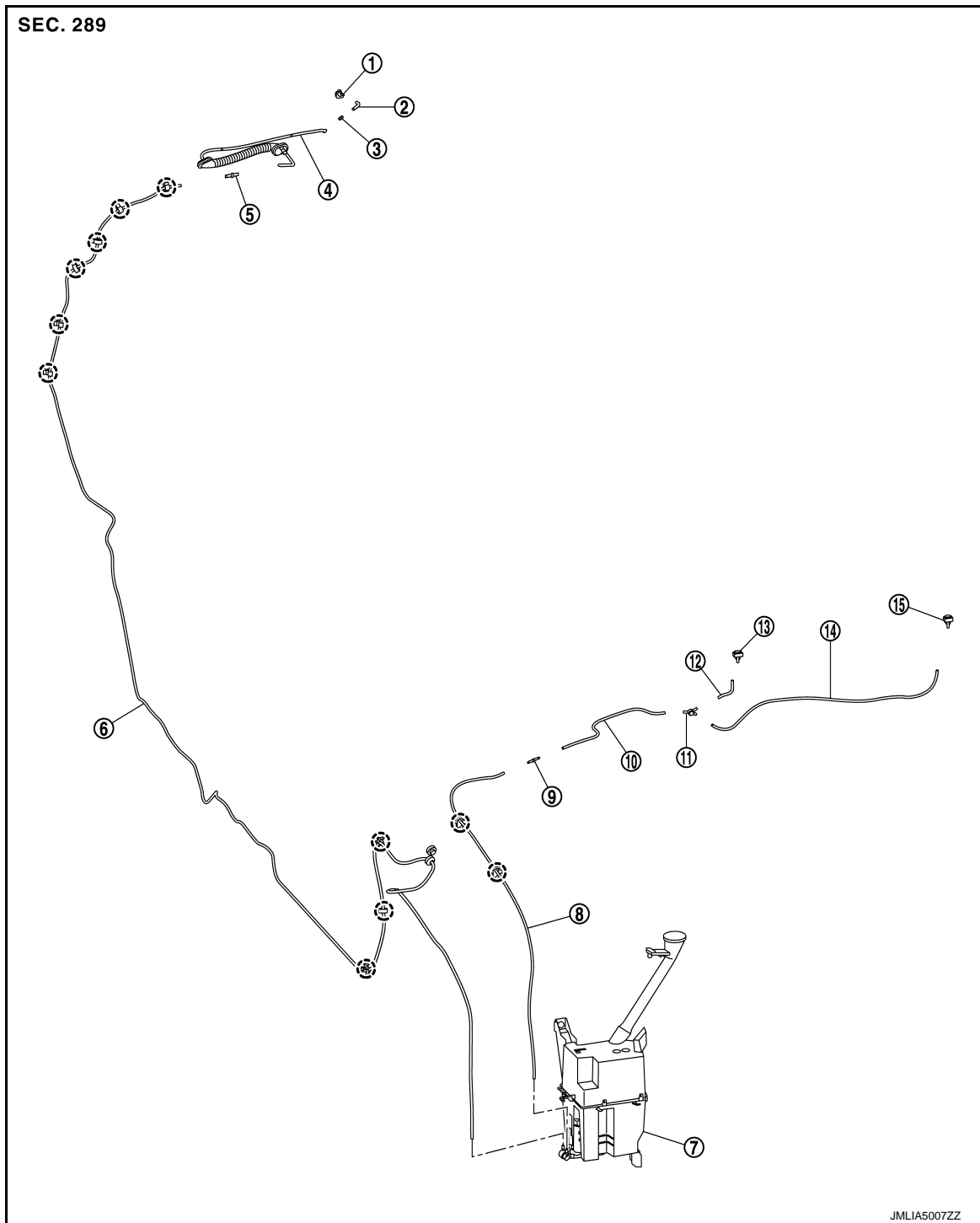
< REMOVAL AND INSTALLATION >

WASHER NOZZLE AND TUBE

Exploded View

INFOID:000000010785462

WITHOUT AROUND VIEW MONITOR SYSTEM



① Rear washer nozzle

④ Rear washer tube B

⑦ Washer tank

⑩ Front washer tube B

② Rear washer tube C

⑤ Joint

⑧ Front washer tube A

⑪ Check valve

③ Joint

⑥ Rear washer tube A

⑨ Joint

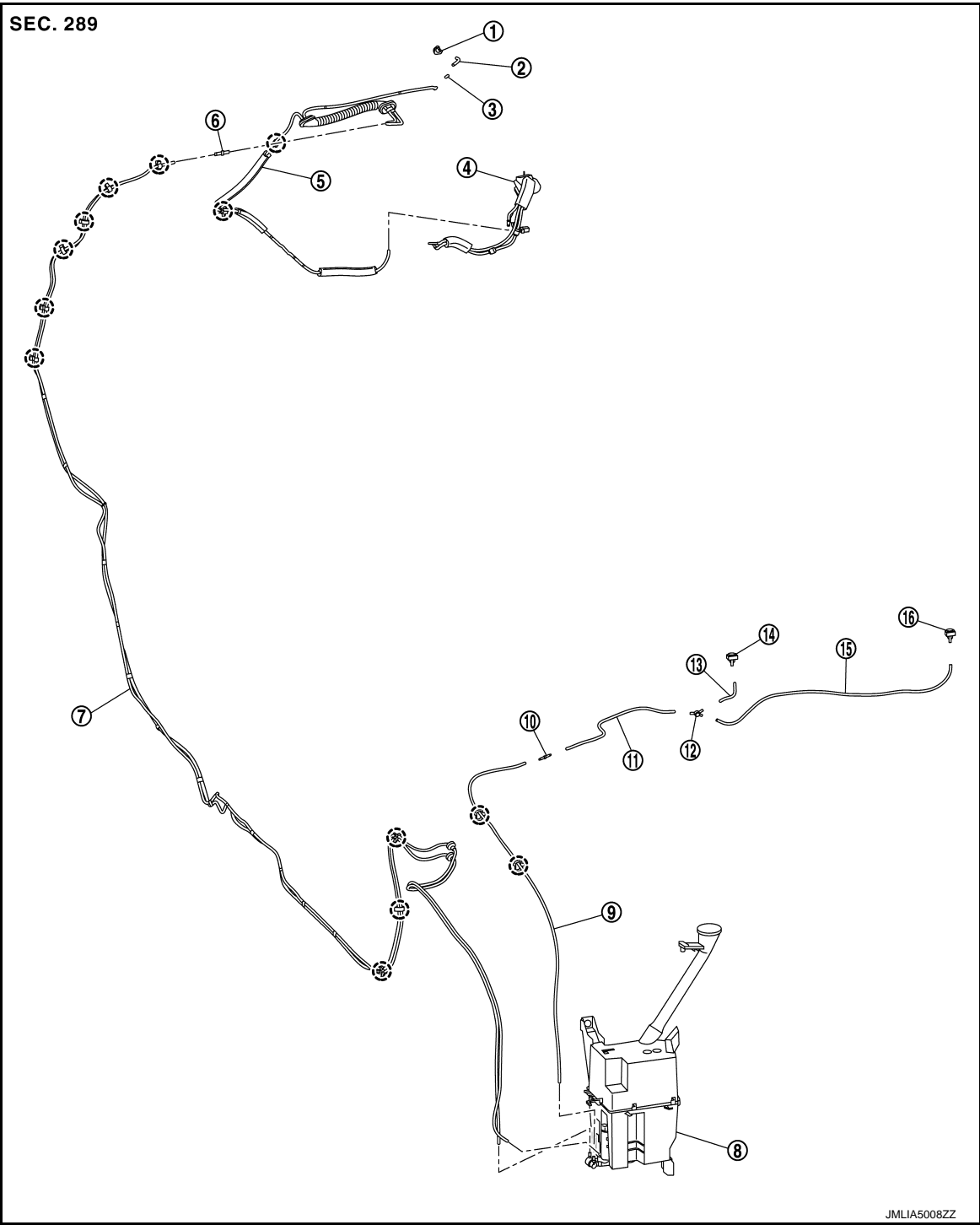
⑫ Front washer tube C

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 >

