

SECTION WW

WIPER & WASHER

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PRECAUTIONS

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PRECAUTION

PRECAUTIONS

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

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The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

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:

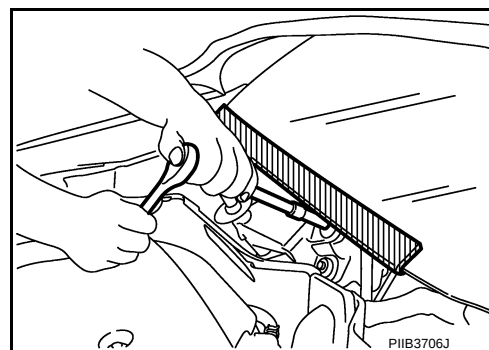
Always observe the following items for preventing accidental activation.

- 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

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



PRECAUTIONS

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Precautions for Removing Battery Terminal

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- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption 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.

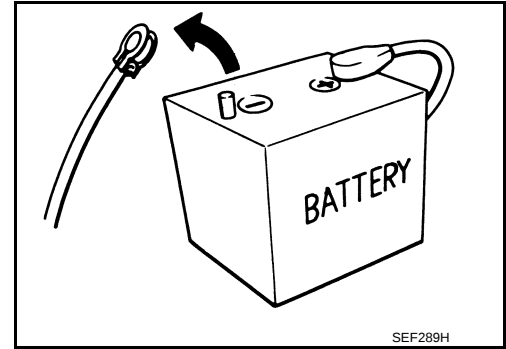
NOTE:

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.



PREPARATION

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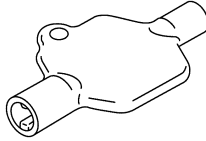
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PREPARATION

Commercial Service Tool

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



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COMPONENT PARTS

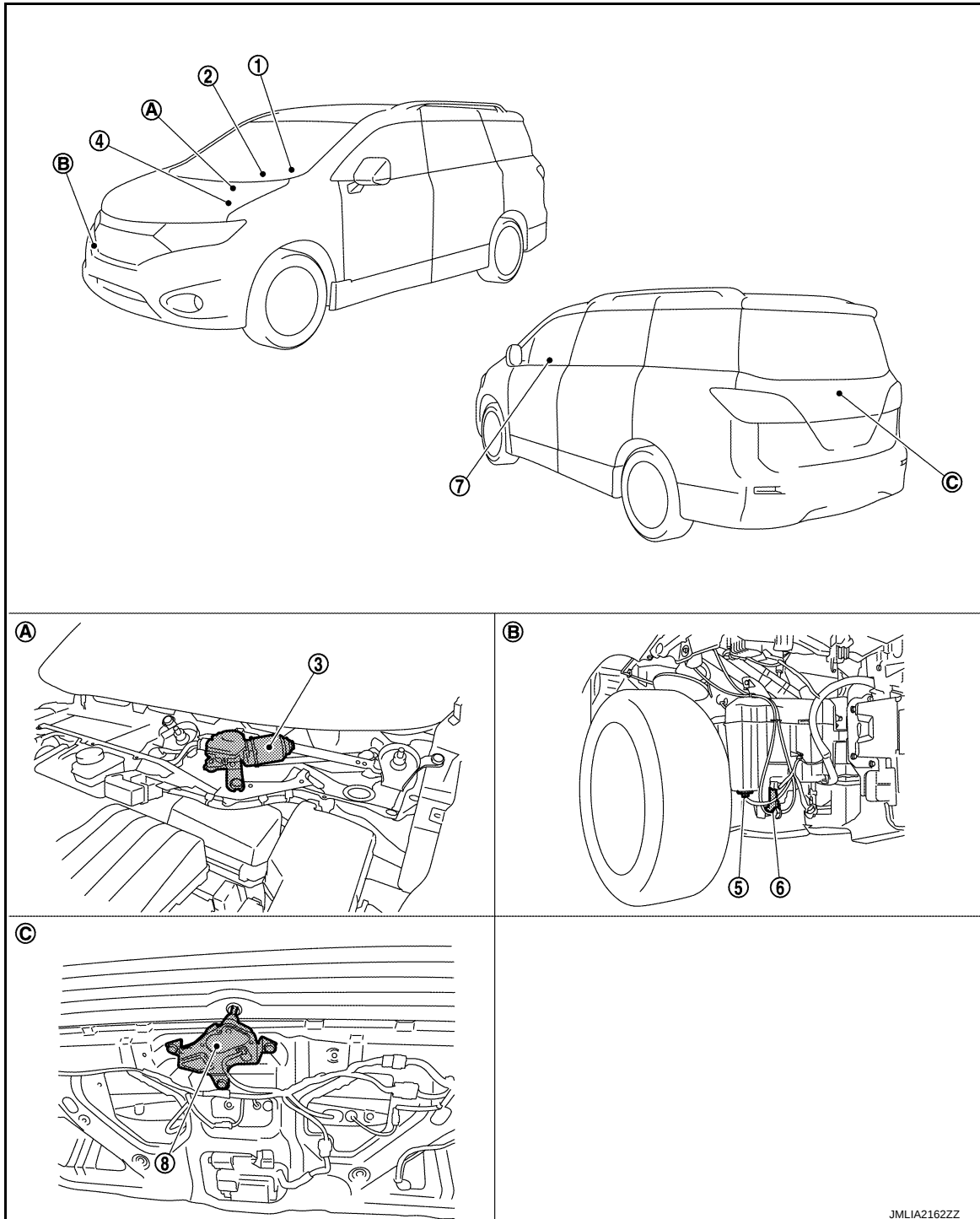
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SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

No.	Part	Function
1.	Combination meter	Transmits the vehicle speed signal to BCM via CAN communication.
2.	Combination switch (Wiper & washer switch)	Refer to BCS-8, "COMBINATION SWITCH READING SYSTEM : System Description" for detailed installation location.
3.	Front wiper motor	- IPDM E/R controls front wiper operation. - Front wiper stop position signal is transmitted to IPDM E/R.
4.	IPDM E/R	- Controls the integrated relay according to the request (via CAN communication) from BCM. - Performs the auto stop control of the front wiper. - Refer to PCS-4, "IPDM E/R : Component Parts Location" for detailed installation location.
5.	Washer level switch	- Combination meter indicates low washer fluid warning judged by the signal from the washer level switch. - Refer to MWI-17, "MASTER WARNING LAMP : System Description".
6.	Washer pump	- Washer fluid is sprayed according to washer switch states. - Switching between front washer and rear washer is performed according to the voltage polarity change to washer pump.
7.	BCM	- Judges the each switch status by the combination switch reading function. - Requests (via CAN communication) the front wiper relay and the front wiper high 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-4, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
8.	Rear wiper motor	- BCM controls rear wiper operation. - Rear wiper stop position signal is transmitted to BCM.

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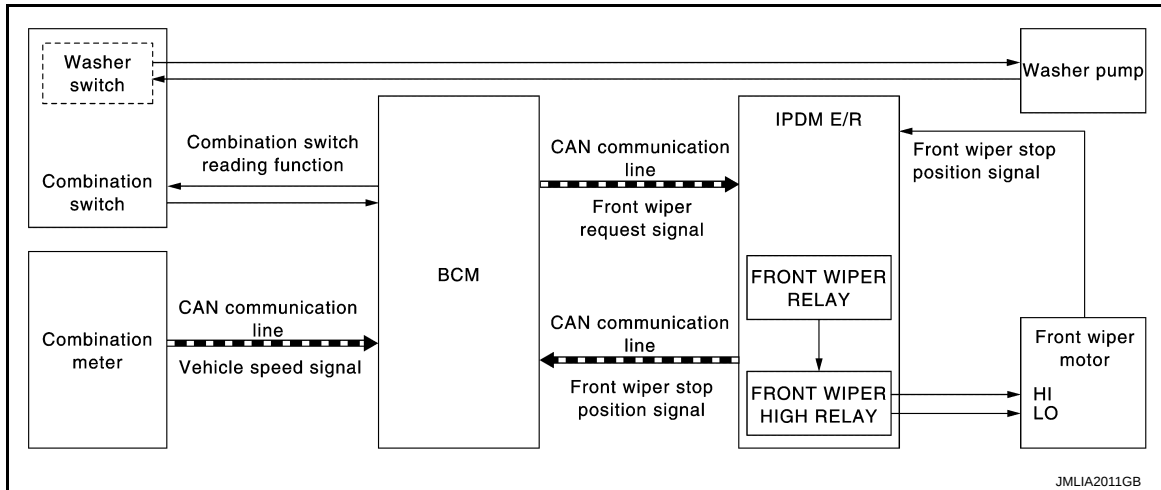
SYSTEM

FRONT WIPER AND WASHER SYSTEM

FRONT WIPER AND WASHER SYSTEM : System Description

INFOID:000000011322349

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

Combination meter indicates low washer fluid level warning judged by the signal from the washer level switch. For details of low washer fluid level warning, refer to [MWI-17, "MASTER WARNING LAMP : 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 high 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 (LO) to IPDM E/R via CAN communication according to the front wiper LO operating condition.

Front wiper LO operating condition

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

FRONT WIPER HI OPERATION

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

Front wiper HI operating condition

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

SYSTEM

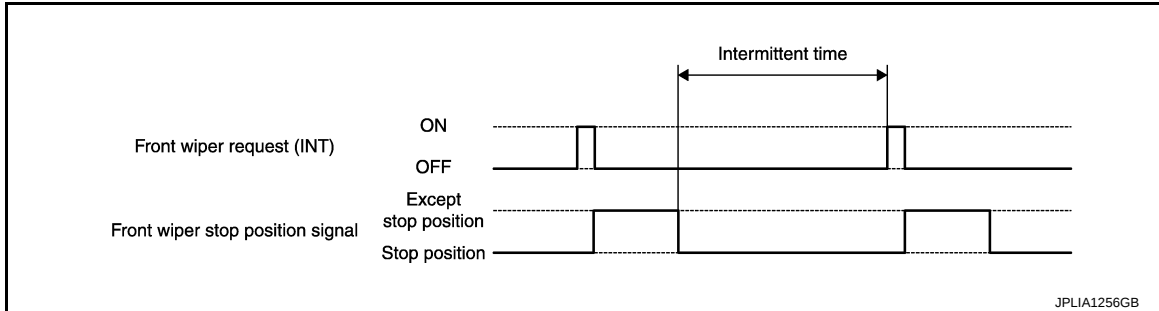
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FRONT WIPER INT OPERATION

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



NOTE:

Factory setting of the front wiper intermittent operation is operation linked without vehicle speed. Front wiper intermittent operation can be set to operation linked or not linked with vehicle speed using CONSULT. Refer to [WW-18, "WIPER : CONSULT Function \(BCM - WIPER\)"](#).

Front wiper intermittent operation with vehicle speed

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

Unit: Second

Wiper intermittent dial position	Intermittent operation interval	Intermittent operation delay 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	Short ↑	1	0.4	0.24
2		2.5	1	0.6
3		5	2	1.2
4		7.5	3	1.8
5	↓ Long	12.5	5	3
6		25	10	6
7		40	16	9.6

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

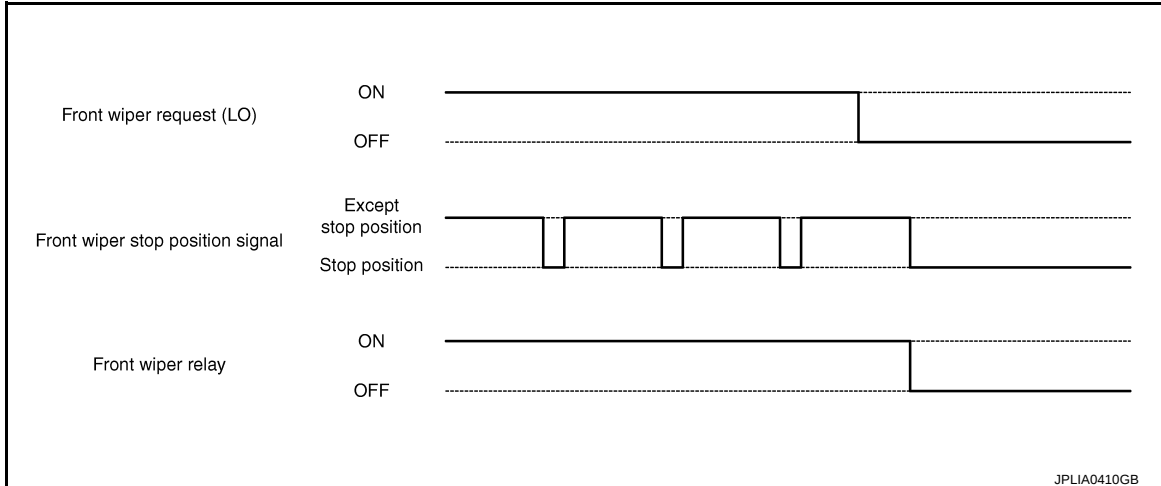
FRONT WIPER AUTO STOP OPERATION

- BCM stops transmitting the front wiper request signal when the front wiper switch is turned OFF.
- IPDM E/R detects the front wiper stop position signal from the front wiper motor and detects the front wiper motor position (stop position/except stop position).

SYSTEM

< SYSTEM DESCRIPTION >

- When the front wiper request signal is stopped, IPDM E/R turns ON the front wiper relay until the front wiper motor returns to the stop position.



NOTE:

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

FRONT WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of front wiper

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

WIPER LINKED AUTO LIGHTING FUNCTION

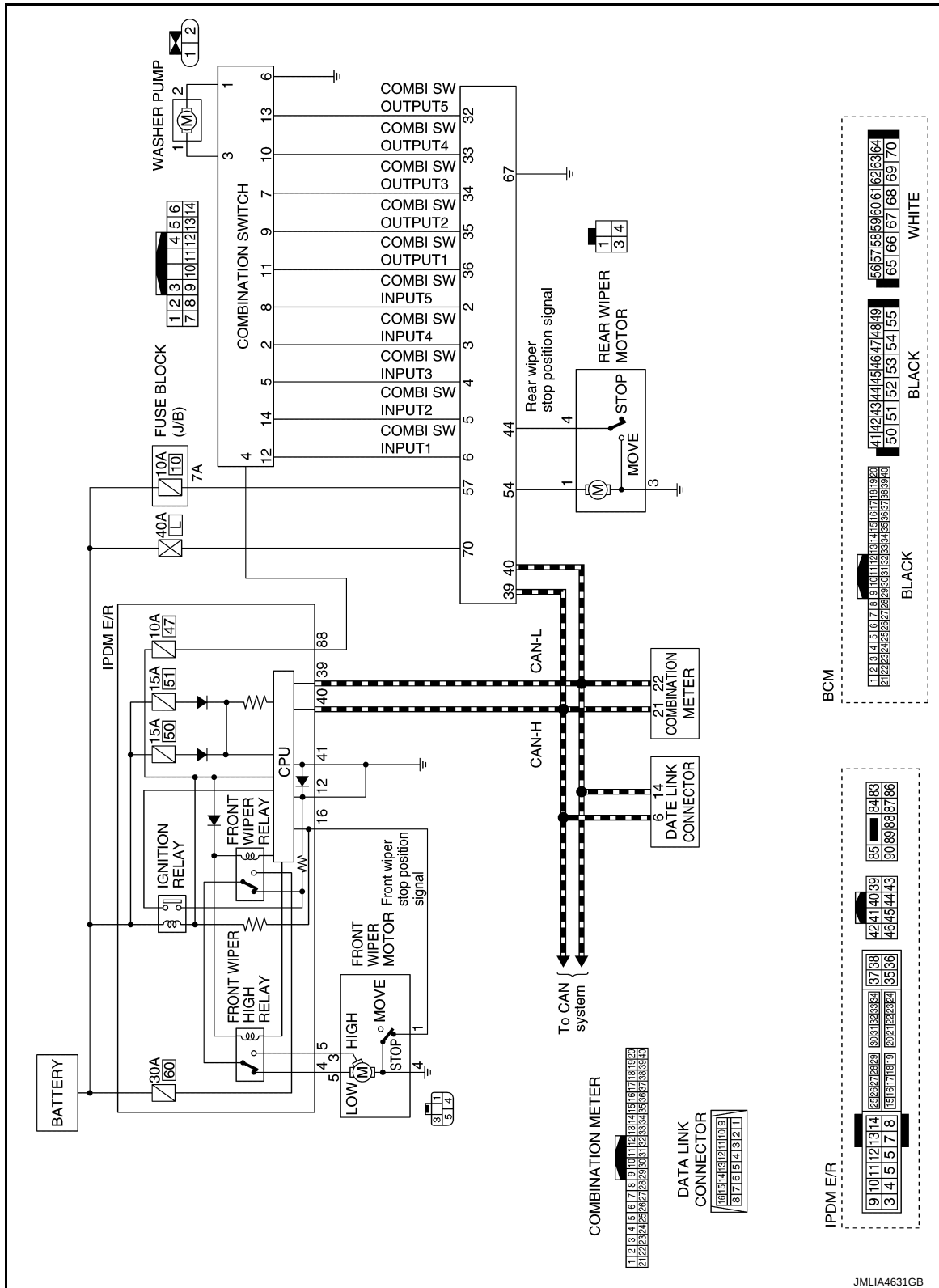
When light switch is in the AUTO position, front wiper operates, and then headlamp illuminates. Refer to [EXL-14, "AUTO LIGHT SYSTEM \(EXCEPT FOR CANADA\) : System Description"](#).