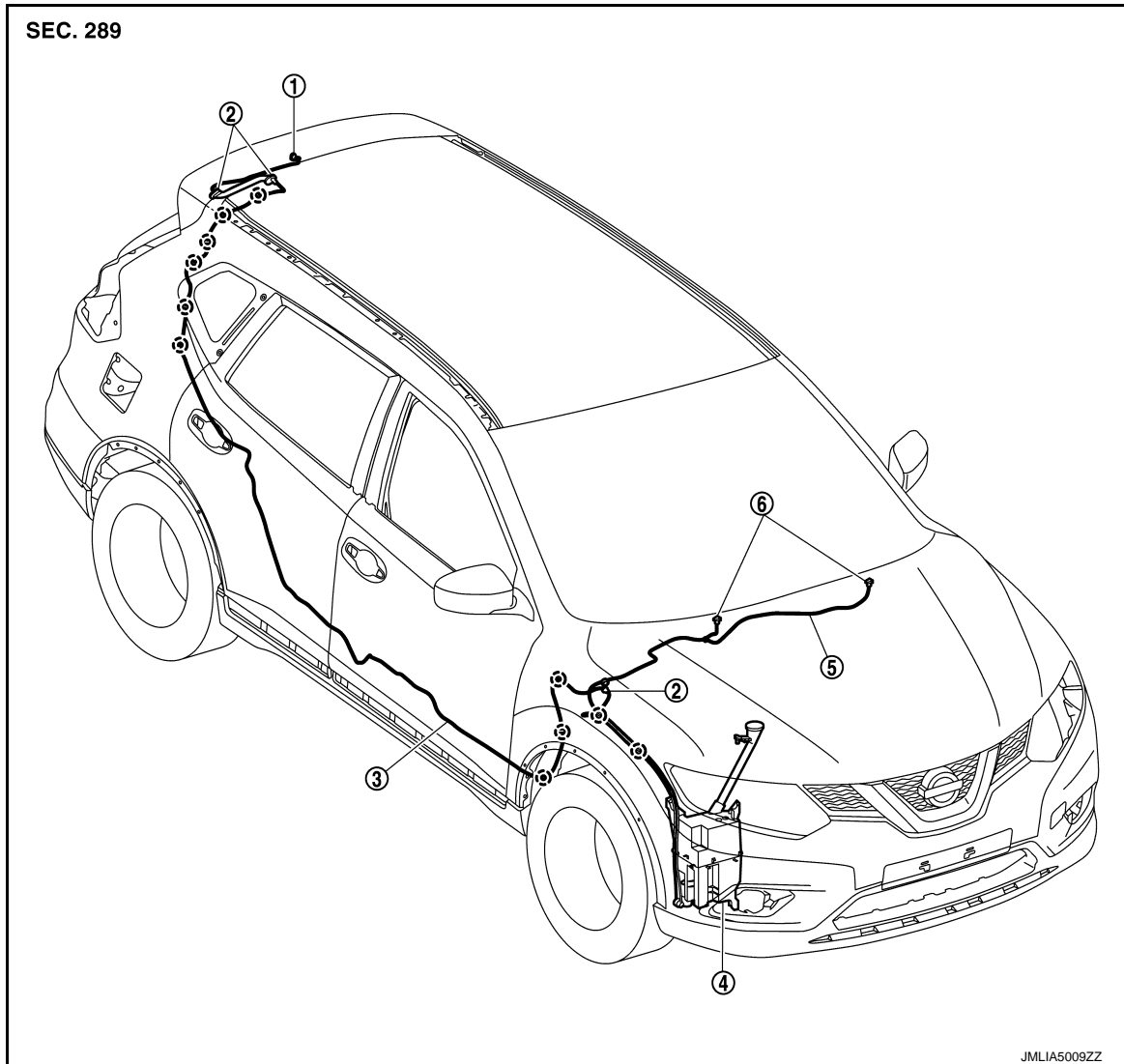
⑬ Front washer nozzle LH

○ : Clip

Hydraulic Layout

INFOID:0000000010785463

WITHOUT AROUND VIEW MONITOR SYSTEM



① Rear washer nozzle

② Grommet

③ Rear washer tube

④ Washer tank

⑤ Front washer tube

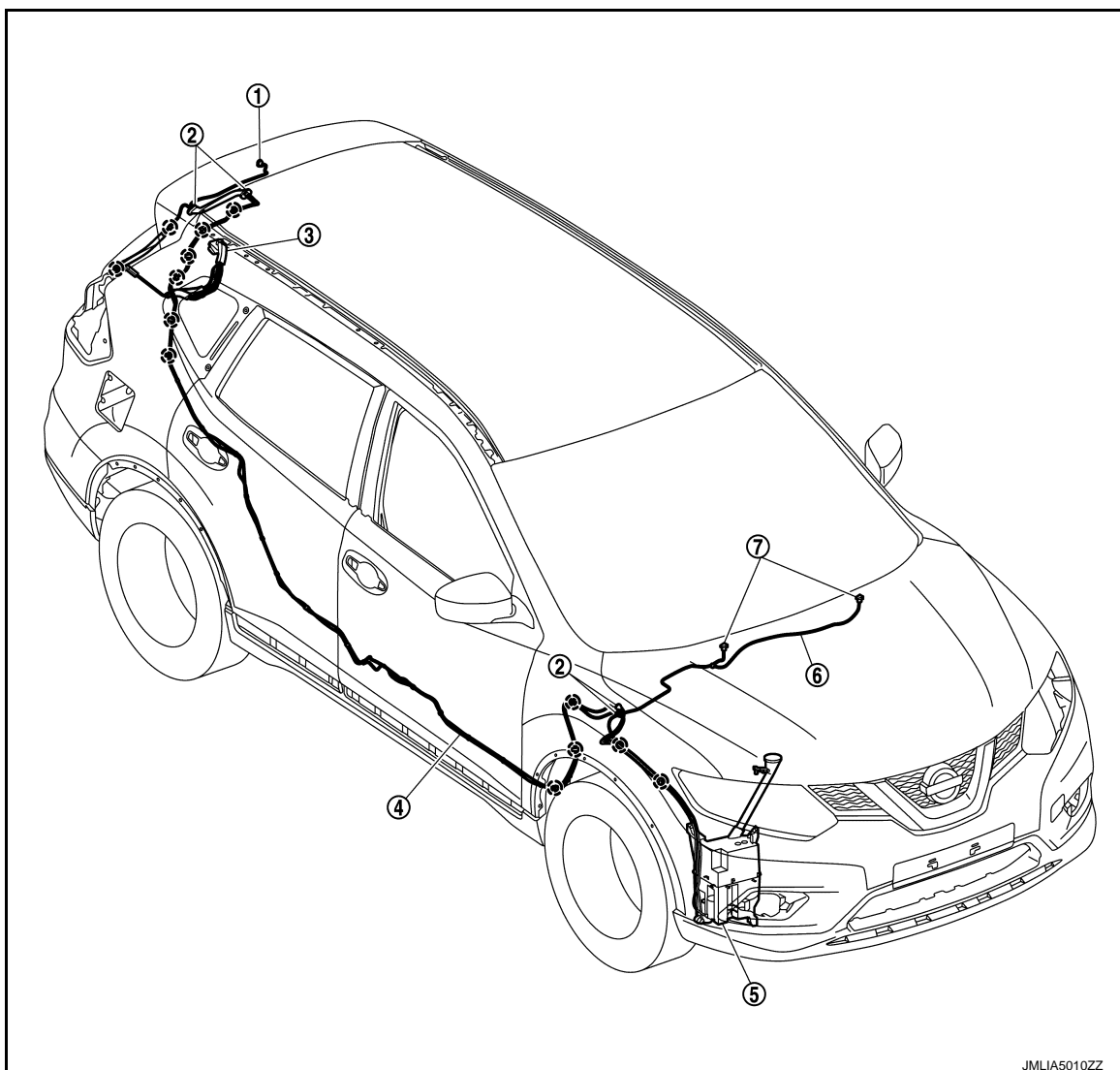
⑥ Front washer nozzle

○ : Clip

WITH AROUND VIEW MONITOR SYSTEM

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >



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

FRONT WASHER NOZZLE