SYSTEM

< SYSTEM DESCRIPTION >

FRONT WIPER AND WASHER SYSTEM : Circuit Diagram

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FRONT WIPER AND WASHER SYSTEM : Fail-Safe

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CAN COMMUNICATION CONTROL

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.

If No CAN Communication Is Available With BCM

SYSTEM

< SYSTEM DESCRIPTION >

Control part	Fail-safe operation
Front wiper motor	• 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 INT mode and the front wiper motor is operating. • Returns automatically wiper to stop position when ignition switch is turned ON if fail-safe control is activated while front wiper motor is operated and wiper stop in the other position than stop position.

FRONT WIPER PROTECTION FUNCTION

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

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

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

NOTE:

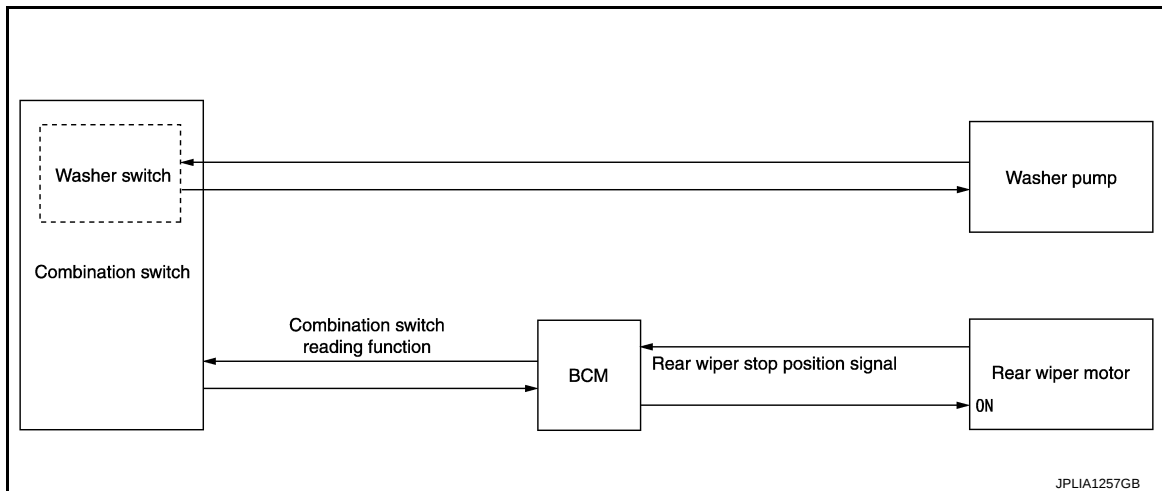
This operation status can be confirmed on the IPDM E/R “Data Monitor” that displays “BLOCK” for the item “WIP PROT” while the wiper is stopped.

REAR WIPER AND WASHER SYSTEM

REAR WIPER AND WASHER SYSTEM : System Description

INFOID:000000011322352

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

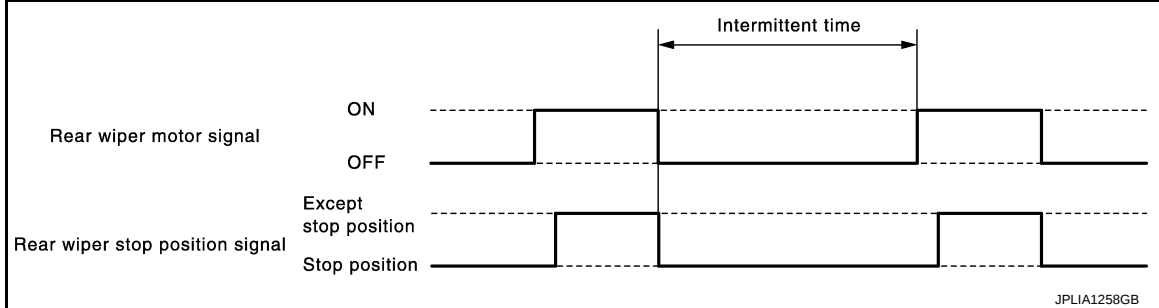
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< SYSTEM DESCRIPTION >

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

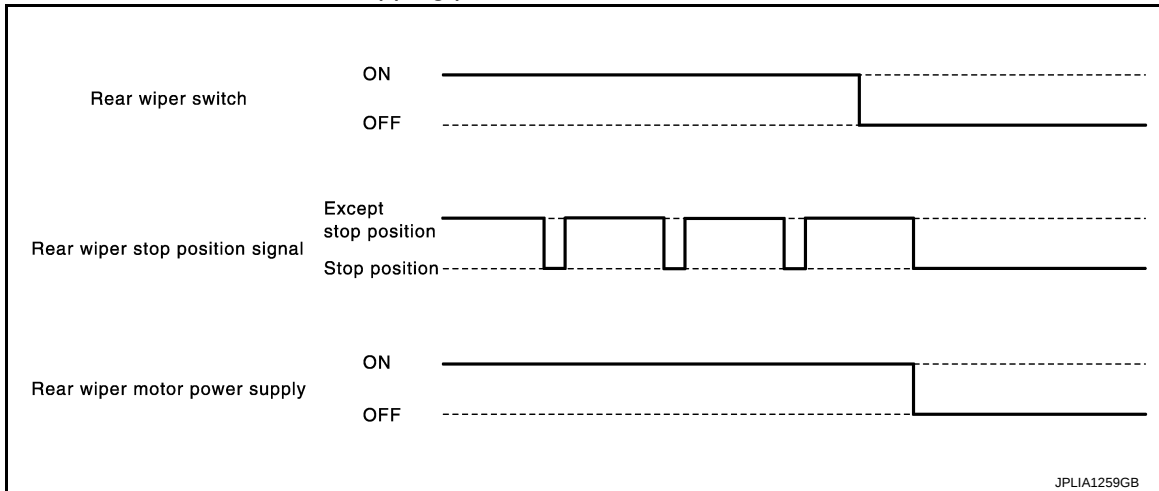
Rear wiper INT operating condition

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



REAR WIPER AUTO STOP OPERATION

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



NOTE:

BCM stops supplying power to the rear wiper motor when the 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.

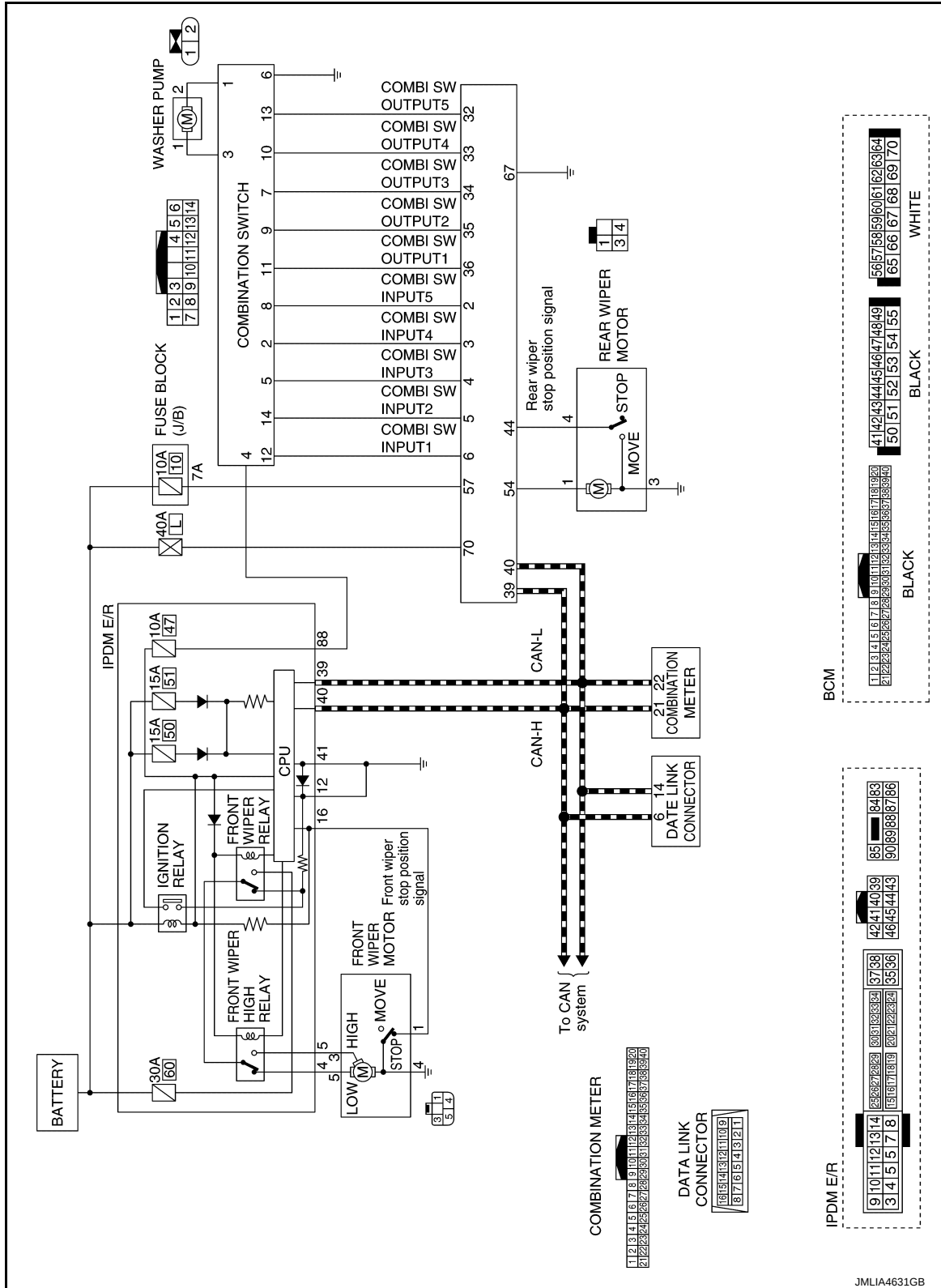
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REAR WIPER AND WASHER SYSTEM : Circuit Diagram

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REAR WIPER AND WASHER SYSTEM : Fail-safe

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REAR WIPER MOTOR PROTECTION

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

SYSTEM

< SYSTEM DESCRIPTION >

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

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DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000011565632

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	- 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		×	×
Interior room lamp control system	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
Air conditioning control system	AIR CONDITONER		×	×*
- Intelligent Key system - Engine start system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	AIR PRESSURE MONITOR	×	×	×

NOTE:

*: For models with automatic air conditioning control system, this diagnosis mode is not used.

FREEZE FRAME DATA (FFD)

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

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected*	While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (LOCK)]
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (OFF)]
	LOCK>ACC		While turning power supply position from OFF (LOCK) to ACC
	ACC>ON		While turning power supply position from ACC to ON
	RUN>ACC		While turning power supply position from RUN to ACC (Except emergency stop operation)
	CRANK>RUN		While turning power supply position from CRANK to RUN
	RUN>URGENT		While turning power supply position from RUN to ACC (Emergency stop operation)
	ACC>OFF		While turning power supply position from ACC to OFF (OFF)
	OFF>LOCK		While turning power supply position from OFF (OFF) to OFF (LOCK)
	OFF>ACC		While turning power supply position from OFF (OFF) to ACC
	ON>CRANK		While turning power supply position from ON to CRANK
	OFF>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (OFF)] to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (LOCK)] to low power consumption mode
	LOCK		Power supply position is OFF (LOCK)
	OFF		Power supply position is OFF (OFF)
	ACC		Power supply position is ACC
	ON		Power supply position is ON
	ENGINE RUN		Power supply position is RUN
	CRANKING		Power supply position is CRANK
IGN Counter	0 - 39	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.	

NOTE:

*: Refer to the following for details of the power supply position.

- OFF (OFF, LOCK): Ignition switch OFF
- ACC: Ignition switch ACC
- IGN: Ignition switch ON with engine stopped
- RUN: Ignition switch ON with engine running
- CRANK: At engine cranking

Power supply position shifts to "OFF (LOCK)" from "OFF (OFF)", when ignition switch is in the OFF position, shift position is in the P position, and any of the following conditions are met.

- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

The power supply position shifts to "ACC" when the push-button ignition switch (push switch) is pushed at "OFF (LOCK)".

WIPER

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

WIPER : CONSULT Function (BCM - WIPER)

INFOID:000000011322356

WORK SUPPORT

Service item	Setting item	Description
WIPER SPEED SETTING	On	With vehicle speed (Front wiper intermittent time linked with the vehicle speed and wiper intermittent dial position)
	Off*	Without vehicle speed (Front wiper intermittent time linked with the wiper intermittent dial position)
		The setting of front wiper INT operation can be changed

*: 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.
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]	Rear wiper motor (stop position) status input from the rear wiper motor

ACTIVE TEST

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

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

Test item	Operation	Description
RR WIPER	On	Output the voltage to operate the rear wiper motor.
	Off	Stops the voltage to stop the rear wiper motor.

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DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:000000011565633

AUTO ACTIVE TEST

Description

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

- Oil pressure warning lamp
- Front wiper (LO, HI)
- Parking lamp
- License plate lamp
- Tail lamp
- Side marker lamp
- Front fog lamp
- Headlamp (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan

Operation Procedure

NOTE:

Never perform auto active test in the following condition.

- Passenger door is open.
- CONSULT is connected.

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

NOTE:

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

2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the front door switch (driver side) 10 times. Then turn the ignition switch OFF.
4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.

NOTE:

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

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

NOTE:

- When auto active test has to be cancelled halfway through test, turn the ignition switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to [DLK-241](#), "[Component Function Check](#)".

Inspection in Auto Active Test

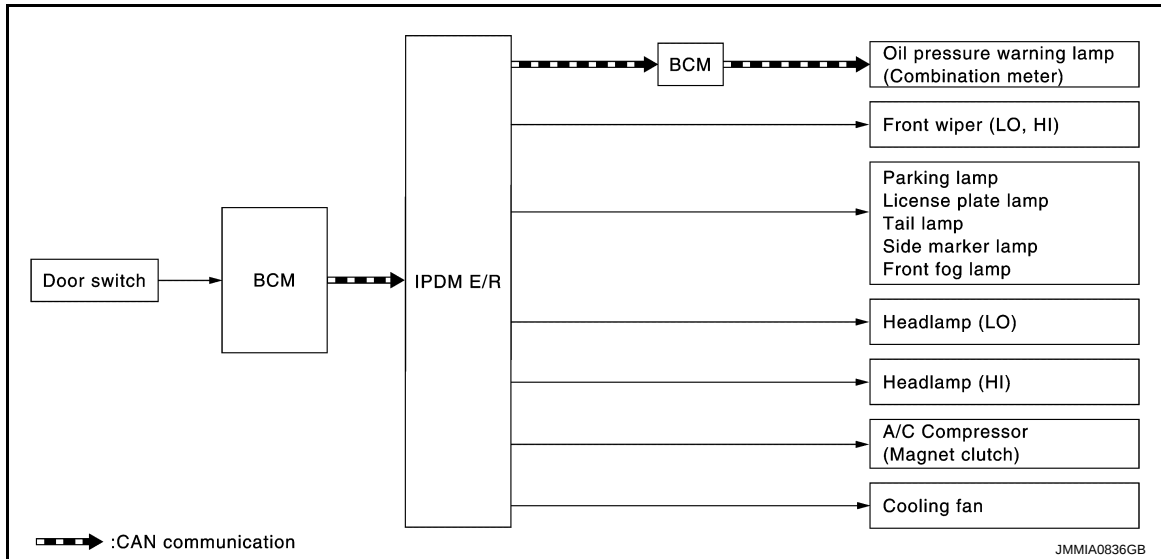
When auto active test is actuated, the following 6 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
1	Oil pressure warning lamp	Blinks continuously during operation of auto active test
2	Front wiper motor	LO for 5 seconds → HI for 5 seconds
3	• Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp	10 seconds
4	Headlamp	• LO 10 seconds • HI ON ⇔ OFF 5 times
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	LO for 5 seconds → MID for 3 seconds → HI for 2 seconds

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Concept of auto active test



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

Diagnosis chart in auto active test

Symptom	Inspection contents		Possible cause
Any of the following components do not operate • Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp • Headlamp (HI, LO) • Front wiper motor	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• Combination meter signal input circuit • CAN communication signal between Combination meter and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and Combination meter • Combination meter

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Symptom	Inspection contents		Possible cause
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	- ECM signal input circuit - CAN communication signal between ECM and IPDM E/R
		NO	- Cooling fan - Harness or connector between cooling fan and cooling fan relay - Harness or connector between IPDM E/R and cooling fan relay - Cooling fan relay - IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:0000000011565634

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

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

DATA MONITOR

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]	MAIN SIG- NALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the ignition switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

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

ACTIVE TEST

Test item

Test item	Operation	Description
CORNERING LAMP	Off	NOTE: The item is indicated, but cannot be tested.
	LH	
	RH	
HORN	On	Operates horn relay for 20 ms.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay-1.
	3	Operates the cooling fan relay-2.
	4	Operates the cooling fan relay-2 and cooling fan relay-3.
HEAD LAMP WASHER	On	NOTE: The item is indicated, but cannot be tested.

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Test item	Operation	Description
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and the daytime running light relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000011322359

ECU	Reference
BCM	BCS-40, "Reference Value"
	BCS-62, "Fail-safe"
	BCS-62, "DTC Inspection Priority Chart"
	BCS-63, "DTC Index"
IPDM E/R	PCS-16, "Reference Value"
	PCS-23, "Fail-safe"
	PCS-24, "DTC Index"

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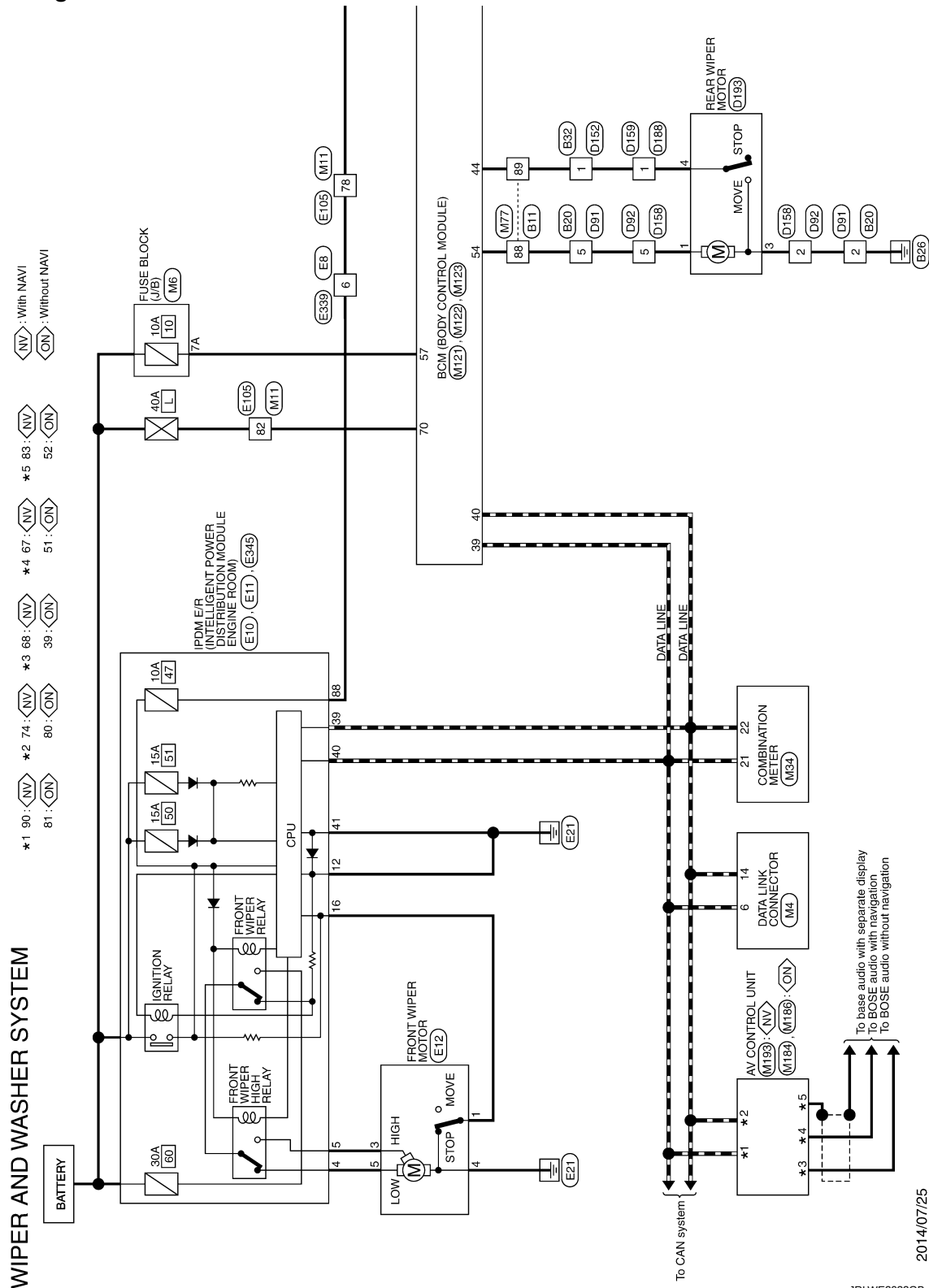
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WIRING DIAGRAM

WIPER AND WASHER SYSTEM

Wiring Diagram

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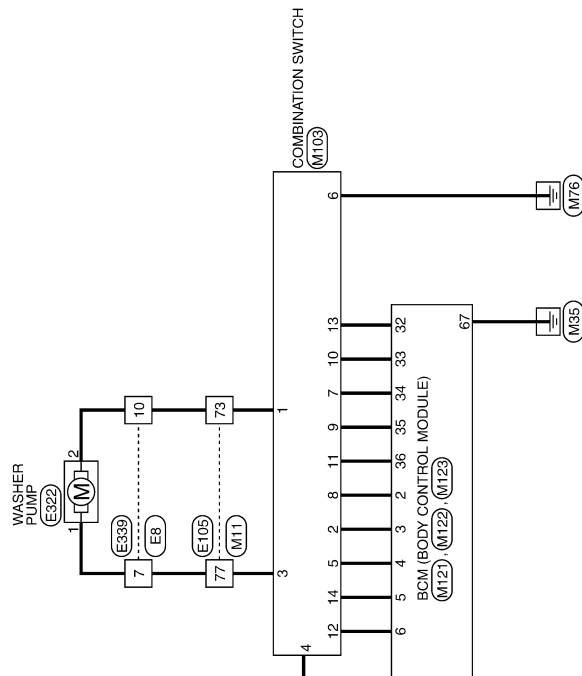


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WIPER AND WASHER SYSTEM

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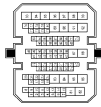
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WIPER AND WASHER SYSTEM

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WIPER AND WASHER SYSTEM

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19



78	LG	-
79	GR	-
80	BR	-
81	SB	-
82	V	-
87	G	-
88	V	-
89	G	-
90	Y	-
91	LG	-
92	L	-

Terminal No.	Color Of Wire	Signal Name [Specification]
12	GR	-
13	P	-
15	L	-
29	GR	-
30	W	-
31	P	-
37	SHIELD	-
38	R	-
39	B	-
40	W	-
51	Y	-
52	B	-
53	G	-
54	P	-
55	L	-
57	Y	-
58	L	-
59	GR	-
60	Y	-
61	Y	-
62	BR	-
63	L	-
64	W	-
65	R	-
66	SHIELD	-
67	B	-
68	W	-
69	SHIELD	-
70	W/R	-
71	B/R	-
72	BR	-
74	L	-
75	SB	-
77	V	-

Connector No.	B20
Connector Name	WIRE TO WIRE
Connector Type	M85MW-LC



1	2	3
4	5	6

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	- [With automatic back door]
2	B	- [Without automatic back door]
3	BR	- [With automatic back door]
4	Y	- [Without automatic back door]
5	V	-
6	B	-

Connector No.	B32
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-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

Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	G	-
3	P	-
4	W	-
5	Y	-
6	B	-
9	SHIELD	-
10	R	-
11	B	-
12	W	-
13	GR	-
14	P	-
15	W	-
16	G	-
17	W	-
18	W	-
19	GR	-
20	P	-
21	W	-
22	P	-
23	G	-
24	BR	-

Connector No.	D91
Connector Name	WIRE TO WIRE
Connector Type	M86FW-LC



3	2	1
6	5	4

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	- [With automatic back door]
2	B	- [Without automatic back door]
3	B/W	- [Without automatic back door]
3	V	- [With automatic back door]
4	Y	-
5	R	-
6	B	-

Connector No.	D92
Connector Name	WIRE TO WIRE
Connector Type	M86FW-LC



3	2	1
6	5	4

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B/W	- [Without automatic back door]
1	V	- [With automatic back door]
2	B	-
3	G	- [With automatic back door]
3	W	- [Without automatic back door]
5	R	-
6	B	-

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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

Connector No.	D152
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-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	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	12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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

18	R	-
19	P	-
19	V	-
20	W	-
21	O	-
22	SB	-
23	GR	-
24	G	-
25	GR	-
27	BR	-
28	G	-
30	LG	-
34	O	-
35	P	-
38	GR	-
38	GR	-

Connector No.	E11
Connector Name	FRONT WIPER MOTOR
Connector Type	HS5FGY



Connector No.	E12
Connector Name	FRONT WIPER MOTOR
Connector Type	HS5FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	Y	-
4	B/Y	-
5	LG	-

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH10MM-CS10-M3



Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	-
40	L	-
41	B	-
42	SB	-
43	LG	-
44	W	-
45	Y	-
46	O	-

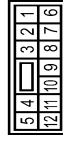
31	BR	-
38	G	-
38	V	-
40	P	-
41	L	-
42	LG	-
43	O	-
45	P	-
46	SB	-
47	V	-
49	L	-
51	BR	-
52	G	-
53	B	-
54	R	-
55	Y	-
56	SHIELD	-
61	P	-
62	G	-
63	W/L	-
64	W/R	-
66	W	-
67	Y	-
69	R	-
71	R	-
72	L	-
73	GR	-
74	SB	-
76	Y	-
77	G	-
78	O	-
80	R	-
81	L	-
82	LG	-
83	R	-

Connector No.	E322
Connector Name	WASHER PUMP
Connector Type	E02FGY-RS



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

Connector No.	E339
Connector Name	WIRE TO WIRE
Connector Type	NS12FER-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	O	-
3	P	-
4	LG	-
5	L	-
6	BR	-
7	P	-
8	G	-
9	W	-
10	GR	-
11	GR	-
12	G	-

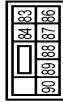
JRLWE2036GB

WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

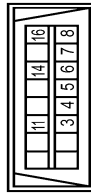
WIPER AND WASHER SYSTEM

Connector No.	E-345
Connector Name	WIPER & INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM
Connector Type	MSBFW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
83	R	-
84	R	-
88	SB	-
87	Y	-
88	BR	-
89	V	-
90	G	-

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



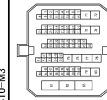
Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	GR	-
5	GR	-
6	L	-
7	R	-
8	G	-
11	SB	-
14	P	-
16	P	-

Connector No.	M6
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS36FW-M2



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	R	-
2A	G	-
3A	L	-
4A	GR	-
5A	V	-
6A	R	-
7A	GR	-
8A	L	-

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	11/10FW-CS10-M3



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	-
2	W	-
3	B	-
4	R	-
5	G	-
6	G	-
7	B	-
8	B	-
9	R	-
10	R	-
11	W	-
12	L	-
12	LG	- [Without automatic drive positioner]

13	G	- [Without automatic drive positioner]
14	L	- [With automatic drive positioner]
15	P	-
31	R	-
32	LG	-
37	BR	- [With automatic drive positioner]
37	W	- [Without automatic drive positioner]
38	R	-
39	BE	- [Without automatic drive positioner]
40	P	-
41	L	-
42	G	-
43	W	-
44	V	-
46	Y	-
47	R	-
48	G	-
49	G	-
51	G	-
52	W	-
53	B	-
54	LG	-
55	L	-
56	SHIELD	-
61	R	-
62	W	-
63	B	-
64	W	-
65	W	-
67	BR	-
68	P	-
69	R	-
71	R	-
72	L	-
73	LG	-
74	Y	-
75	V	-
76	P	-
77	P	-
78	BR	-
80	Y	-
81	W	-
82	L	-
83	R	-

Connector No.	M44
Connector Name	COMBINATION METER
Connector Type	11/40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	BATTERY POWER SUPPLY [With automatic drive positioner]
2	G	SELECT SWITCH SIGNAL [Without automatic drive positioner]
2	G	SELECT SWITCH SIGNAL [With automatic drive positioner]
2	Y	IGNITION SIGNAL [With automatic drive positioner]
3	B	GROUND
4	B	GROUND
5	B	ILLUMINATION CONTROL SIGNAL [Without automatic drive positioner]
5	B/P	ILLUMINATION CONTROL SIGNAL [With automatic drive positioner]
8	G	TRIP RESET SWITCH SIGNAL [Without automatic drive positioner]
8	SB	TRIP RESET SWITCH SIGNAL [With automatic drive positioner]
10	P	METER CONTROL SWITCH SIGNAL
11	G	ENTER SWITCH SIGNAL
12	BR	SELECT SWITCH SIGNAL [Without automatic drive positioner]
12	R	SELECT SWITCH SIGNAL [With automatic drive positioner]
13	W	ALTERNATOR CONTROL SIGNAL [Without automatic drive positioner]
13	W	ALTERNATOR CONTROL SIGNAL [With automatic drive positioner]
14	G	ILLUMINATION CONTROL SIGNAL [Without automatic drive positioner]
14	V	ILLUMINATION CONTROL SIGNAL [With automatic drive positioner]
15	BR	AIR BAG SIGNAL
16	L	ENGINE COOLANT TEMPERATURE SIGNAL
18	L	AMBIENT SENSOR SIGNAL [Without automatic drive positioner]
18	LG	AMBIENT SENSOR SIGNAL [With automatic drive positioner]
19	R	A/C AUTO AMP CONNECTION RECOGNITION SIGNAL
20	G	AMBIENT SENSOR GROUND [Without automatic drive positioner]
20	Y	AMBIENT SENSOR GROUND [With automatic drive positioner]
21	L	CAN-L
22	P	GROUND
23	B	FUEL LEVEL SENSOR GROUND
24	B	FUEL LEVEL SENSOR SIGNAL [Without automatic drive positioner]
24	BR	FUEL LEVEL SENSOR SIGNAL [With automatic drive positioner]
25	W	ALTERNATOR SIGNAL [Without automatic drive positioner]
25	W	ALTERNATOR SIGNAL [With automatic drive positioner]
26	BR	PARKING BRAKE SWITCH SIGNAL
27	BE	BRAKE FLUID LEVEL SWITCH SIGNAL [Without automatic drive positioner]
27	Y	BRAKE FLUID LEVEL SWITCH SIGNAL [With automatic drive positioner]
28	V	SECURITY SIGNAL
29	G	WASHER LEVEL SWITCH SIGNAL

JRLWE2037GB

< WIRING DIAGRAM >

Terminal No.	Color Of Wire	Signal Name (Specification)
1	GR	RR
2	G	OUTPUT 4
3	P	FR
4	W	IGN
5	BE	OUTPUT 3
6	B/Y	GROUND
7	P	INPUT 3
8	R	OUTPUT 5
9	GR	INPUT 2
10	W	INPUT 4
11	R	INPUT 1
12	B	INPUT 5
13	B	

Terminal No.	Color Of Wire	Signal Name (Specification)
1	GR	RR
2	G	OUTPUT 4
3	P	FR
4	W	IGN
5	BE	OUTPUT 3
6	B/Y	GROUND
7	P	INPUT 3
8	R	OUTPUT 5
9	GR	INPUT 2
10	W	INPUT 4
11	R	INPUT 1
12	B	INPUT 5
13	B	

67	B	-
68	W	-
69	SHIELD	-
70	B	-
71	W	-
72	G	-
74	GR	-
75	G	-
77	W	-
78	R	-
79	W	-
80	G	-
81	L	-
82	W	-
87	V	-
88	LG	-
89	G	-
90	Y	-
91	GR	-
92	LG	-

Connector No.	M103
Connector Name	COMBINATION SWITCH
Connector Type	TH16FW-NH

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

Terminal No.	Color Of Wire	Signal Name (Specification)
1	GR	RR
2	G	OUTPUT 4
3	P	FR
4	W	IGN
5	BE	OUTPUT 3
6	B/Y	GROUND
7	P	INPUT 3
8	R	OUTPUT 5
9	GR	INPUT 2
10	W	INPUT 4
11	R	INPUT 1
12	B	INPUT 5
13	B	

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

Terminal No.	Cable or Wire	Signal Name (Specification)
1	W	REAR WINDOW DEF RELAY CONT
2	R	COMBI SW INPUT 5
3	G	COMBI SW INPUT 4
4	BE	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	W	COMBI SW INPUT 1
7	W	KEY C/VL UNLOCK SW
8	GR	PM SW COM1 With auto A/G
8	Y	KEY LOCK SW With manual A/G
9	GR	STOP LAMP SW 1
12	GR	DOOR LK & UNLK SW LOCK
13	BR	DOOR LK & UNLK SW UNLOCK
14	L	OPTICAL SENS
15	W	REAR WINDOW DEF SW
16	Y	DIMMER
17	O	SENS PWR SP/LY
18	R	RECEIV SENS GND
21	GR	NATS ANT AMP
23	W	SECURITY IND CONT
24	B	DONGLE UNK
25	P	NATS ANT AMP
27	O	A/C ON
28	BR	BLOWER FAN ON
29	P	HAZARD SW
30	L	BR DOOR GPHR SW
31	G	DR DOOR UNLK SW
32	R	COMBI SW OUTPUT 5
33	W	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	GR	COMBI SW OUTPUT 2
36	GR	COMBI SW OUTPUT 1
37	G	RECEIVED COMM
38	BE	RECEIVED COMM