FRONT WASHER NOZZLE : Removal and Installation

INFOID:0000000010785464

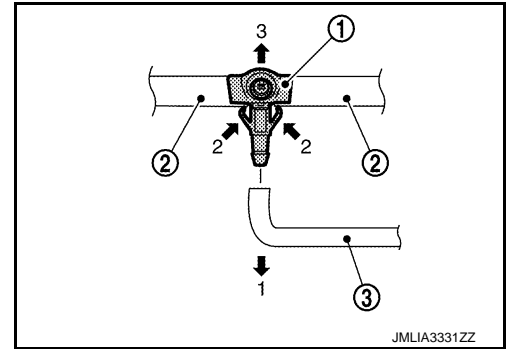
REMOVAL

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

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"](#).

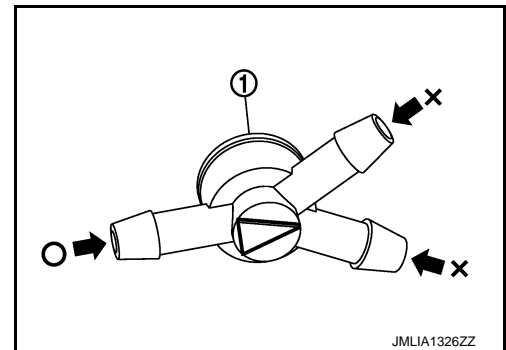
FRONT WASHER NOZZLE : Inspection and Adjustment

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

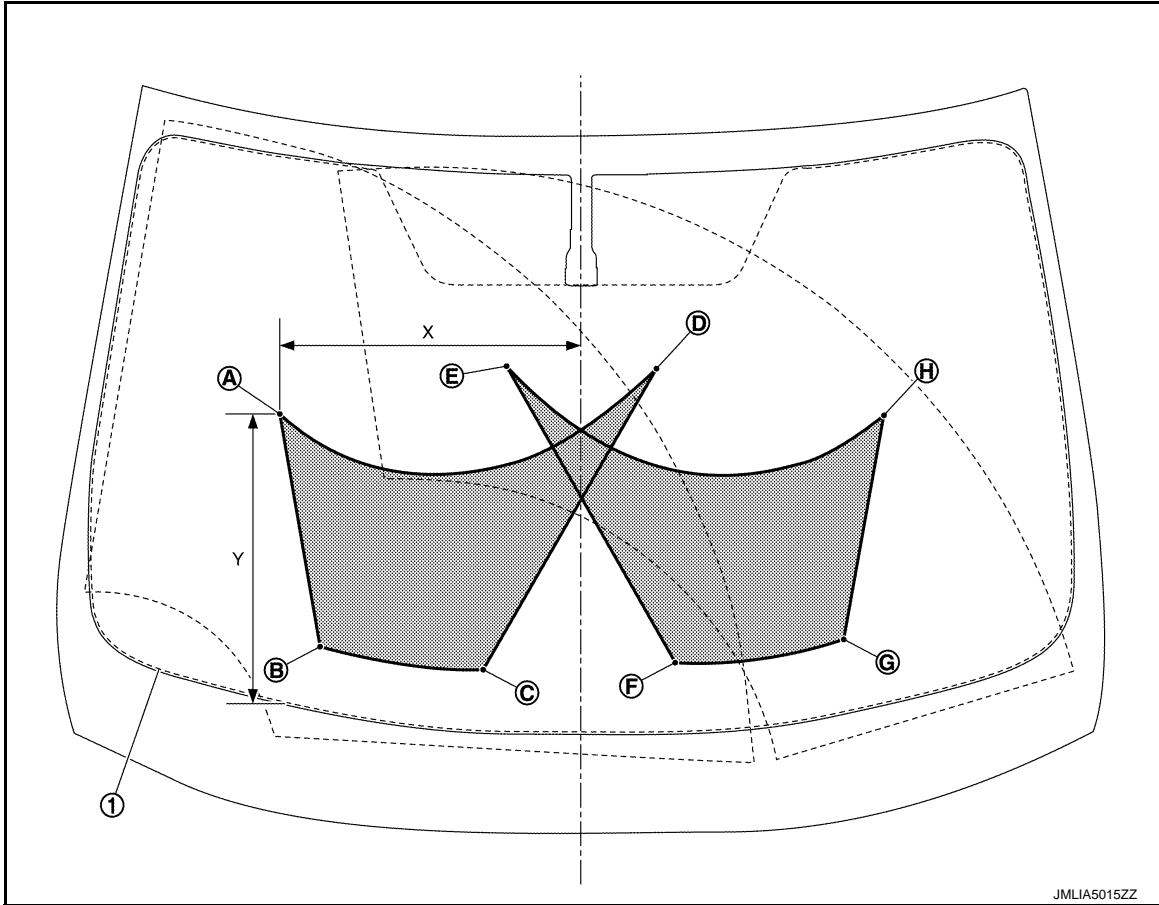
Front Washer Nozzle Spray Position Adjustment