39	L	CAN-H
40	P	CAN-L

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-FHA6-SA

		43	44	45	46	47	48	49
50	51			53	54	55		

Terminal	Color Of Wire	Signal Name (Specification)
1	Br	IGN
2	W	IGN
3	W	IGN
4	Gr	REAR WIPER STOP POSITION
5	W	REAR WIPER STOP SW
6	W	PASS SW
7	W	SL DOOR SW
8	W	SL DOOR SW
9	W	SL DOOR SW
10	Gr	SL DOOR SW
11	Gr	SL DOOR SW
12	Gr	SL DOOR SW
13	Gr	SL DOOR SW
14	Gr	SL DOOR SW
15	Gr	SL DOOR SW
16	Gr	SL DOOR SW
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93	Gr	SL DOOR SW
94	Gr	SL DOOR SW
95	Gr	SL DOOR SW
96	Gr	SL DOOR SW
97	Gr	SL DOOR SW
98	Gr	SL DOOR SW
99	Gr	SL DOOR SW
100	Gr	SL DOOR SW

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA

56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			

Terminal No.	Color Of Wire	Signal Name [Specification]
56	P	INT ROOM LAMP PWR SPLY
57	Y	BAT
58	O	AIR BAG
59	SB	PASS DOOR LINK OUT/DET

WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM

60	V	TURN SIG LFT OUTPUT
61	G	TURN SIG RHT OUTPUT
62	W	STEP LAMP CONT
63	R	INT FROOM LAMP CONT
64	W	GRANK REQ
65	V	ALL DOOR LOCK OUTPUT
66	G	DR DOOR UNLK OUTPUT
67	B	GROUND
68	L	PW PWR SPLY (IGN)
69	P	PW PWR SPLY (BAT)
70	L	BAT

Connector No.	M184
Connector Name	AV CONTROL UNIT
Connector Type	TH24FW-NH

136	37	38	39	40	41	42	43	44	45	46	47
48	49	50	51	52						57	58



Terminal No.	Color	Wire	Signal Name [Specification]
36	O		SIGNAL VCC
37	SB		SIGNAL GND
38	G		RGB (R) SIGNAL
39	W		COM1 (DISP->CONT)
40	B		RGB AREA (YS) SIGNAL
41	SHIELD		SHIELD
42	W		RGB SYNC
43	R		RGB (R-RED) SIGNAL
44	W		RGB (G-GREEN) SIGNAL
45	B		RGB (B-BLUE) SIGNAL
46	W		COMPOSITE IMAGE SIGNAL
47	B		COMPOSITE IMAGE SIGNAL
48	BR		INVERTER VCC
49	P		INVERTER GND
50	R		V+
51	B		COM1 (CONT->DISP)
52	SHIELD		SHIELD
57	SHIELD		SHIELD
58	SHIELD		SHIELD

Connector No.	M186
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH

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



Terminal No.	Color	Wire	Signal Name [Specification]
76	LG		AV COMM (L)
77	LG		AV COMM (L)
78	LG		AV COMM (L)
79	SB		AV COMM (H)
80	P		CAN-L
81	L		CAN-H
82	R		SW GND
87	R		SOUND SIGNAL (+)
88	W		SOUND SIGNAL (-)
90	BR		HEADPHONE SOUND SIGNAL RH (+)
91	Y		HEADPHONE SOUND SIGNAL RH (-)
92	P		VEHICLE SPEED SIGNAL (8-PULSE)
93	R		PARKING BRAKE
94	W		REVERSE
95	G		IGNITION
96	W		DISK SIGNAL
102	W		AUX SOUND SIGNAL LH (-)
103	B		AUX SOUND SIGNAL LH (+)
104	R		AUX SOUND SIGNAL RH (+)
105	GR		SHIELD
106	P		HEADPHONE SOUND SIGNAL LH (+)
107	L		HEADPHONE SOUND SIGNAL LH (-)

Connector No.	M193
Connector Name	AV CONTROL UNIT
Connector Type	TH32FW-NH

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



Terminal No.	Color	Wire	Signal Name [Specification]
85	R		PARKING BRAKE
86	R		COMPOSITE IMAGE SIGNAL
87	R		COMPOSITE IMAGE SIGNAL
88	R		COMPOSITE IMAGE SIGNAL
89	SHIELD		SHIELD
90	SHIELD		SHIELD
91	SHIELD		SHIELD
92	W		MICROPHONE VCC
93	W		COM1 (CONT->DISP)
94	P		CAN-L
95	LG		AV COMM (L)
96	LG		AV COMM (L)
97	BE		MR OUTPUT
98	G		IGNITION
99	W		REVERSE
100	P		VEHICLE SPEED SIGNAL (8-PULSE)
101	SHIELD		SHIELD
102	B		COMPOSITE IMAGE SYNC
103	SHIELD		SHIELD
104	SHIELD		SHIELD
105	W		MICROPHONE SIGNAL
106	W		COM1 (DISP->CONT)
107	L		CAN-H
108	SHIELD		SHIELD
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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

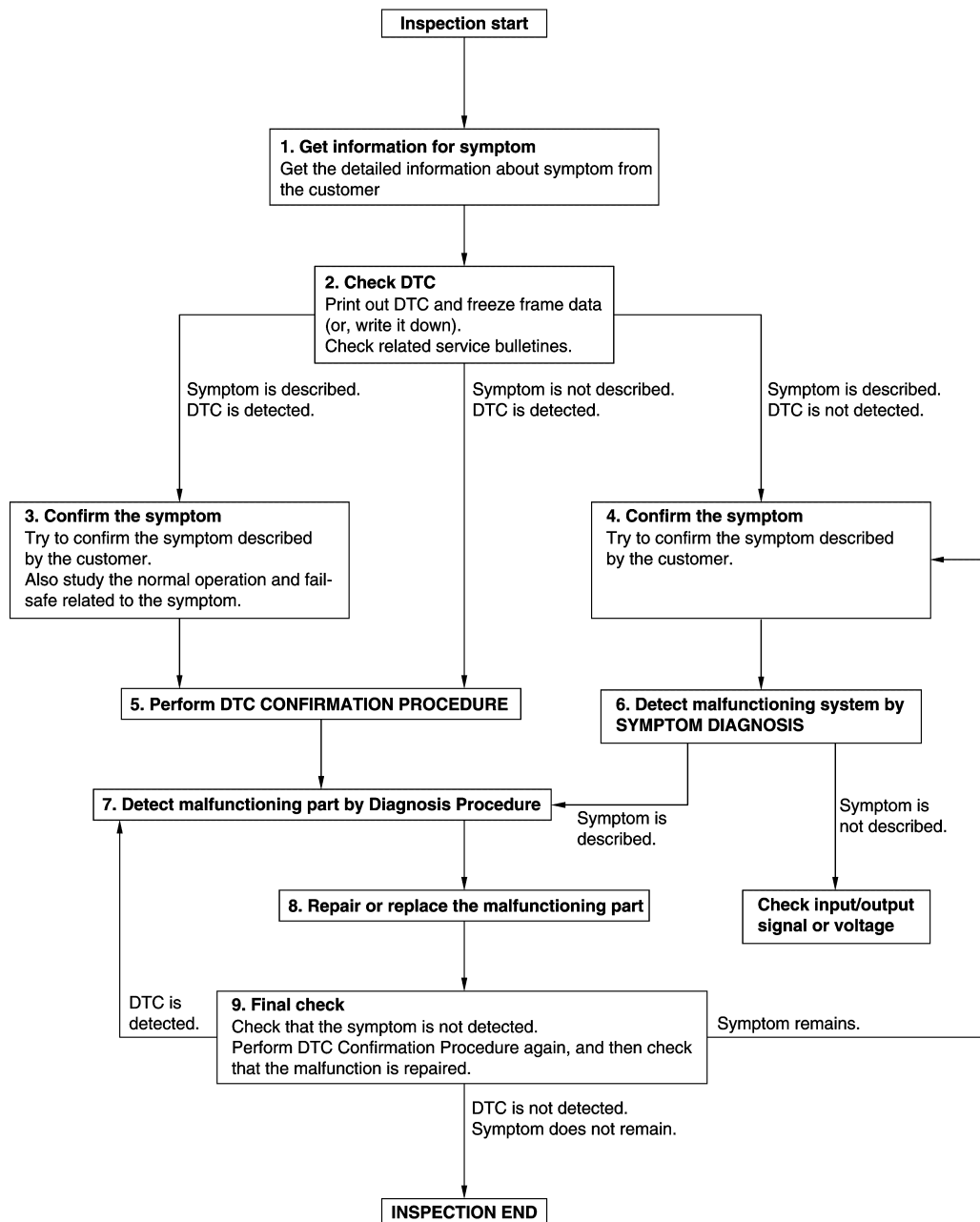
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000011322361

OVERALL SEQUENCE



JMKIA8652GB

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-42, "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-42, "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.

FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:0000000011322362

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 front wiper (LO) operation normally?

- YES >> Front wiper motor LO circuit is normal.
NO >> Refer to [WW-37, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000011322363

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

1. Turn ignition switch OFF, and wait for 20 seconds or more.
2. Disconnect front wiper motor connector.
3. Turn ignition switch ON, and wait for 10 seconds.
4. Check voltage between front wiper motor harness connector and ground.

(+)		(-)	Voltage (Approx.)
Front wiper motor			
Connector	Terminal		
E12	5	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 V). This operations repeats 5 times, and then IPDM E/R stops voltage supply. To perform the check again, turn ignition switch OFF, wait for 20 seconds or more, and then perform the check.

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.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E10	4	E12	5	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	4		Not existed

Is the inspection result normal?

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

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000011322364

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 front wiper (HI) operation normally?

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

Diagnosis Procedure

INFOID:000000011322365

1.CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

CONSULT ACTIVE TEST

1. Turn ignition switch OFF, and wait for 20 seconds or more.
2. Disconnect front wiper motor connector.
3. Turn ignition switch ON.
4. Select "FRONT WIPER" of IPDM E/R active test item.
5. With operating the test item, check voltage between front wiper motor harness connector and ground.

(+)		(-)	Condition		Voltage (Approx.)
Front wiper motor					
Connector	Terminal				
E12	3	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 V). This operations repeats 5 times, and then IPDM E/R stops voltage supply. To perform the check again, turn ignition switch OFF, wait for 20 seconds or more, and then perform the check.

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.

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E10	5	E12	3	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	5		Not existed

Is the inspection result normal?

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

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000011322366

1.CHECK FRONT WIPER STOP POSITION SIGNAL

CONSULT DATA MONITOR

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

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

Is the status of item normal?

- YES >> Front wiper stop position signal circuit is normal.
NO >> Refer to [WW-39. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000011322367

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.

(+)		(-)	Voltage (Approx.)
Front wiper motor			
Connector	Terminal		
E12	1	Ground	9-16V

Is the inspection result normal?

- YES >> Replace front wiper motor.
NO >> GO TO 2.

2.CHECK FRONT WIPER MOTOR CIRCUIT

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

IPDM E/R		Front wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
E10	16	E12	1	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E10	16		Not existed

Is the inspection result normal?

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

FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000011322368

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.

Front wiper motor		Ground	Continuity
Connector	Terminal		
E12	4		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace harness.

WASHER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

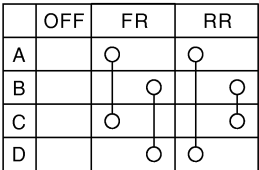
Component Inspection

INFOID:0000000011322369

1.CHECK WASHER SWITCH

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

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



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Combination switch		Condition	Continuity
Terminal			
3	4	Front washer switch ON	Existed
1	6		
1	4	Rear washer switch ON	
6	3		

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace combination switch (Wiper and washer switch).

WW

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER MOTOR CIRCUIT

Component Function Check

INFOID:000000011322370

1.CHECK REAR WIPER ON OPERATION

CONSULT ACTIVE TEST

1. Select "RR WIPER" of BCM active test item.
2. With operating the test item, check rear wiper operation.

On : Rear wiper ON operation

Off : Stop the rear wiper.

Is rear wiper operation normally?

- YES >> Rear wiper motor circuit is normal.
NO >> Refer to [WW-42, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000011322371

1.CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

CONSULT ACTIVE TEST

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. Select "RR WIPER" of BCM active test item.
6. With operating the test item, check voltage between rear wiper motor harness connector and ground.

(+)		(-)	Condition		Voltage (Approx.)
Rear wiper motor					
Connector	Terminal				
D193	1	Ground	REAR WIPER	On	9 – 16 V (5 seconds)*

*: When "REAR WIPER" is "On" for 5 seconds or more during active test of CONSULT, BCM stops the power supply according to rear wiper motor protection function. To perform the check again, turn "REAR WIPER" to "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	
M122	54	D193	1	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M122	54		Not existed

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-98, "Removal and Installation"](#).
NO >> Repair or replace harness.

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

3.CHECK REAR WIPER MOTOR GROUND OPEN CIRCUIT

Check continuity between rear wiper motor harness connector and ground.

Rear wiper motor		Ground	Continuity
Connector	Terminal		
D193	3		Existed

Is the inspection result normal?

YES >> Replace rear wiper motor.

NO >> Repair or replace harness.

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REAR WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:0000000011322372

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	On
		Except stop position	Off

Is the status of item normal?

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

NO >> Refer to [WW-44, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000011322373

1.CHECK REAR WIPER MOTOR 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 (Approx.)
Rear wiper motor			
Connector	Terminal		
D193	4	Ground	12V

Is the inspection result normal?

YES >> Replace rear wiper motor.

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	
M122	44	D193	4	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M122	44		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-98, "Removal and Installation"](#).

NO >> Repair or replace harness.

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

WIPER AND WASHER SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000011322374

Symptom		Probable malfunction location	Inspection item
Front wiper does not operate	HI only	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-96, "Symptom Table"
		- IPDM E/R - Harness between IPDM E/R and front wiper motor - Front wiper motor	Front wiper motor (HI) circuit Refer to WW-38, "Component Function Check" .
		Front wiper request signal - BCM - IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	Lo and INT	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-96, "Symptom Table"
		- IPDM E/R - Harness between IPDM E/R and front wiper motor - Front wiper motor	Front wiper motor (LO) circuit Refer to WW-37, "Component Function Check"
		Front wiper request signal - BCM - IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	INT only	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-96, "Symptom Table"
		Front wiper request signal - BCM - IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
	HI, LO and INT	SYMPTOM DIAGNOSIS "FRONT WIPER DOES NOT OPERATE" Refer to WW-48, "Diagnosis Procedure" .	
Front wiper does not stop	HI only	- Combination switch - BCM	Combination switch Refer to BCS-96, "Symptom Table"
		Front wiper request signal - BCM - IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	LO only	- Combination switch - BCM	Combination switch Refer to BCS-96, "Symptom Table"
		Front wiper request signal - BCM - IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"
		IPDM E/R	—
	INT only	- Combination switch - BCM	Combination switch Refer to BCS-96, "Symptom Table"
		Front wiper request signal - BCM - IPDM E/R	IPDM E/R DATA MONITOR "FR WIP REQ"

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WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom		Probable malfunction location	Inspection item
Front wiper does not operate normally	Intermittent adjustment cannot be performed.	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-96, "Symptom Table"
		BCM	—
	Intermittent control linked with vehicle speed cannot be performed	Check that the wiper setting is linked with vehicle speed Refer to WW-18, "WIPER : CONSULT Function (BCM - WIPER)" .	
	Wiper is not linked to the washer operation.	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-96, "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. (Fail-safe)]	- IPDM E/R - Harness between IPDM E/R and front wiper motor - Front wiper motor	Front wiper stop position signal circuit Refer to WW-39, "Component Function Check"
	ON only	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-96, "Symptom Table"
	INT only	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-96, "Symptom Table"
	ON and INT	- Combination switch - Harness between combination switch and BCM - BCM	Combination switch Refer to BCS-96, "Symptom Table"
		- BCM - Harness between rear wiper motor and BCM - Harness between rear wiper motor and ground - Rear wiper motor	Rear wiper motor circuit Refer to BCS-96, "Symptom Table"
Rear wiper does not stop	ON only	- Combination switch - BCM	Combination switch Refer to BCS-96, "Symptom Table"
	INT only	- Combination switch - BCM	Combination switch Refer to BCS-96, "Symptom Table"
Rear wiper does not operate normally	Wiper is not linked to the washer operation.	- Combination switch - Harness between rear wiper motor and BCM - BCM	Combination switch Refer to BCS-96, "Symptom Table"
	Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)]	- BCM - Harness between rear wiper motor and BCM - Rear wiper motor	Rear wiper stop position signal circuit Refer to WW-44, "Component Function Check"

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:0000000011322375

FRONT WIPER MOTOR PROTECTION FUNCTION

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

REAR WIPER MOTOR PROTECTION FUNCTION

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

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FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description

INFOID:000000011322376

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:000000011322377

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.

Lo : Front wiper LO operation

Hi : Front wiper HI operation

Off : Stop the front wiper.

Is front wiper operation normally?

YES >> GO TO 4.

NO >> GO TO 2.

2.CHECK FUSES

Check that the following fuse is not fusing.

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	60	30 A

Is the inspection result normal?

YES >> GO TO 3.

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

3.CHECK FRONT WIPER MOTOR GROUND CIRCUIT

Check front wiper motor ground circuit. Refer to [WW-40, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4.CHECK FRONT WIPER 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	On	Hi
		Off	Stop
	Front wiper switch LO	On	Low
		Off	Stop

Is the inspection result normal?

YES >> Replace IPDM E/R.

NO >> GO TO 5.

5.CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-96, "Symptom Table"](#).

Is combination switch normal?

YES >> Replace BCM. Refer to [BCS-98, "Removal and Installation"](#).

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

NO >> Repair or replace the applicable parts.

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FRONT WIPER

< REMOVAL AND INSTALLATION >

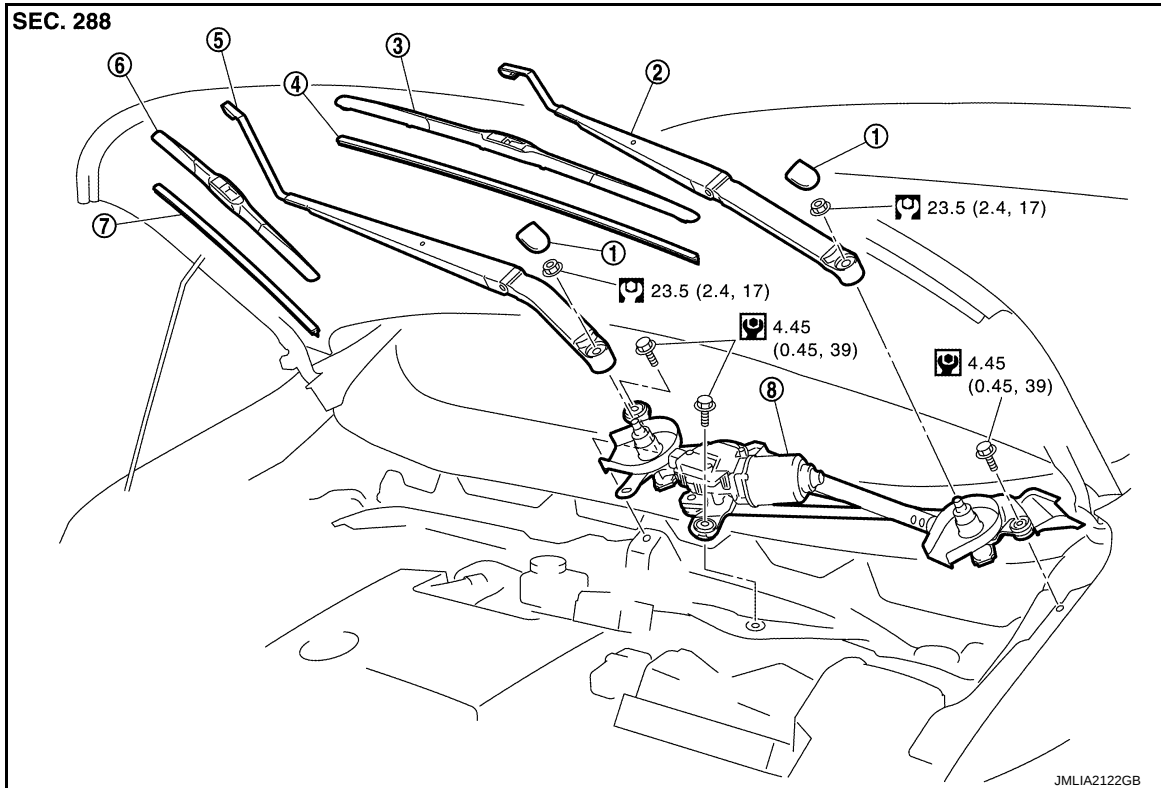
REMOVAL AND INSTALLATION

FRONT WIPER

Exploded View

INFOID:000000011322378

REMOVAL VIEW



- 1. Front wiper arm cap
- 4. Front wiper refill LH
- 7. Front wiper refill RH

- 2. Front wiper arm LH
- 5. Front wiper arm RH
- 8. Front wiper drive assembly

- 3. Front wiper blade LH
- 6. Front wiper blade RH

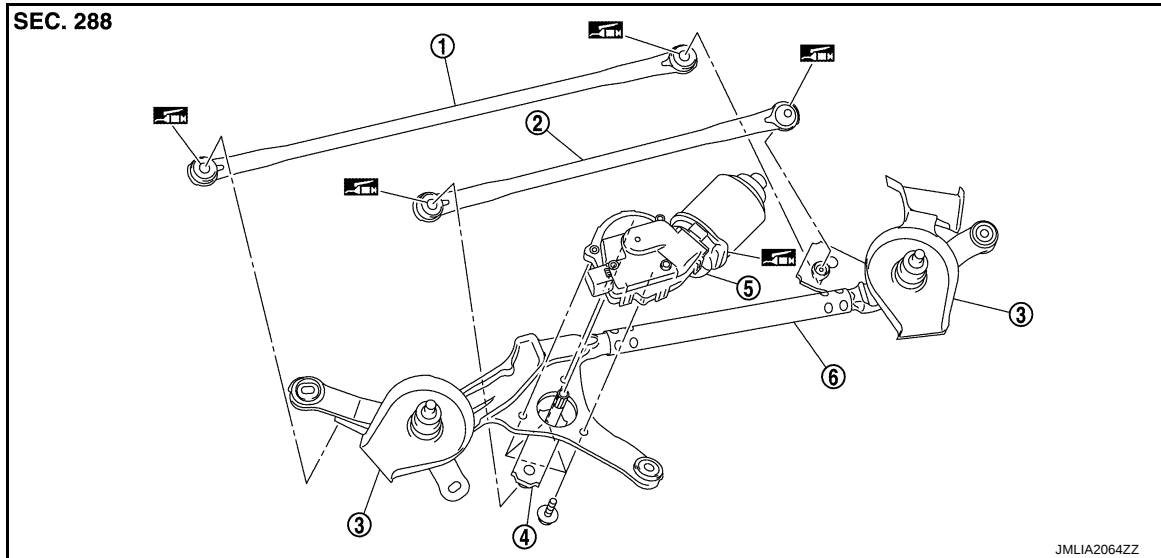
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DISASSEMBLY VIEW

FRONT WIPER

< REMOVAL AND INSTALLATION >



- | | | |
|--------------------|-------------------------------|----------------------|
| 1. Wiper linkage 2 | 2. Wiper linkage 1 | 3. Shaft seal |
| 4. Motor arm | 5. Front wiper motor assembly | 6. Front wiper frame |

: Multi-purpose grease or an equivalent

WIPER ARM

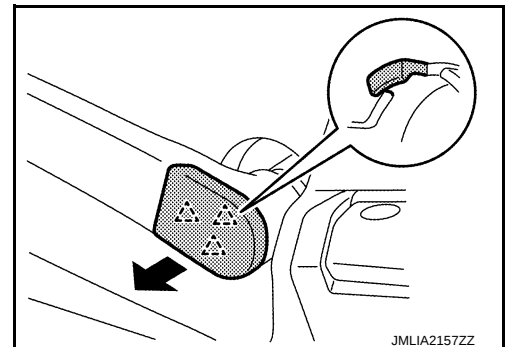
WIPER ARM : Removal and Installation

INFOID:000000011322379

REMOVAL

1. Operate front wiper to move it to the auto stop position.
2. Fully open hood assembly.
3. Pull front wiper arm caps in direction indicated by arrow as shown in the figure. Remove front wiper arm caps.

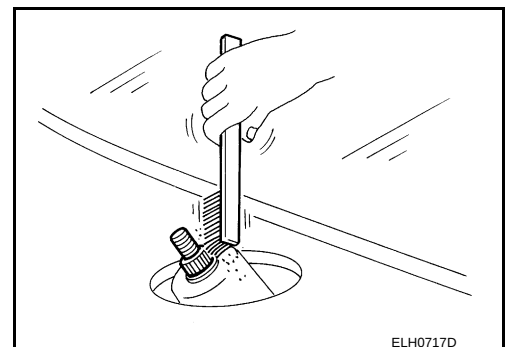
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4. Remove front wiper arm mounting nuts.
5. Raise front wiper arm, and remove front wiper arm from the front wiper drive assembly.

INSTALLATION

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



FRONT WIPER

< REMOVAL AND INSTALLATION >

2. Operate front wiper motor to move the wiper to the auto stop position.
3. Install front wiper arm to front wiper drive assembly. Temporarily tighten mounting nut.
4. Adjust front wiper blade position. Refer to [WW-52, "WIPER ARM : Adjustment"](#).
5. Install front wiper arms by tightening the mounting nuts.
For the specified torque, refer to [WW-50, "Exploded View"](#).
6. Operation wiper to move it to the auto stop position.

CAUTION:

Before operating wiper, inject washer fluid so that windshield glass damage by wiper operation is prevented.

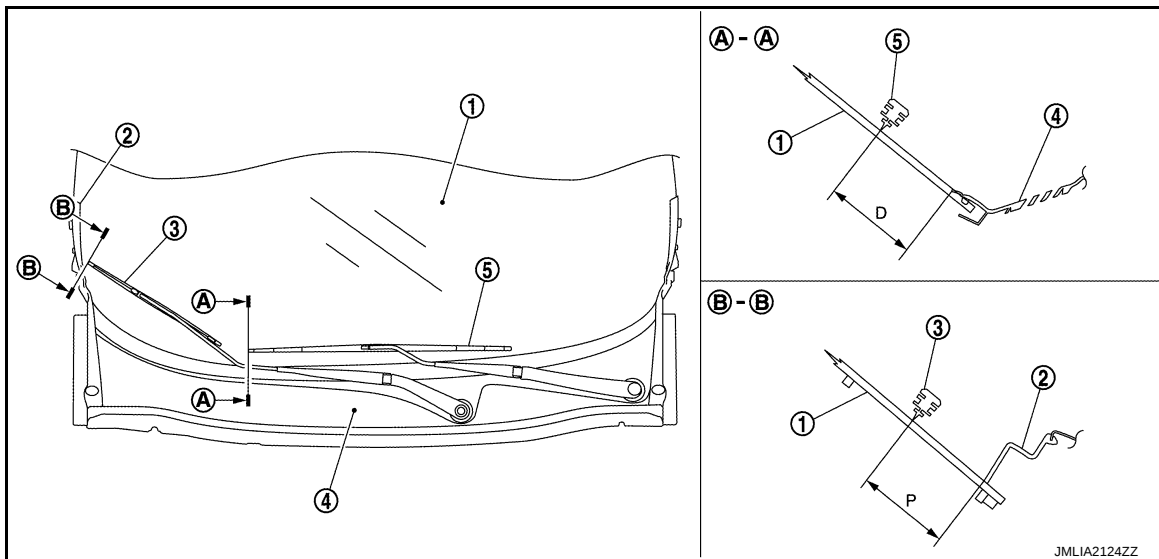
7. Check that front wiper blades stop at the specified position.
8. Install front wiper arm caps.

WIPER ARM : Adjustment

INFOID:000000011322380

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

2. Front fender cover

3. Front wiper blade RH

4. Cowl top cover

5. Front wiper blade LH

Standard clearance

D : 35.0 ± 7.5 mm (1.378 ± 0.295 in)

P : 37.2 ± 7.5 mm (0.295 ± 0.295 in)

WIPER BLADE

WIPER BLADE : Removal and Installation

INFOID:000000011322381

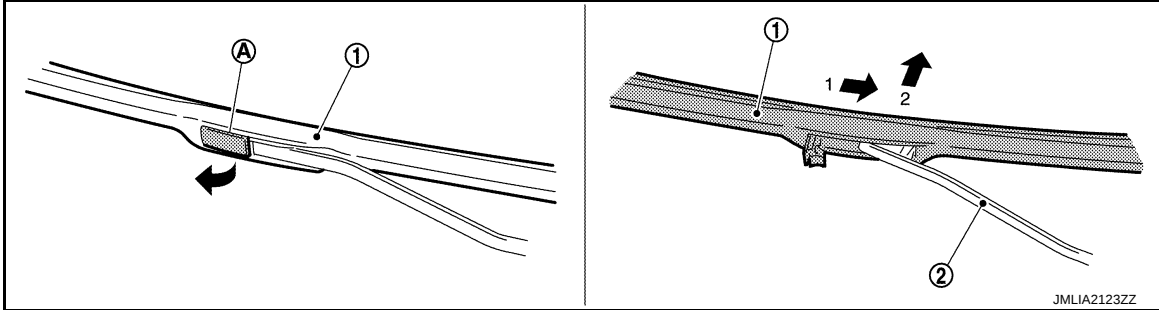
REMOVAL

1. Lift up front wiper arm, and set to the position where wiper arm can be locked back.

FRONT WIPER

< REMOVAL AND INSTALLATION >

2. Remove lock lever (A) of front wiper blade (1). Pull front wiper blade in the direction indicated by the arrow as shown in the figure to remove front wiper blade from front wiper arm (2).



CAUTION:

Wrap wiper arm using a shop cloth so that wiper blade does not damage windshield glass.

INSTALLATION

Install in the reverse order of removal.

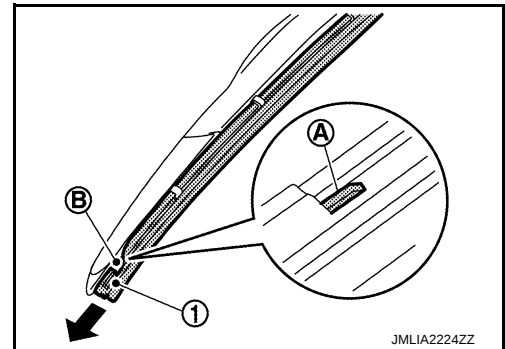
WIPER REFILL

WIPER REFILL : Removal and Installation

INFOID:0000000011322382

REMOVAL

1. Remove front wiper blade from the front wiper arm. Refer to [WW-52, "WIPER BLADE : Removal and Installation"](#).
2. From portion (A) of front wiper refill (1), disengage front wiper blade portion (B) and remove front wiper refill in the direction indicated by the arrow as shown in the figure.

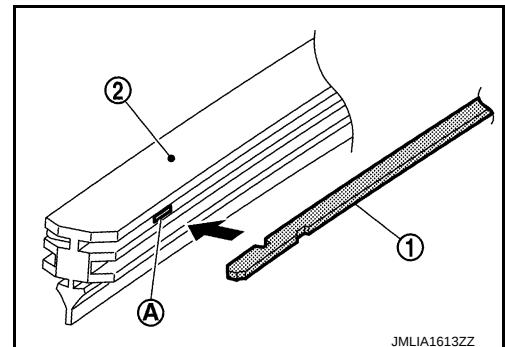


INSTALLATION

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

CAUTION:

- For installation of vertebra (1), align cutout of vertebra to convex portion (A) of wiper refill (2) as shown in the figure.



- For installation of wiper refill, check that wiper refill is not twisted while installing.
- Check that wiper refill is inserted normally from the correct direction.

WIPER DRIVE ASSEMBLY

WIPER DRIVE ASSEMBLY : Removal and Installation

INFOID:0000000011322383

REMOVAL

FRONT WIPER

< REMOVAL AND INSTALLATION >

1. Remove front wiper arm (LH and RH). Refer to [WW-51, "WIPER ARM : Removal and Installation"](#).
2. Remove cowl top cover. Refer to [EXT-22, "Removal and Installation"](#).
3. Disconnect front wiper motor harness connector.
4. Remove mounting bolts from front wiper drive assembly.
5. Remove front wiper drive assembly from the vehicle.

INSTALLATION

Install in the reverse order of removal.

WIPER DRIVE ASSEMBLY : Disassembly and Assembly

INFOID:0000000011322384

DISASSEMBLY

1. Remove wiper linkage 1 and 2 from the front wiper frame.
CAUTION:
Never bend the linkage or damage the plastic part of the ball joint when removing the wiper linkage.
2. Remove wiper motor mounting nuts, and then remove the motor arm.
3. Remove wiper motor mounting bolts, and then remove the front wiper motor from the front wiper frame.

ASSEMBLY

1. Connect front wiper motor harness connector.
2. Operate front wiper to move it to the auto stop position.
3. Disconnect front wiper motor harness connector.
4. Install front wiper motor to front wiper frame.
5. Install front wiper motor to the motor arm.
6. Install wiper linkage 1 to the front wiper motor and the front wiper frame.
7. Install wiper linkage 2 to the front wiper frame.