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

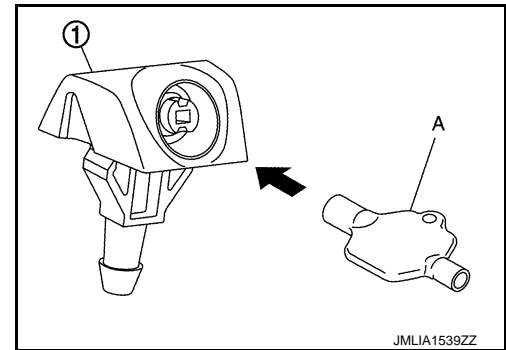
Unit: mm (in)

	Driver side				Passenger side			
	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ
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

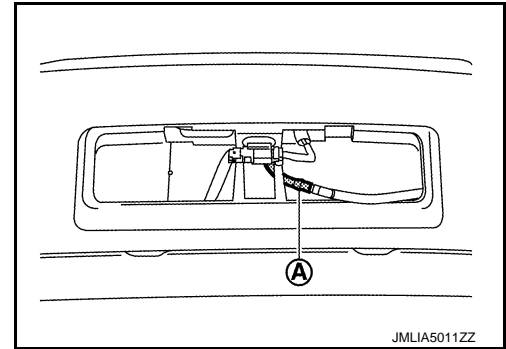
REMOVAL

1. 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

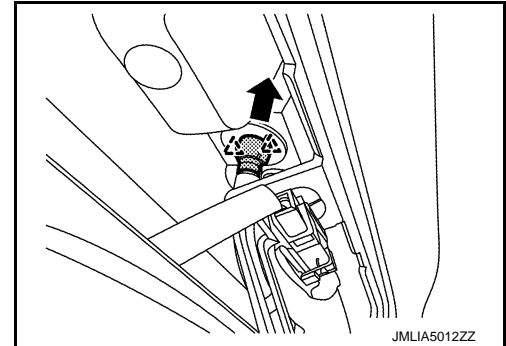
< REMOVAL AND INSTALLATION >

2. Disconnect portion ① 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"](#).

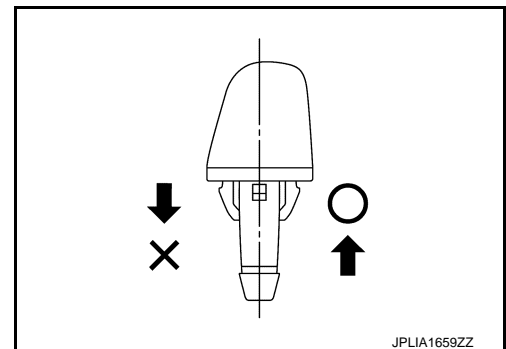
REAR WASHER NOZZLE : Inspection and Adjustment

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.



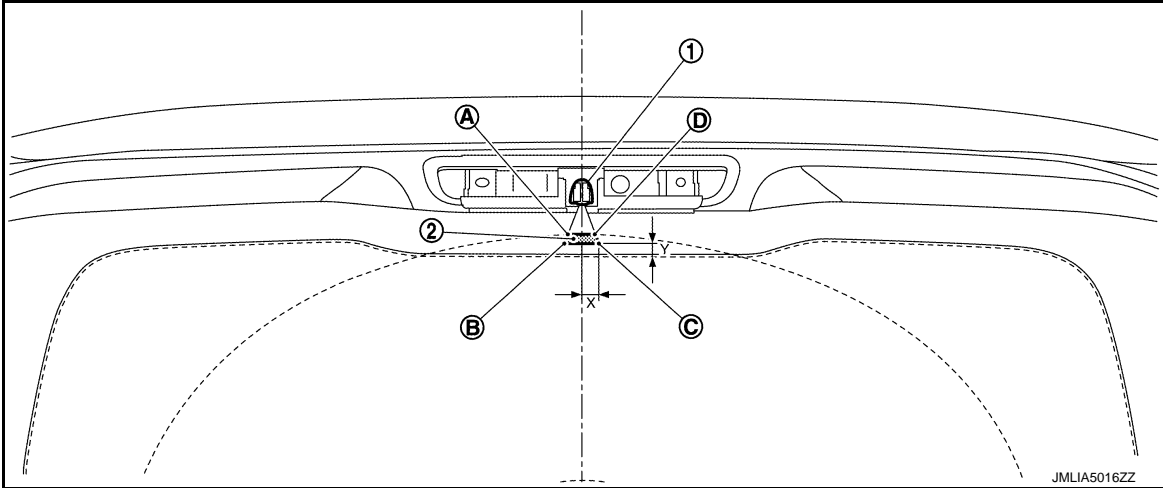
ADJUSTMENT

Rear Washer Nozzle Spray Position Adjustment

WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

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

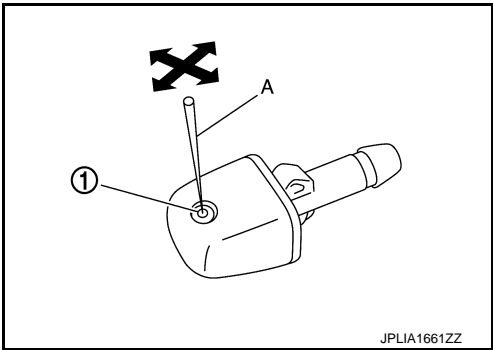


- ① Rear washer nozzle ② Spray range

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:0000000010785468

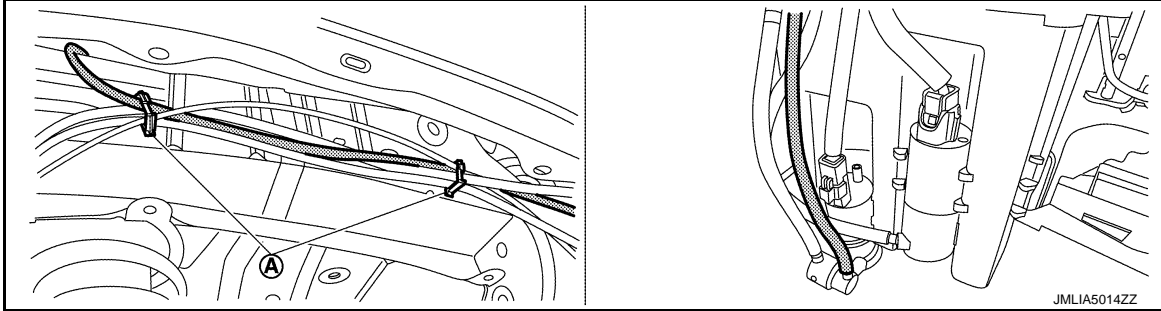
REMOVAL

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 ①.