CAUTION:

- **Never drop wiper motor or cause it to come into contact with other parts.**
- **Be careful for the grease condition at the wiper motor and wiper linkage joint (retainer). Apply multi-purpose grease or an equivalent if necessary.**

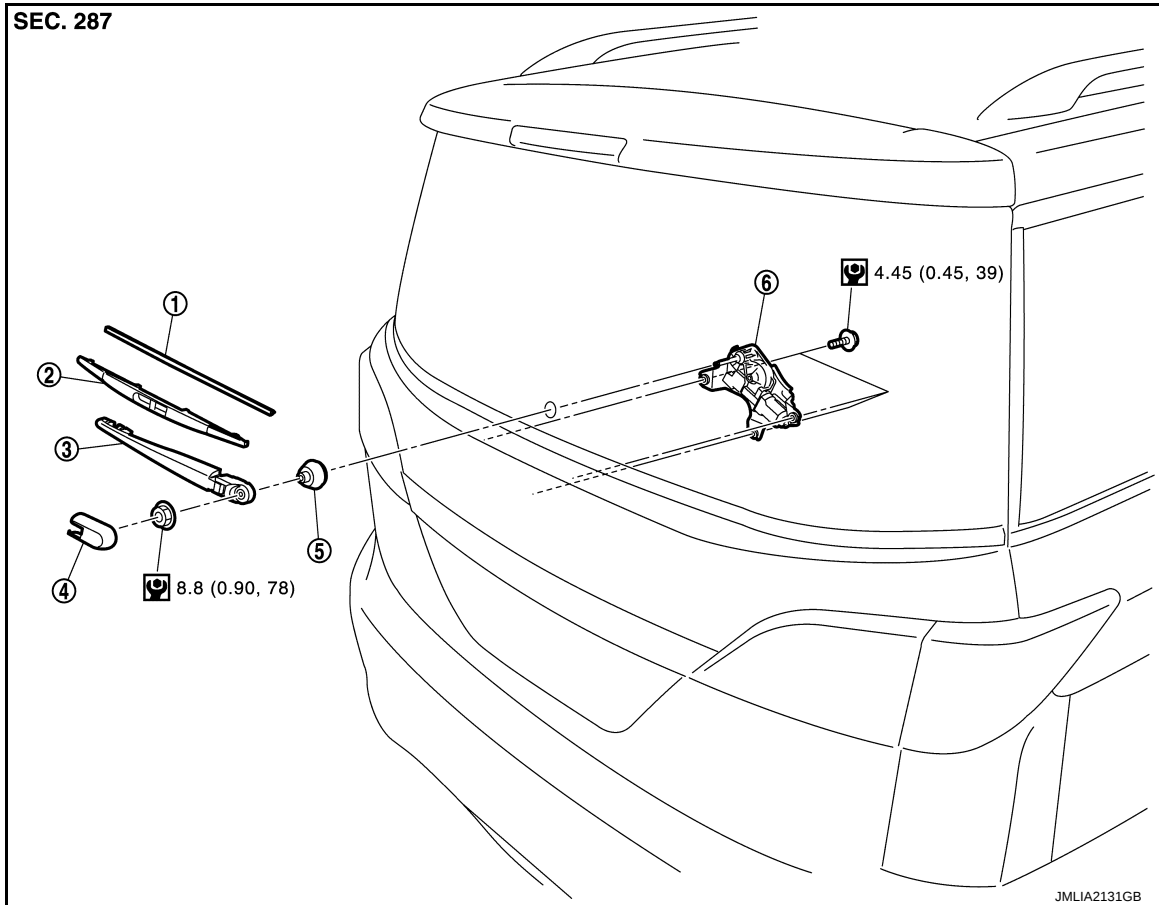
REAR WIPER

< REMOVAL AND INSTALLATION >

REAR WIPER

Exploded View

INFOID:0000000011322385



- | | | |
|-------------------------|---------------------|---------------------|
| 1. Rear wiper refill | 2. Rear wiper blade | 3. Rear wiper arm |
| 4. Rear wiper arm cover | 5. Pivot seal | 6. Rear wiper motor |

: N·m (kg-m, in-lb)

WIPER ARM

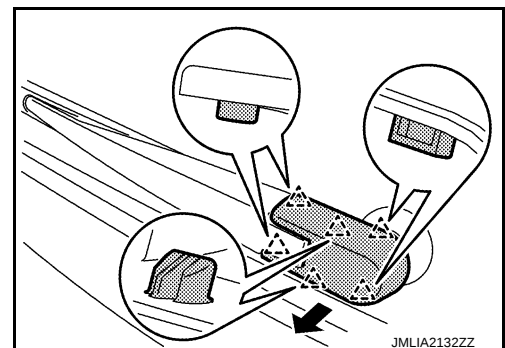
WIPER ARM : Removal and Installation

INFOID:0000000011322386

REMOVAL

1. Operate rear wiper to move it to the auto stop position.
2. Pull rear wiper arm caps in direction indicated by arrow as shown in the figure. Remove rear wiper arm caps.

: Pawl



3. Remove rear wiper arm mounting nuts.

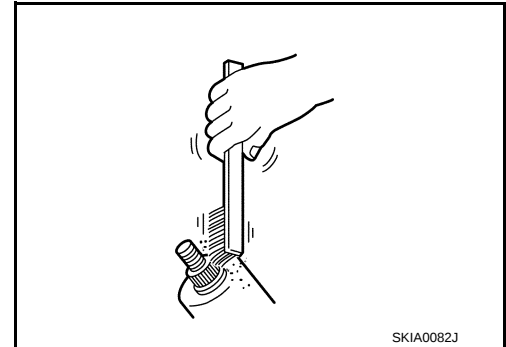
REAR WIPER

< REMOVAL AND INSTALLATION >

4. Raise rear wiper arm, and remove rear wiper arm from the vehicle.

INSTALLATION

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



2. Operate rear wiper motor to move the wiper to the auto stop position.
3. Install rear wiper arm to wiper drive assembly. Temporarily tighten mounting nut.
4. Adjust rear wiper blade position. Refer to [WW-56, "WIPER ARM : Adjustment"](#).
5. Install rear wiper arms by tightening the mounting nuts.
For the specified torque, refer to [WW-55, "Exploded View"](#).
6. Operate rear wiper to move it to the auto stop position.

CAUTION:

Before operating rear wiper, inject washer fluid so that windshield glass damage by rear wiper operation is prevented.

7. Check that rear wiper blades stop at the specified position.
8. Install rear wiper arm caps.

WIPER ARM : Adjustment

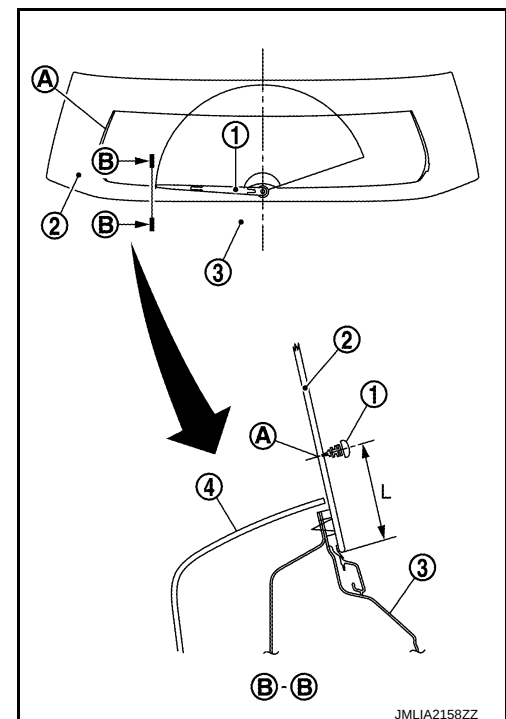
INFOID:000000011322387

REAR WIPER BLADE POSITION ADJUSTMENT

Set the wiper blade top on the defrosting wire (A) (clearance between the end of back door glass and the top of wiper blade center).

Standard clearance

1. Rear wiper blade
 2. Back door window glass
 3. Back door panel
 4. Back door trim
- A : Rear defogger wire print
L : $50.2 \pm 7.5 \text{ mm}$ ($1.976 \pm 0.295 \text{ in}$)



WIPER BLADE

REAR WIPER

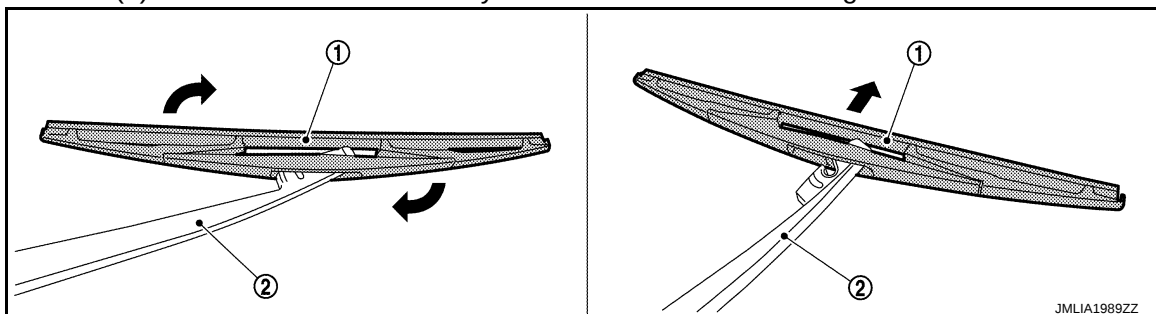
< REMOVAL AND INSTALLATION >

WIPER BLADE : Removal and Installation

INFOID:0000000011322388

REMOVAL

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



CAUTION:

Wrap wiper arm using a shop cloth so that wiper blade does not damage back door window glass.

INSTALLATION

Install in the reverse order of removal.

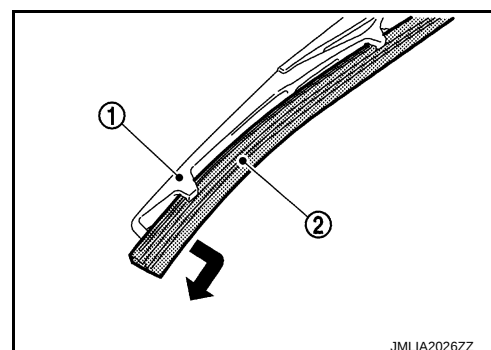
WIPER REFILL

WIPER REFILL : Removal and Installation

INFOID:0000000011322389

REMOVAL

1. Remove rear wiper blade from the rear wiper arm. Refer to [WW-57, "WIPER BLADE : Removal and Installation"](#).
2. Remove rear wiper refill (2) from the end portion of rear wiper blade (1) in the direction indicated by the arrow as shown in the figure. Remove rear wiper refill while sliding it sideward.



INSTALLATION

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

CAUTION:

- For installation of wiper refill, check that wiper refill is not twisted while installing.
- Check that wiper refill is inserted normally from the correct direction.

WIPER MOTOR

WIPER MOTOR : Removal and Installation

INFOID:0000000011322390

REMOVAL

1. Remove rear wiper arm. Refer to [WW-55, "WIPER ARM : Removal and Installation"](#).
2. Remove back door lower finisher. Refer to [INT-48, "BACK DOOR LOWER FINISHER : Removal and Installation"](#).
3. Disconnect rear wiper motor harness connector.
4. Remove rear wiper motor mounting nut.
5. Raise rear wiper motor, and remove rear wiper motor from the vehicle.

CAUTION:

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

REAR WIPER

< REMOVAL AND INSTALLATION >

6. Remove pivot seal from the back door.

INSTALLATION

Install in the reverse order of removal.

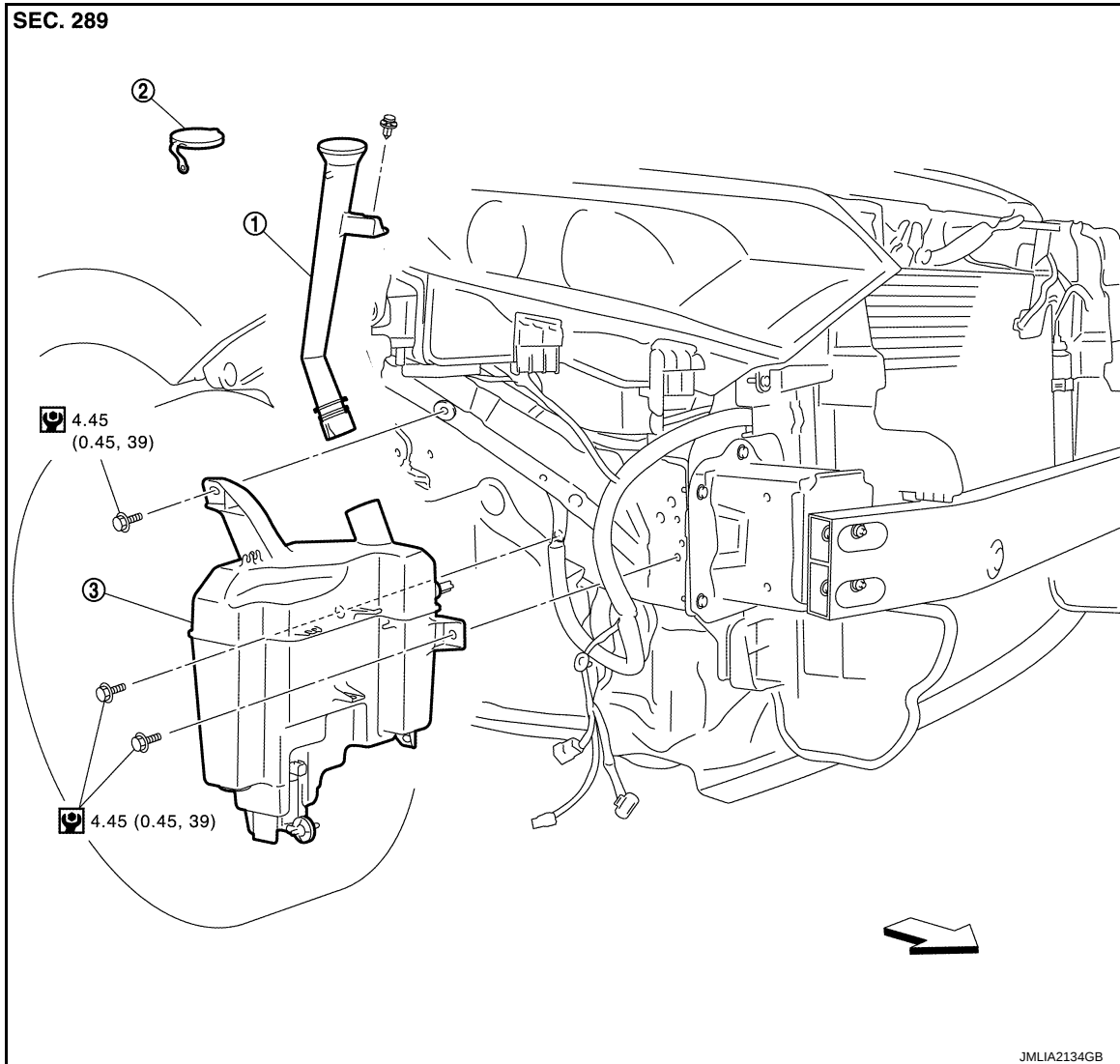
WASHER TANK

< REMOVAL AND INSTALLATION >

WASHER TANK

Exploded View

INFOID:0000000011322391



1. Washer tank inlet

2. Washer tank inlet cap

3. Washer tank assembly

: N·m (kg-m, in-lb)

: Vehicle front

Removal and Installation

INFOID:0000000011322392

REMOVAL

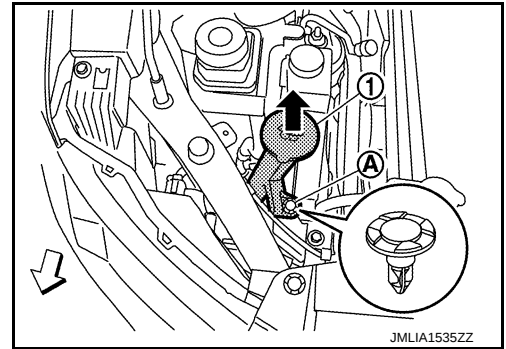
1. Fully open hood assembly.

WASHER TANK

< REMOVAL AND INSTALLATION >

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

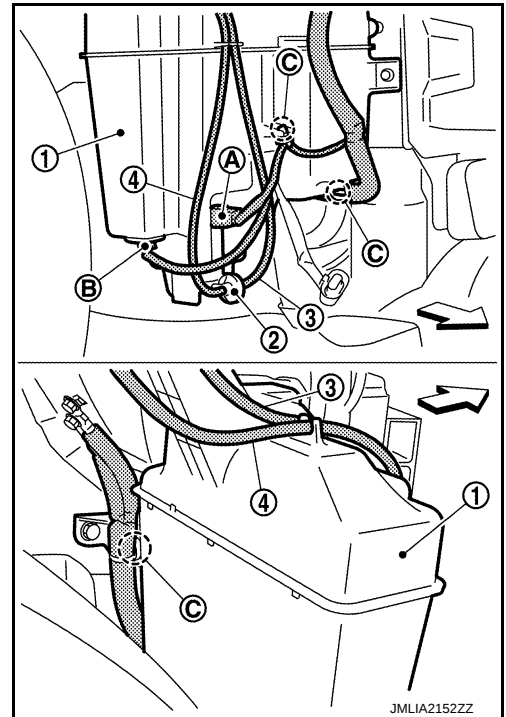
⇐ : Vehicle front



4. Remove fender protector RH (front). Refer to [EXT-23. "Removal and Installation"](#).
5. Disconnect washer pump connector (A) and washer level switch connector (B).
6. Remove harness fixing clips (C) from the washer tank (1).
7. Disconnect front washer tube (3) and rear washer tube (4) from the front & rear washer pump (2).

○ : Clip

⇐ : Vehicle front



8. Remove washer tank mounting bolts.
9. Remove washer tank from the vehicle.

INSTALLATION

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

CAUTION:

- When installing tube to front & rear washer pump, be sure to install to front and rear correctly.
- Add water up to the top of the washer tank inlet after installing. Check that there is no leakage.

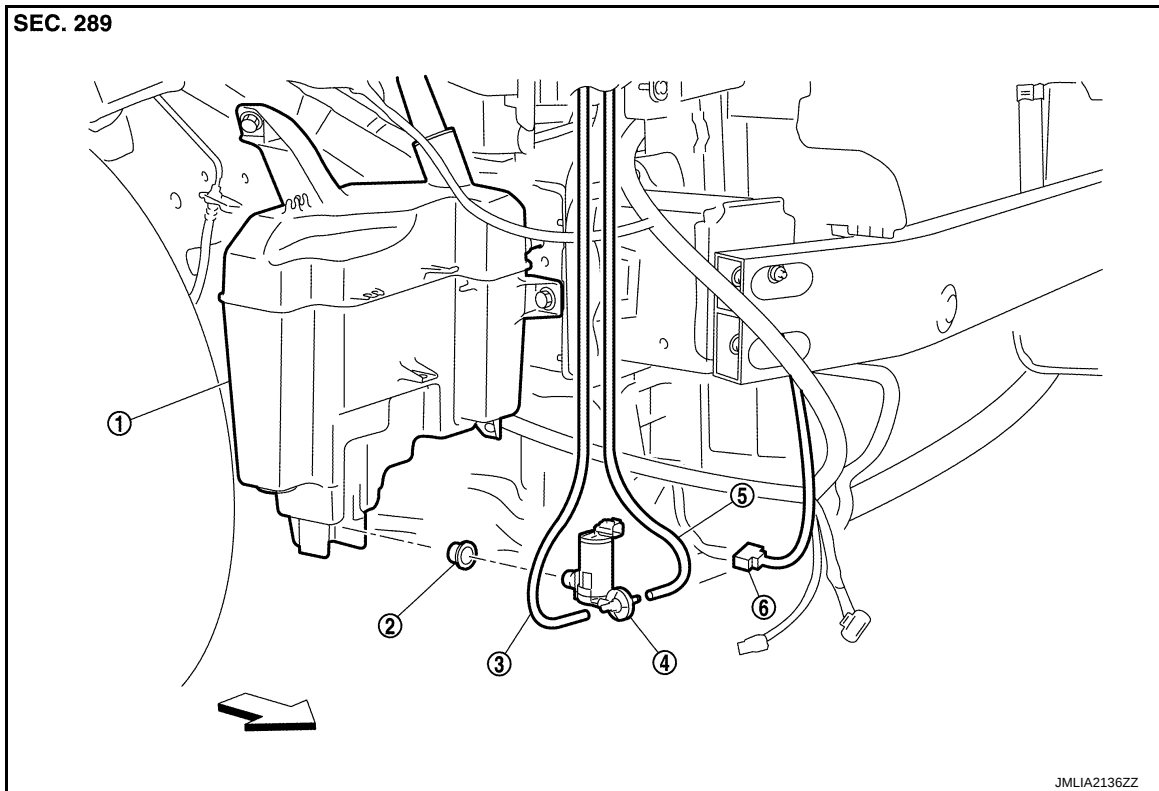
WASHER PUMP

< REMOVAL AND INSTALLATION >

WASHER PUMP

Exploded View

INFOID:0000000011322393



- | | | |
|-----------------------------|----------------------|--------------------------|
| 1. Washer tank | 2. Packing | 3. Rear washer tube |
| 4. Front & rear washer pump | 5. Front washer tube | 6. Washer pump connector |

⇐ : Vehicle front

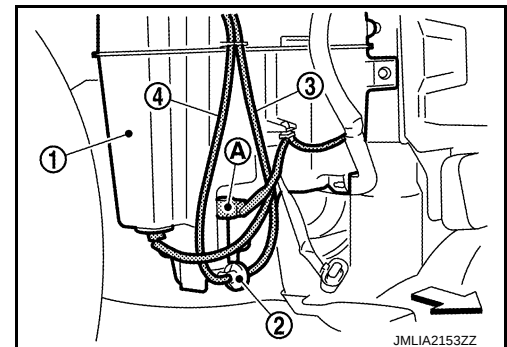
Removal and Installation

INFOID:0000000011322394

REMOVAL

1. Remove fender protector RH (front). Refer to [EXT-23, "Removal and Installation"](#).
2. Disconnect washer pump connector (A).
3. Disconnect front washer tube (3) and rear washer tube (4) from the front & rear washer pump (2).
4. Remove washer pump from the washer tank (1).

⇐ : Vehicle front



5. Remove packing from the washer tank.

INSTALLATION

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

CAUTION:

- When installing tube to front & rear 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.

WASHER PUMP

< REMOVAL AND INSTALLATION >

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

WASHER NOZZLE & TUBE

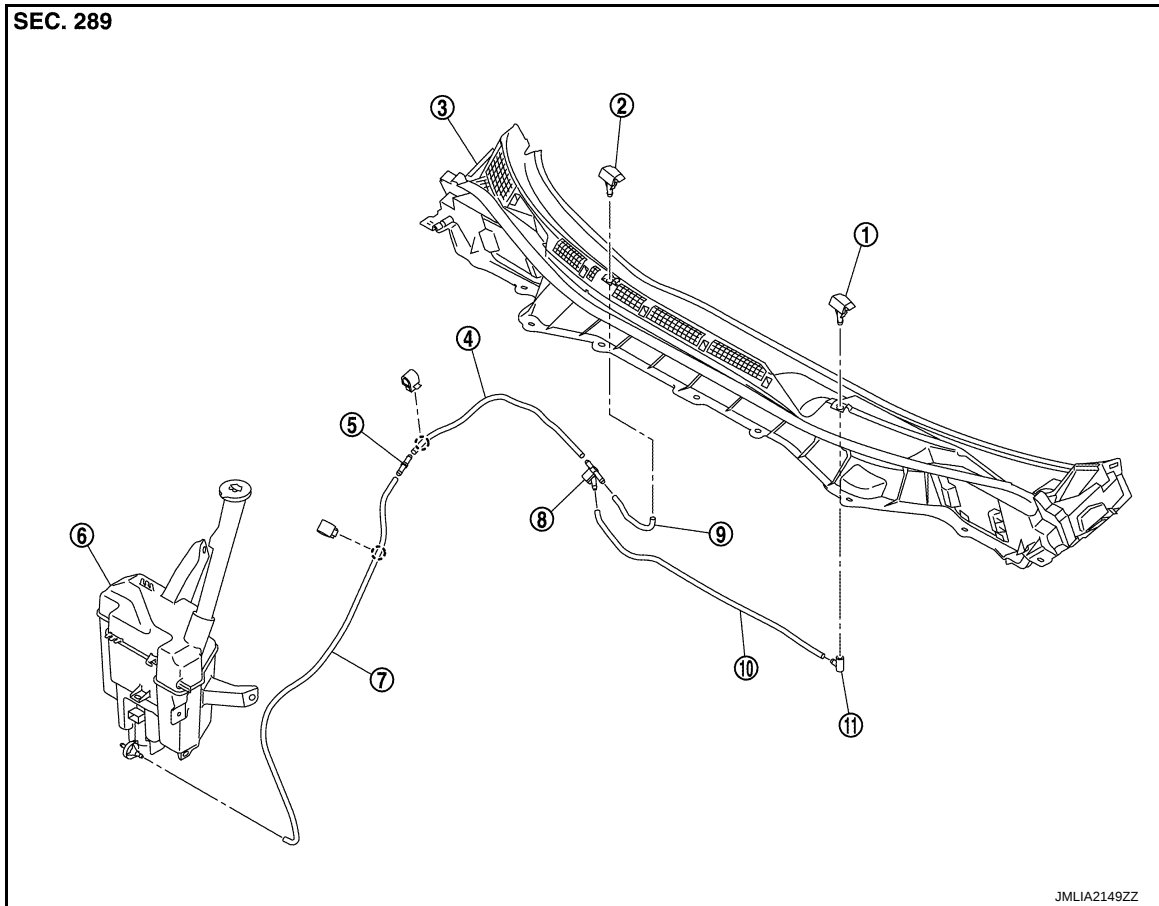
< REMOVAL AND INSTALLATION >

WASHER NOZZLE & TUBE

Exploded View

INFOID:0000000011322395

FRONT WASHER NOZZLE & TUBE



- | | | |
|---------------------------|---------------------------|-------------------------|
| 1. Front washer nozzle LH | 2. Front washer nozzle RH | 3. Cowl top cover |
| 4. Front washer tube B | 5. Joint A | 6. Washer tank assembly |
| 7. Front washer tube A | 8. Check valve | 9. Front washer tube C |
| 10. Front washer tube D | 11. Joint B | |

○ : Clip

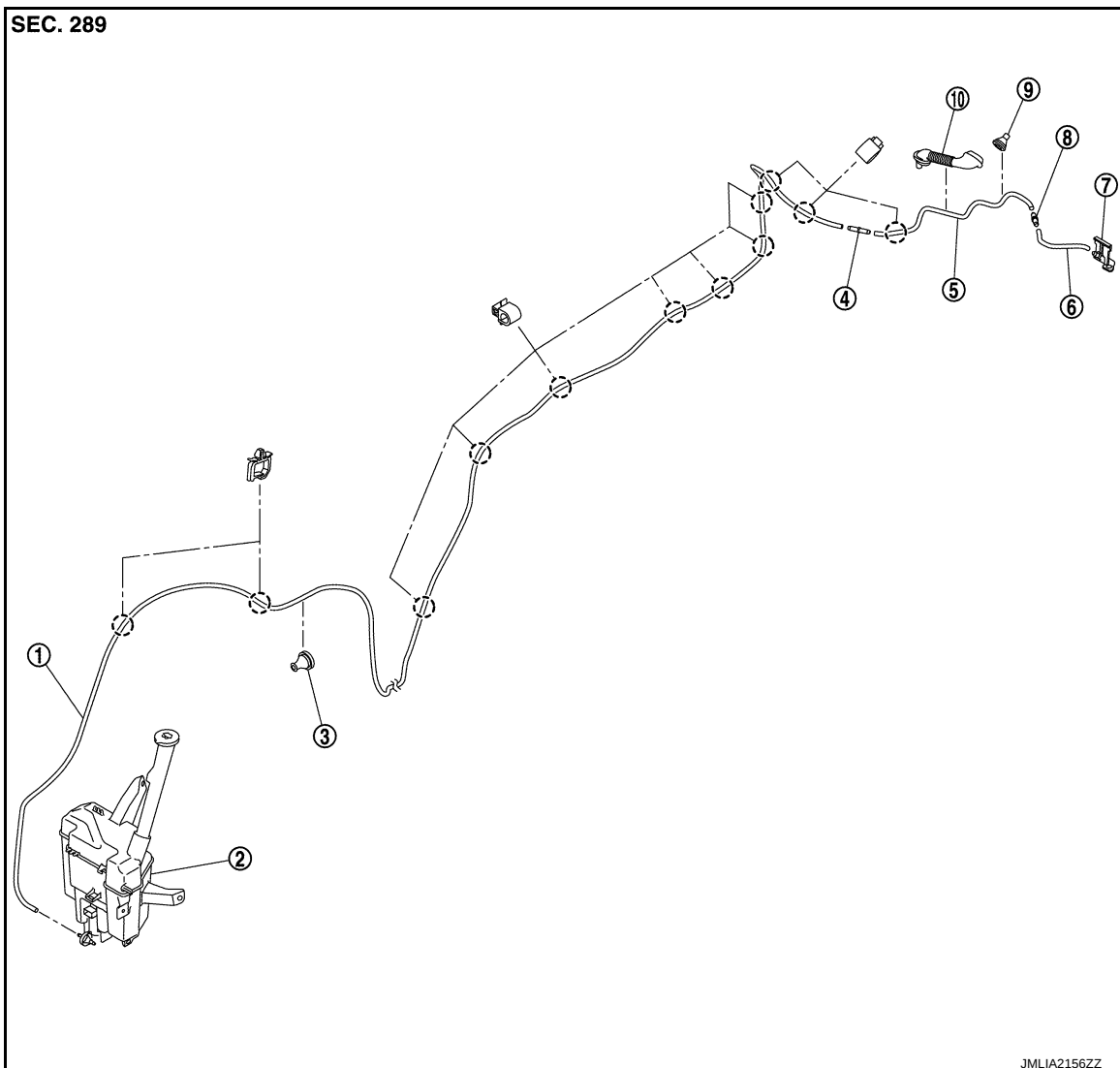
REAR WASHER NOZZLE & TUBE

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

WW

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >



- | | | |
|---------------------------|-------------------------|-----------------------|
| 1. Rear washer tube A | 2. Washer tank assembly | 3. Grommet A |
| 4. Joint A | 5. Rear washer tube B | 6. Rear washer tube C |
| 7. Rear washer nozzle | 8. Joint B | 9. Grommet B |
| 10. Back door seal rubber | | |

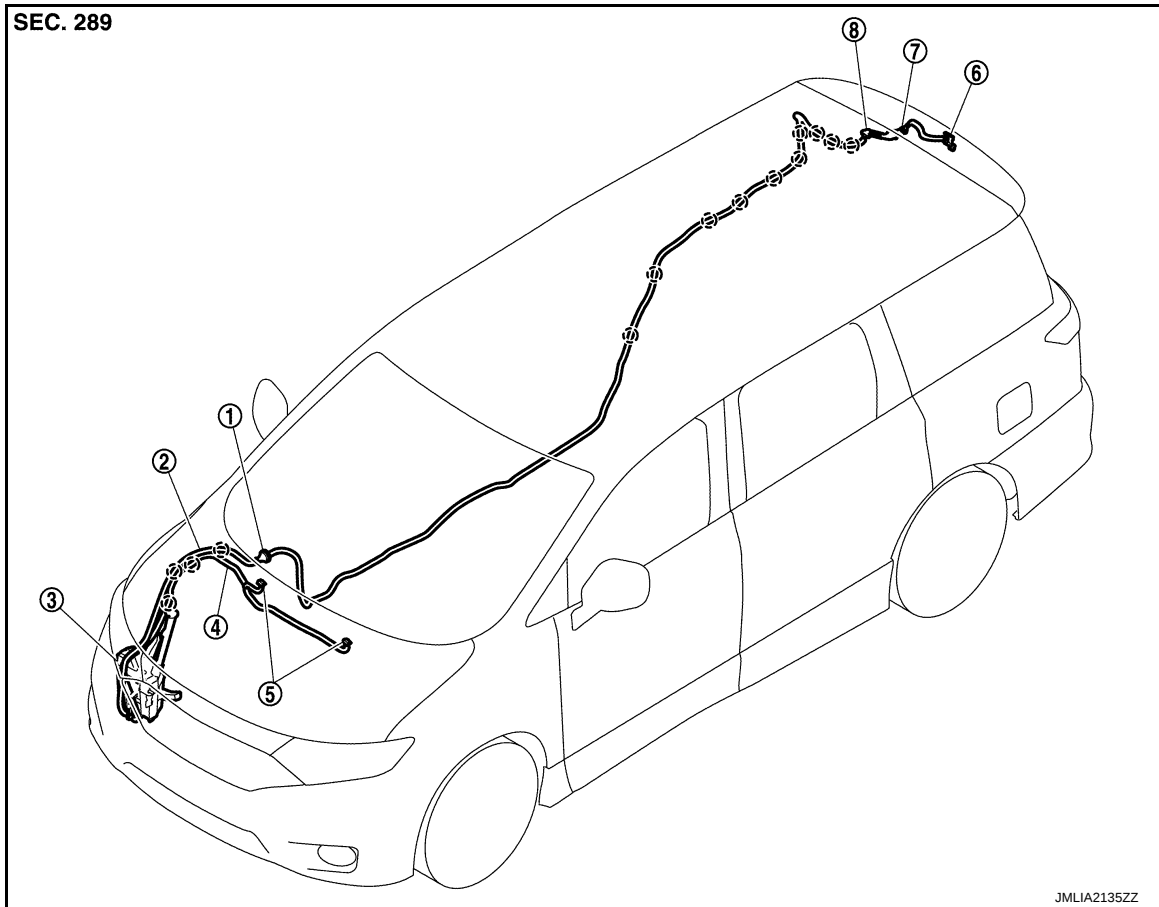
() : Clip

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

Hydraulic Layout

INFOID:0000000011322396



- | | | |
|----------------------|--------------------------|-------------------------|
| 1. Grommet A | 2. Rear washer tube | 3. Washer tank assembly |
| 4. Front washer tube | 5. Front washer nozzle | 6. Rear washer nozzle |
| 7. Grommet B | 8. Back door seal rubber | |

 : Clip

WASHER NOZZLE

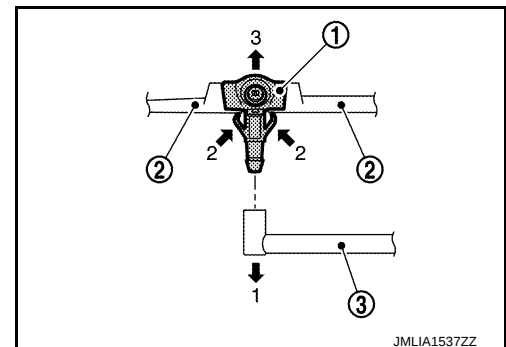
WASHER NOZZLE : Removal and Installation

INFOID:0000000011322397

FRONT WASHER NOZZLE

REMOVAL

1. Remove cowl top cover. Refer to [EXT-22, "Removal and Installation"](#).
2. Disconnect front washer tube (3) from the front washer nozzle (1).
3. Press front washer nozzle fixing pawls toward the direction shown by the arrows 2 and pull up remove from cowl top cover (2).