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

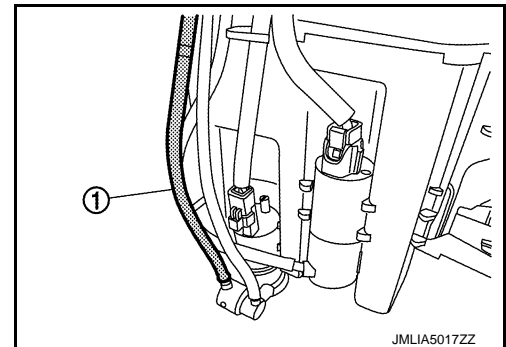
INFOID:0000000010785469

REMOVAL

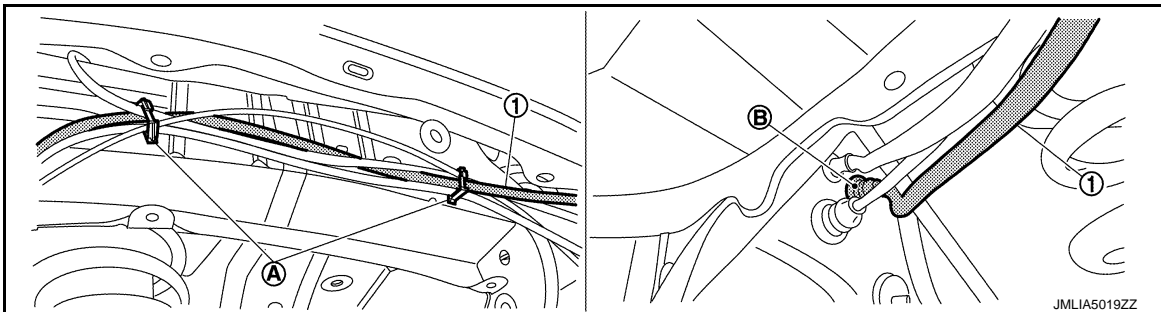
CAUTION:

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 ①, and then remove grommet ②, and then pull in rear washer tube A of inside the vehicle.



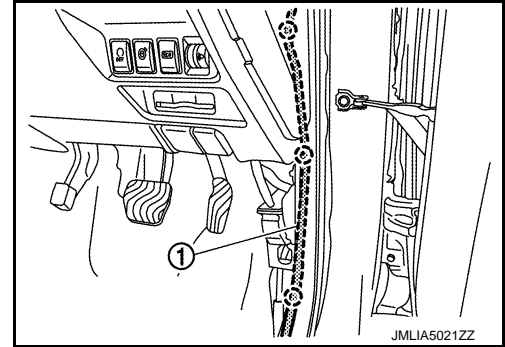
4. Remove dash side finisher RH. Refer to [INT-26, "DASH SIDE FINISHER : Removal and Installation"](#).
5. Remove center pillar lower garnish RH. Refer to [INT-27, "CENTER PILLAR LOWER GARNISH : Removal and Installation"](#).
6. Remove luggage side upper finisher RH. Refer to [INT-45, "LUGGAGE SIDE UPPER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

WASHER NOZZLE AND TUBE

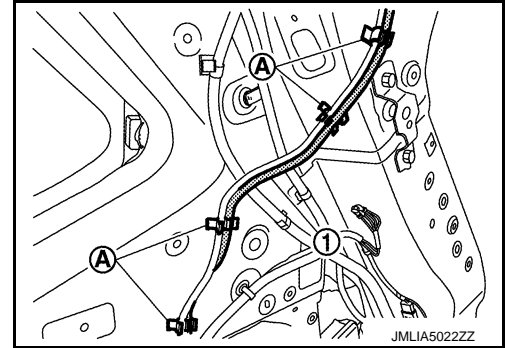
< REMOVAL AND INSTALLATION >

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

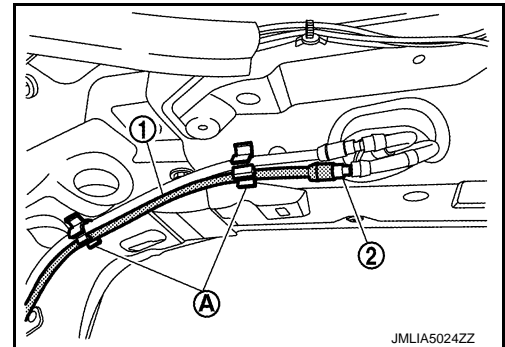
○ : Clip



8. Remove rear washer tube A from harness protector.
9. Remove rear washer tube A ① from fixing clips ④.



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 ④.
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:000000010785470

REMOVAL

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

INSTALLATION

Install in the reverse order of removal.