INSTALLATION

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

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

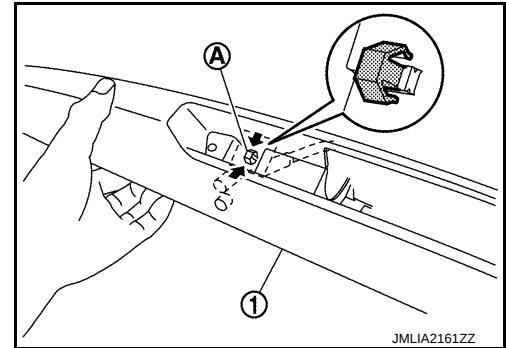
CAUTION:

- The spray positions differ, check that left and right nozzles are installed correctly.
- Adjust the washer nozzle spray position. Refer to [WW-66, "WASHER NOZZLE : Inspection and Adjustment"](#).

REAR WASHER NOZZLE

REMOVAL

1. Remove rear spoiler. Refer to [EXT-45, "Removal and Installation"](#).
2. Remove high-mounted stop lamp.
 - Xenon type: Refer to [EXL-117, "Removal and Installation"](#).
 - Halogen type: Refer to [EXL-226, "Removal and Installation"](#).
3. Press rear washer nozzle fixing pawls (A) toward the direction shown by the arrows and remove from rear spoiler (1).



4. Disconnect front washer tube from the front washer nozzle.

INSTALLATION

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

CAUTION:

Adjust the washer nozzle spray position. Refer to [WW-66, "WASHER NOZZLE : Inspection and Adjustment"](#).

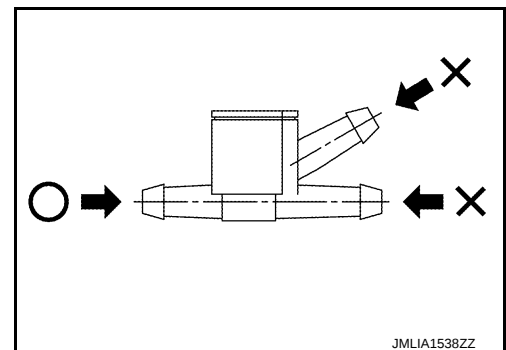
WASHER NOZZLE : Inspection and Adjustment

INFOID:000000011322398

INSPECTION

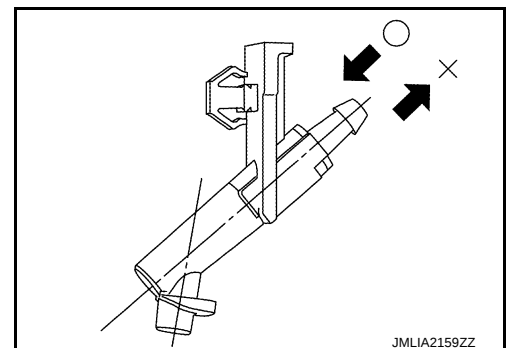
FRONT CHECK VALVE INSPECTION

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



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.



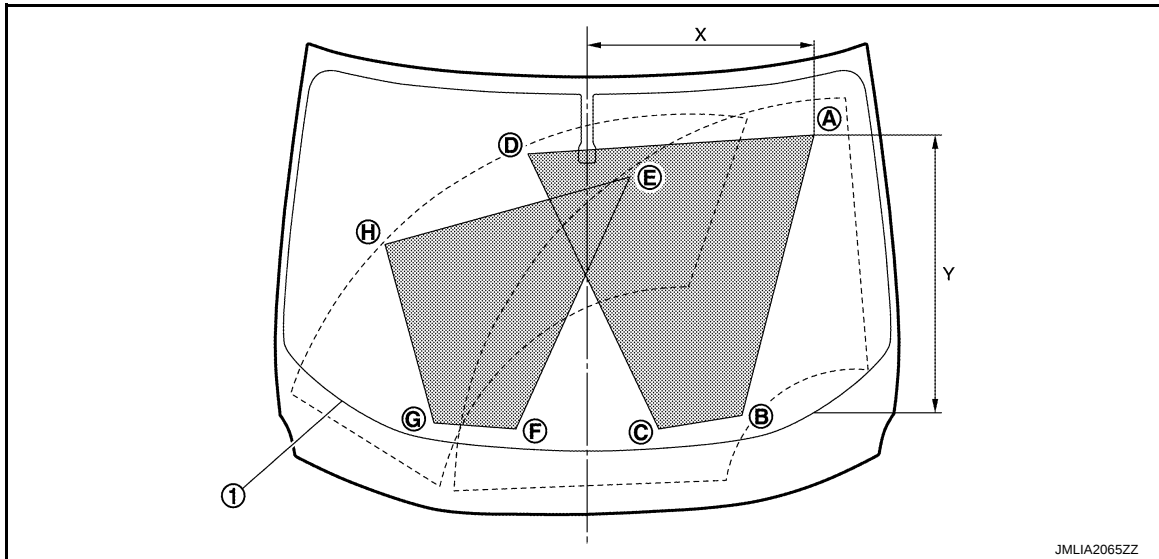
WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

ADJUSTMENT

FRONT WASHER NOZZLE SPRAY POSITION ADJUSTMENT

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



 : Spray area

1. Black printed frame line

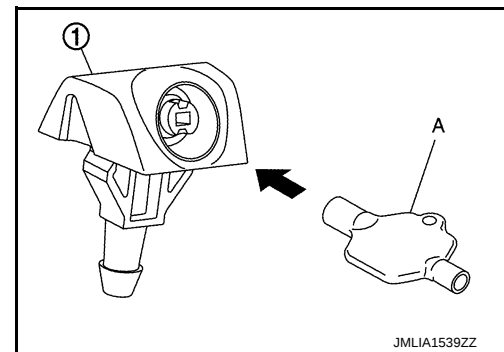
Unit: mm (in)

	Driver side				Passenger side			
	A	B	C	D	E	F	G	H
X	578 (22.76)	381 (15.00)	181 (7.13)	129 (5.08)	88 (3.46)	169 (6.65)	366 (14.41)	484 (19.06)
Y	638 (14.49)	62 (2.44)	56 (2.20)	703 (27.68)	674 (26.54)	49 (1.93)	61 (2.40)	504 (19.84)

Check that washer fluid is splayed on 70% or more the splay area () when spraying washer fluid. If the spray area deviates from the specification, adjust the washer nozzle.

CAUTION:

- Use washer nozzle adjuster (A) for nozzle (1) insert adjustment if the jet a is outside the angle.
- Never use needle or small pin.



NOTE:

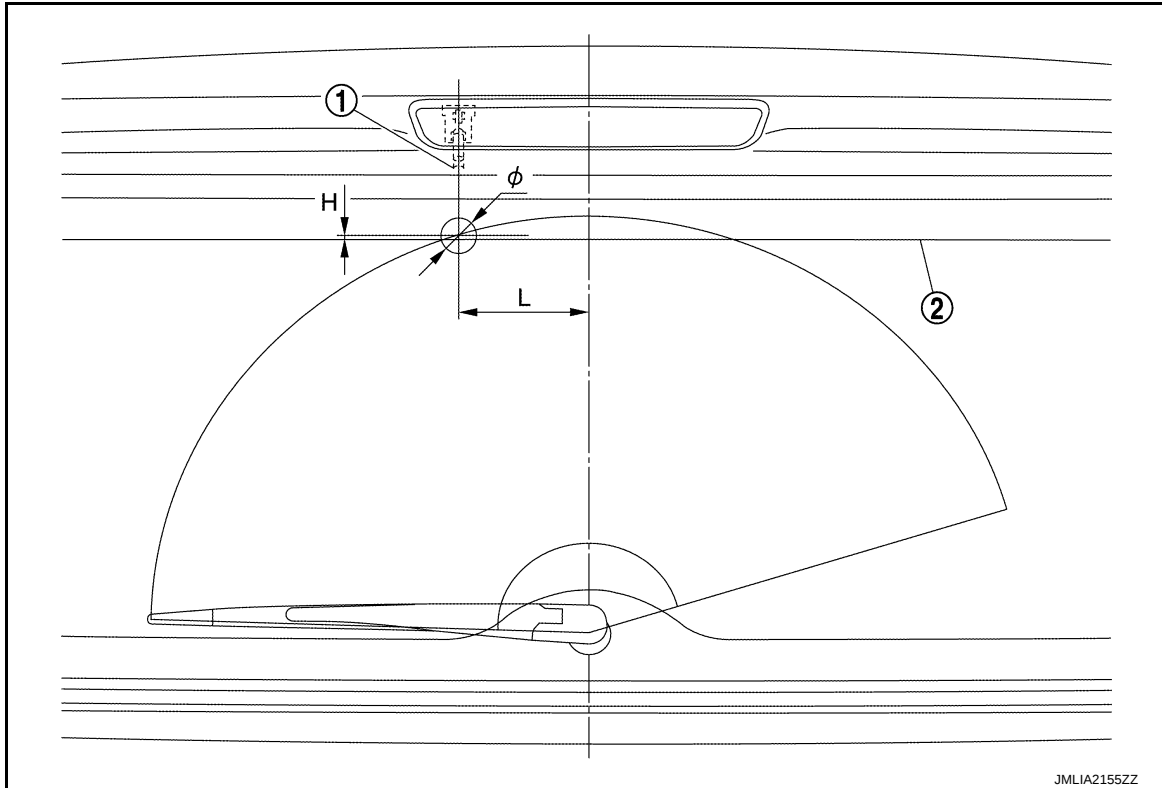
If wax or dust gets into the nozzle, remove wax or dust with a needle or small pin.

REAR WASHER NOZZLE SPRAY POSITION ADJUSTMENT

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

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

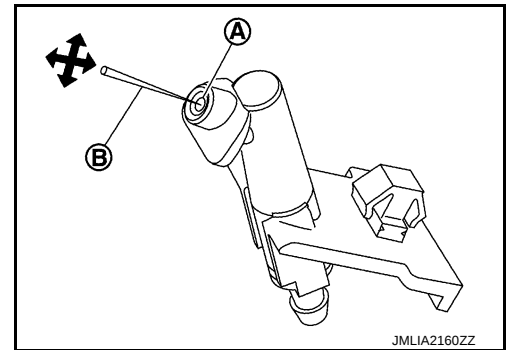


1. Rear washer nozzle
2. Black print frame line

Unit: mm (in)

H : Height	L : Length	φ : Spray position area
3.0 (0.118)	115.0 (4.528)	30 (1.181)

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



NOTE:

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

WASHER TUBE

WASHER TUBE : Removal and Installation

INFOID:0000000011322399

FRONT WASHER TUBE

REMOVAL

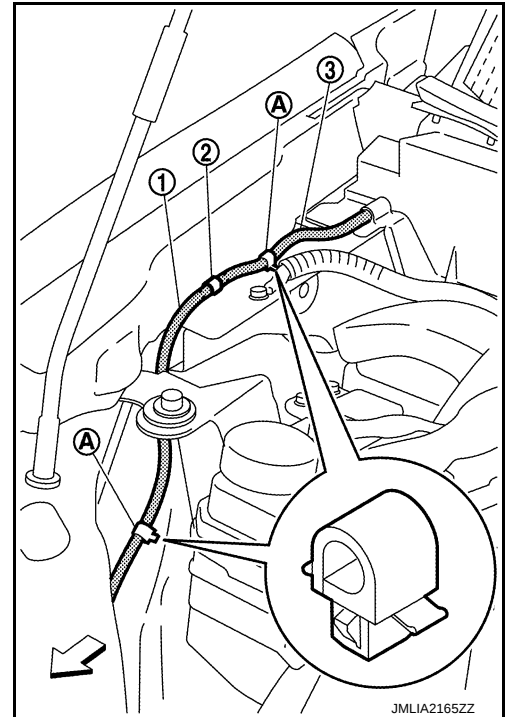
1. Fully open hood assembly.
2. Remove fender protector RH (front). Refer to [EXT-23, "Removal and Installation"](#).
3. Disconnect front washer tub A from the front & rear washer pump.

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

4. Disconnect front washer tube A (1) from joint A (2).
5. Remove front washer tube mounting clips (A) from the Vehicle.
6. Remove front washer tube mounting clips from front washer tube A and B (3).
7. Remove front washer tube A from the vehicle.

⇐ : Vehicle front



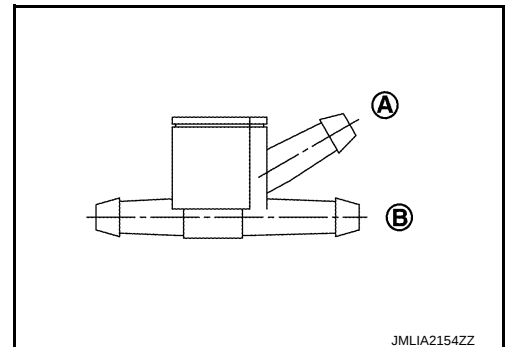
8. Remove cowl top cover. Refer to [EXT-22. "Removal and Installation"](#).
9. Disconnect front washer tube C and D from the front washer nozzle. Refer to [WW-65. "WASHER NOZZLE : Removal and Installation"](#).
10. Remove front washer tube B.
 - a. Disconnect front washer tube B from the cowl top cover.
 - b. Disconnect front washer tube B check valve.
11. Remove front washer tube C.
 - a. Disconnect front washer tube C from the cowl top cover.
 - b. Disconnect front washer tube C check valve.
12. Remove front washer tube D.
 - a. Disconnect front washer tube D from the cowl top cover.
 - b. Disconnect front washer tube D check valve.

INSTALLATION

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

CAUTION:

- When installing front washer tube C to the check valve, install to portion (B: RH side).
- When installing front washer tube D to the check valve, install to portion (A: LH side).



REAR WASHER TUBE

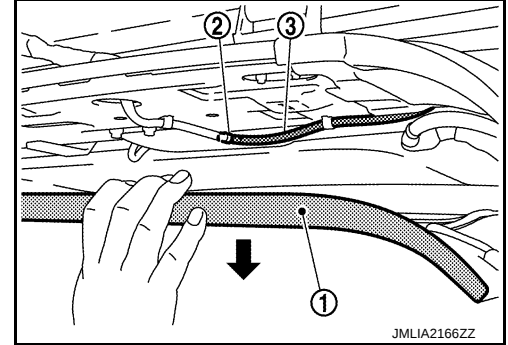
REMOVAL

1. Fully open hood assembly.
2. Remove fender protector RH (front). Refer to [EXT-23. "Removal and Installation"](#).
3. Disconnect rear washer tube A from the front & rear washer pump.

WASHER NOZZLE & TUBE

< REMOVAL AND INSTALLATION >

4. Remove front kicking plate and rear kicking plate. Refer to [INT-22, "KICKING PLATE : Removal and Installation"](#).
5. Remove luggage side lower finisher and back pillar garnish. Refer to [INT-27, "BACK PILLAR GARNISH : Removal and Installation"](#).
6. Remove third assist grip (LH and RH), and then remove headlining assembly rear clips. Refer to [INT-35, "Removal and Installation"](#).
7. Slightly lower the headlining assembly (1) rear and secure work space.
8. Disconnect rear washer tube B (3) from joint B (2).



9. Remove back door upper finisher. Refer to [INT-49, "BACK DOOR UPPER FINISHER : Removal and Installation"](#).
10. Disconnect rear washer tube C from the rear washer nozzle. Refer to [WW-65, "WASHER NOZZLE : Removal and Installation"](#).
11. Remove rear washer tube mounting clips (A) from the Vehicle.
12. Remove rear washer tube mounting clips from the rear washer tube.
13. Remove rear washer tube from the vehicle.

INSTALLATION

Install in the reverse order of removal.

WASHER LEVEL SWITCH

< REMOVAL AND INSTALLATION >

WASHER LEVEL SWITCH

Removal and Installation

INFOID:0000000011322400

The washer level switch must be replaced together with the washer tank as an assembly.
Refer to [WW-59, "Removal and Installation"](#).

A

B

C

D

E

F

G

H

I

J

K

WW

M

N

O

P

WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Exploded View

INFOID:0000000011322401

Refer to [BCS-99, "Exploded View"](#).