HEADLAMP WASHER

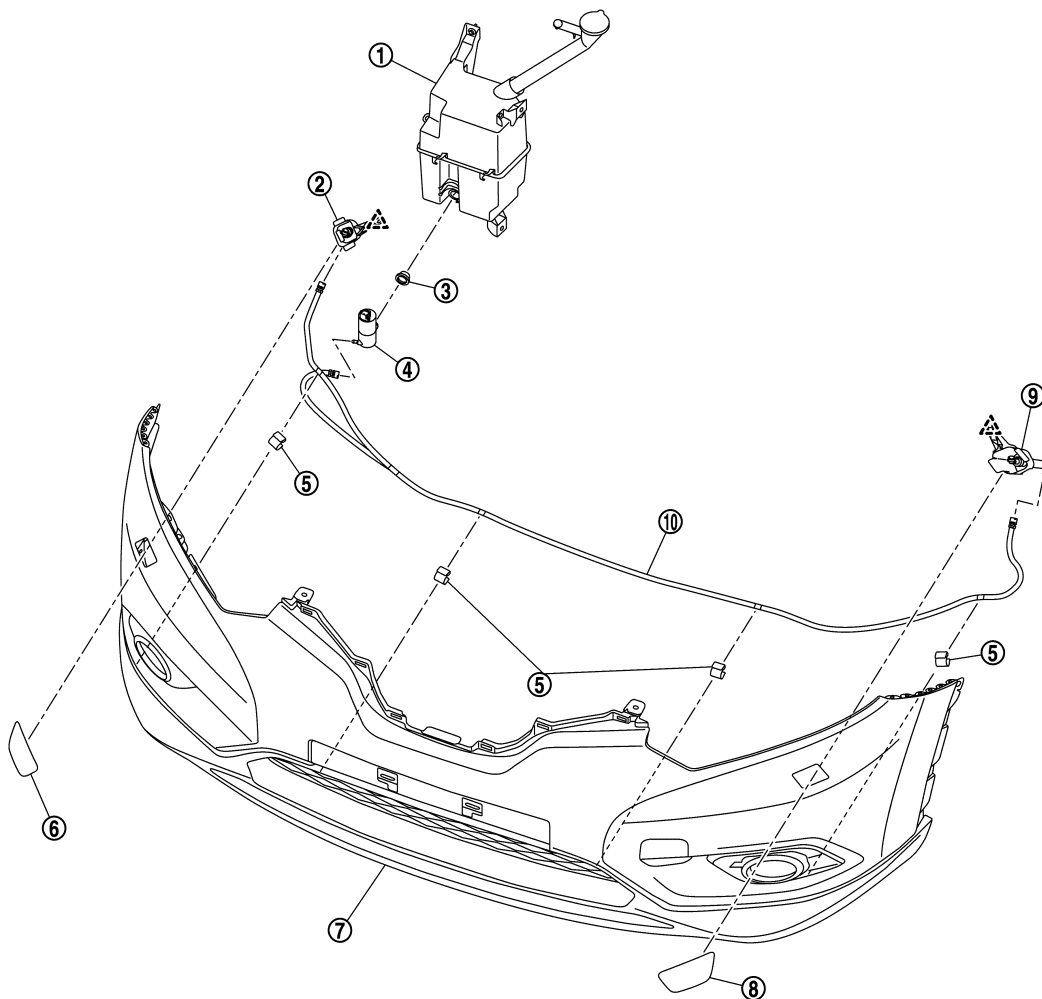
< REMOVAL AND INSTALLATION >

HEADLAMP WASHER

Exploded View

INFOID:000000010786689

SEC. 286•289•620



JMLIA5411ZZ

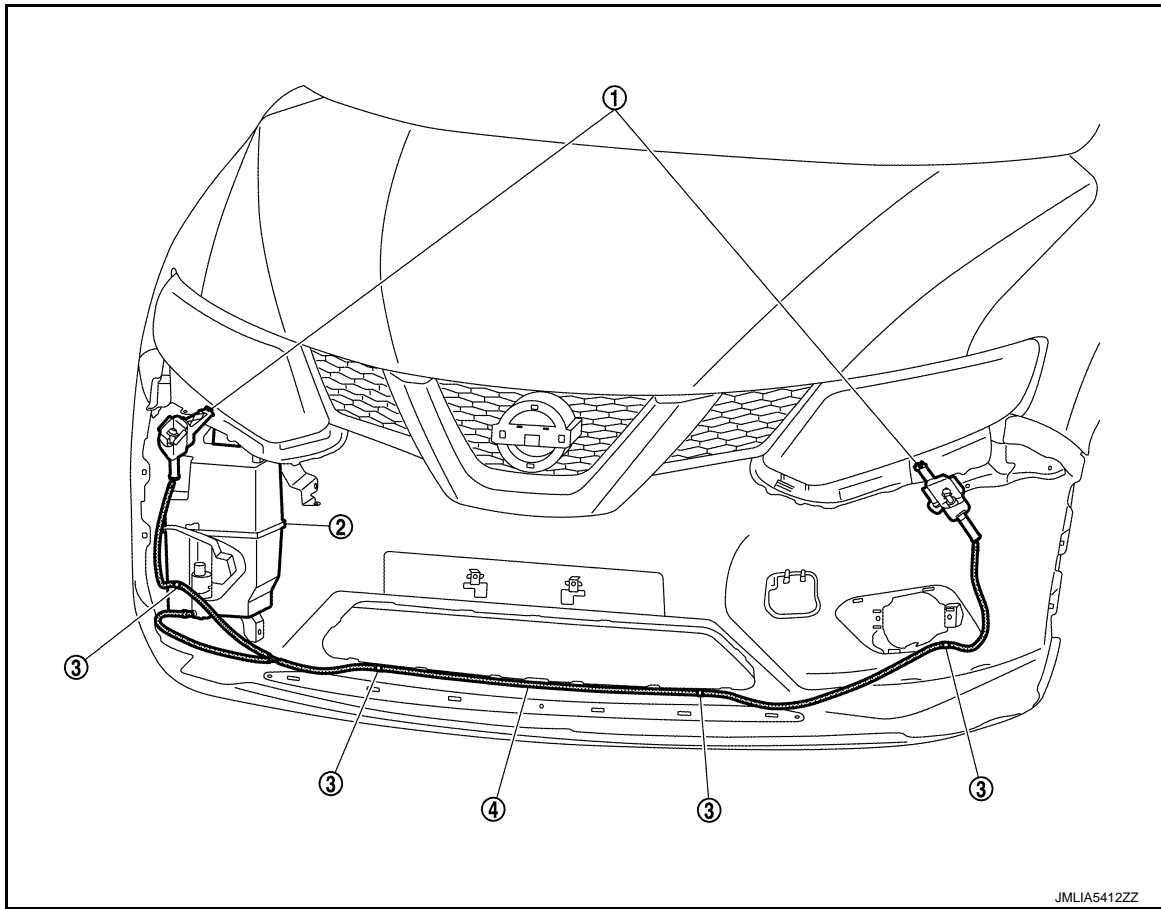
- | | | |
|------------------------|-----------------------------|-----------------------------|
| ① Washer tank | ② Headlamp washer nozzle RH | ③ Packing |
| ④ Headlamp washer pump | ⑤ Tube clip | ⑥ Headlamp washer cover RH |
| ⑦ Front bumper fascia | ⑧ Headlamp washer cover LH | ⑨ Headlamp washer nozzle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

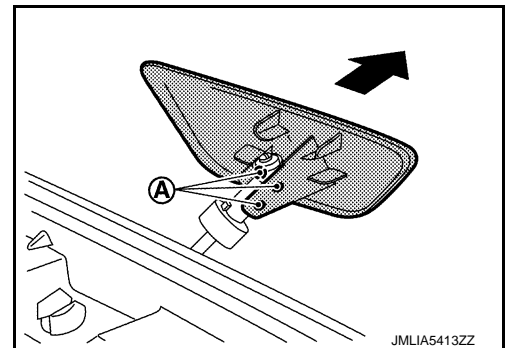
WASHER NOZZLE : Removal and Installation

INFOID:0000000010786691

WW

REMOVAL

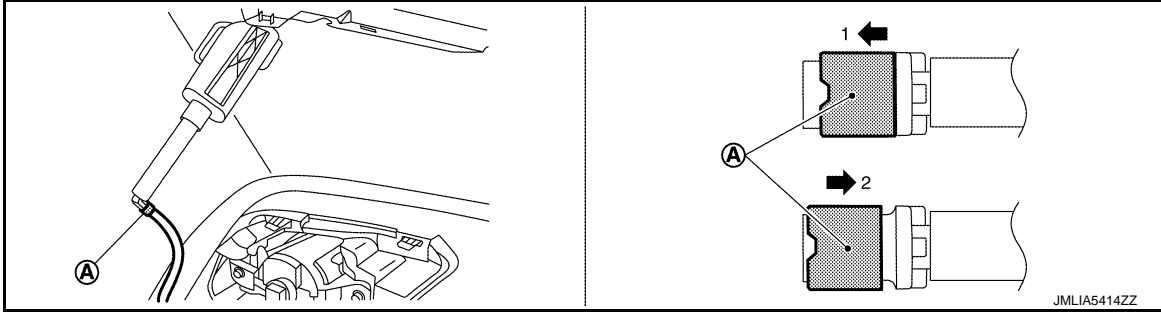
1. Remove front bumper fascia. Refer to [EXT-15. "Removal and Installation"](#).
2. Disengage headlamp washer cover fixing pawls (A) while pull out headlamp washer nozzle from front bumper fascia, and then remove headlamp washer cover.



HEADLAMP WASHER

< REMOVAL AND INSTALLATION >

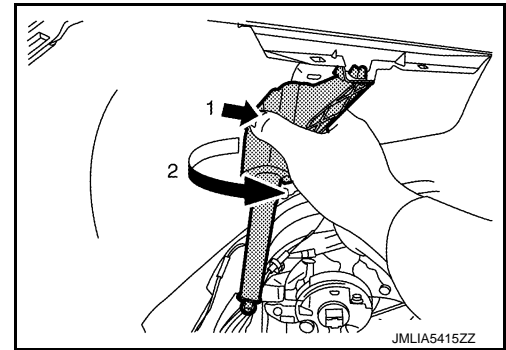
3. Disconnect headlamp washer tube connector (A), and then remove headlamp washer tube from headlamp washer nozzle.



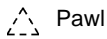
NOTE:

- 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.

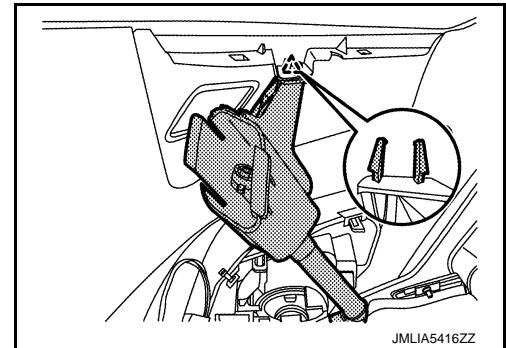
4. Disengage headlamp washer nozzle from front bumper fascia according to numerical order 1→2 indicated by arrows as shown in the figure.



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:0000000010786692

HEADLAMP WASHER NOZZLE SPRAY POSITION INSPECTION

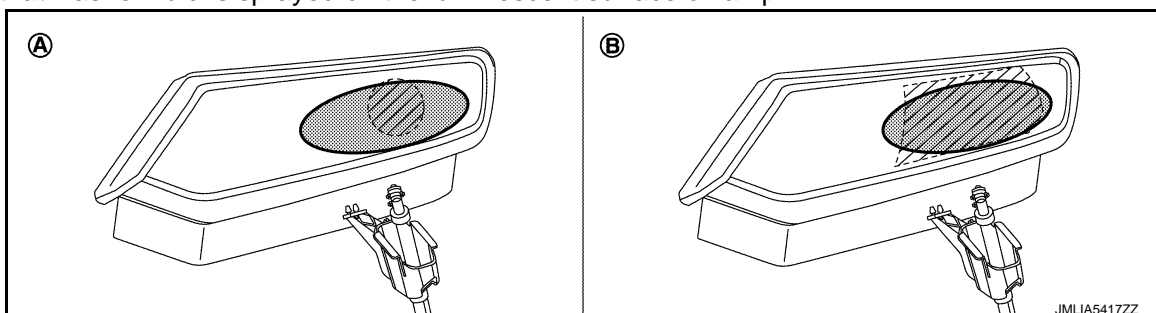
CAUTION:

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-emitting area

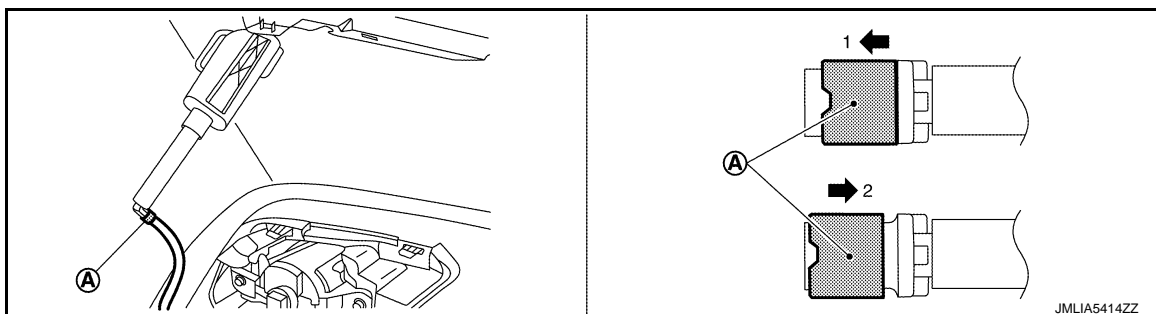
WASHER TUBE

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 (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.

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:

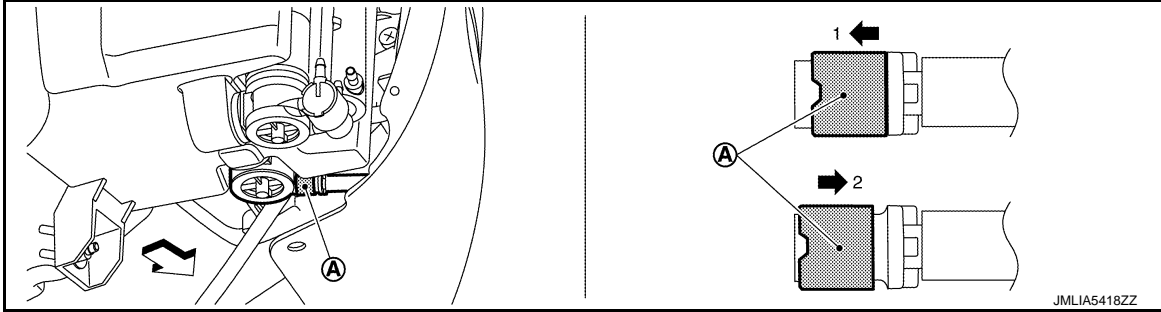
When the headlamp washer tube and headlamp washer tube is removed, washer fluid may come out so prepare a container to receive the fluid and never allow fluid to be sprinkled.

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.



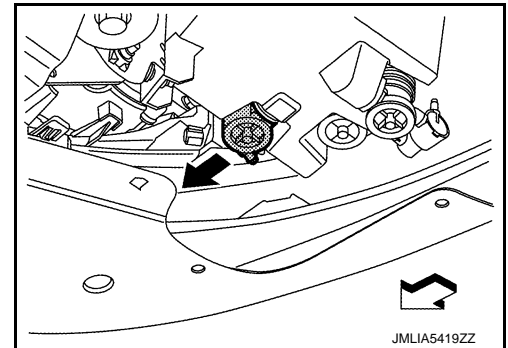
↶ : Vehicle front

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

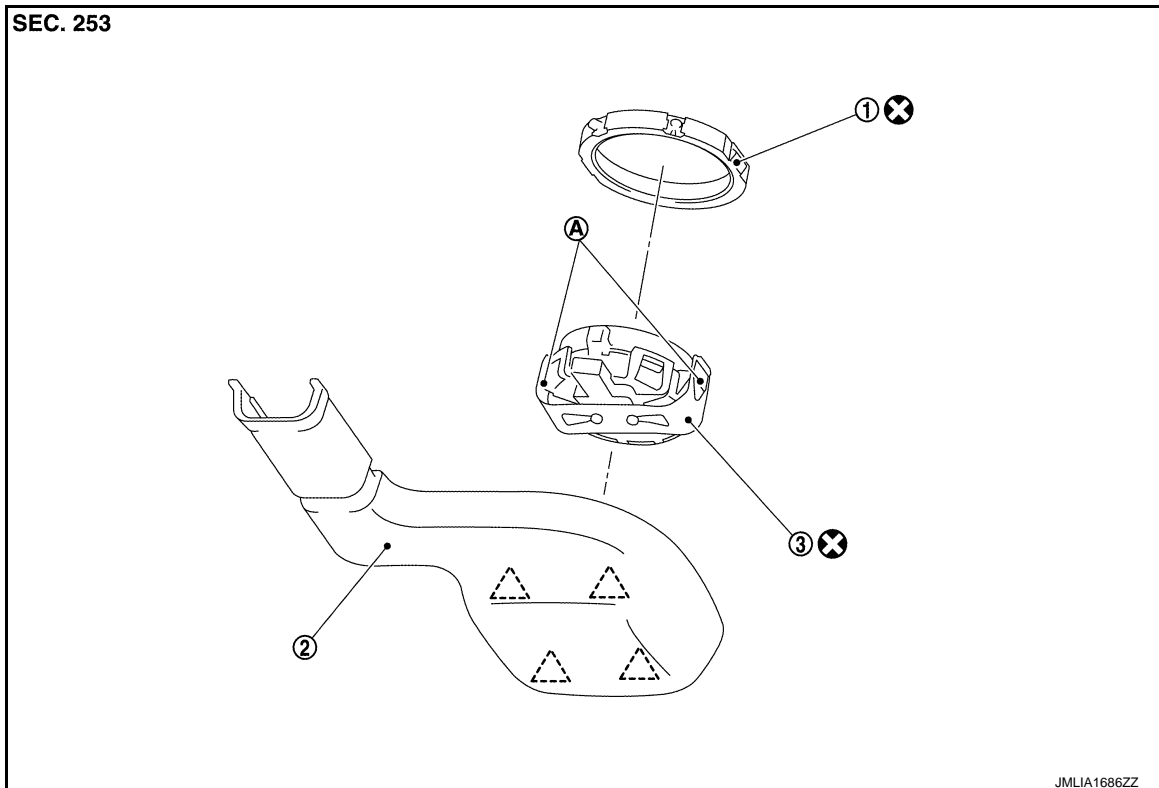
Exploded View

INFOID:0000000010785471

WITH FRONT CAMERA UNIT

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

WITHOUT FRONT CAMERA UNIT



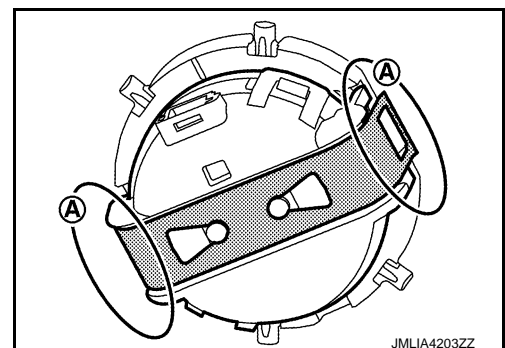
Removal and Installation

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 A, and then Peel off rain sensor.

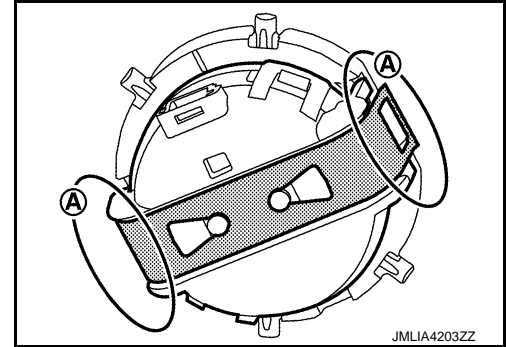


LIGHT & RAIN SENSOR

< 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 ①, and then Peel off rain sensor.

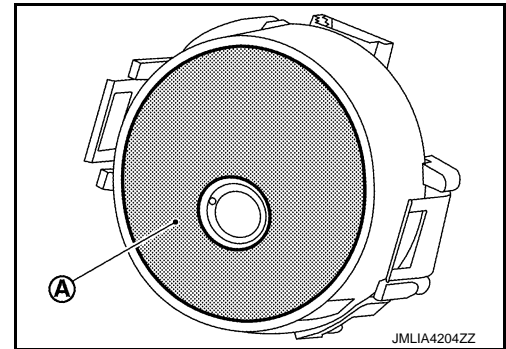


INSTALLATION

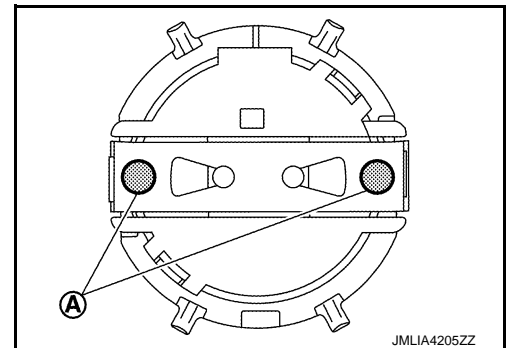
Note the following items, and then install in the reverse order of removal.

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 ① after removal of sensor protective cover.



- 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 ① vertically to the glass surface and fully engage both ends of lock spring.



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

Inspection

INFOID:0000000010785473

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.

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O

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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 >

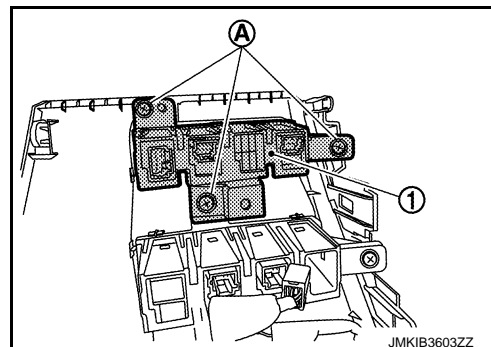
HEADLAMP WASHER SWITCH

Removal and Installation

INFOID:000000010957658

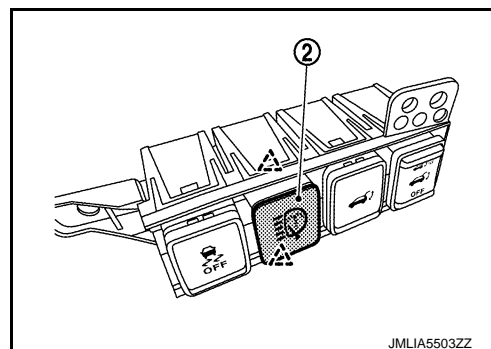
REMOVAL

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