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SECTION **WW**

WIPER & WASHER

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Technicians Using Medical Electric

INFOID:000000009353531

OPERATION PROHIBITION

WARNING:

- Parts with strong magnet is used in this vehicle.
- Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.

NORMAL CHARGE PRECAUTION

WARNING:

- If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.
- As radiated electromagnetic wave generated by PDM (Power Delivery Module) at normal charge operation may affect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not approach motor room [PDM (Power Delivery Module)] at the hood-opened condition during normal charge operation.

PRECAUTION AT TELEMATICS SYSTEM OPERATION

WARNING:

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.

PRECAUTION AT INTELLIGENT KEY SYSTEM OPERATION

WARNING:

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of Intelligent Key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of Intelligent Key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before Intelligent Key use.

Point to Be Checked Before Starting Maintenance Work

INFOID:000000008744361

The high voltage system may starts automatically. It is required to check that the timer air conditioner and timer charge (during EVSE connection) are not set before starting maintenance work.

NOTE:

If the timer air conditioner or timer charge (during EVSE connection) is set, the high voltage system starts automatically even when the power switch is in OFF state.

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

INFOID:000000009343796

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

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PRECAUTIONS

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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 SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

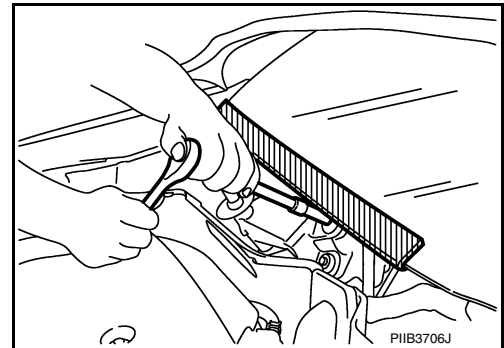
WARNING:

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

Precaution for Procedure without Cowl Top Cover

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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.



Precaution for Removing 12V Battery

INFOID:000000008744364

1. Check that EVSE is not connected.

NOTE:

If EVSE is connected, the air conditioning system may be automatically activated by the timer A/C function.

2. Turn the power switch OFF → ON → OFF. Get out of the vehicle. Close all doors (including back door).
3. Check that the charge status indicator lamp does not blink and wait for 5 minutes or more.

NOTE:

If the battery is removed within 5 minutes after the power switch is turned OFF, plural DTCs may be detected.

4. Remove 12V battery within 1 hour after turning the power switch OFF → ON → OFF.

NOTE:

- The 12V battery automatic charge control may start automatically even when the power switch is in OFF state.
- Once the power switch is turned ON → OFF, the 12V battery automatic charge control does not start for approximately 1 hour.

CAUTION:

- After all doors (including back door) are closed, if a door (including back door) is opened before battery terminals are disconnected, start over from Step 1.
- After turning the power switch OFF, if "Remote A/C" is activated by user operation, stop the air conditioner and start over from Step 1.

COMPONENT PARTS

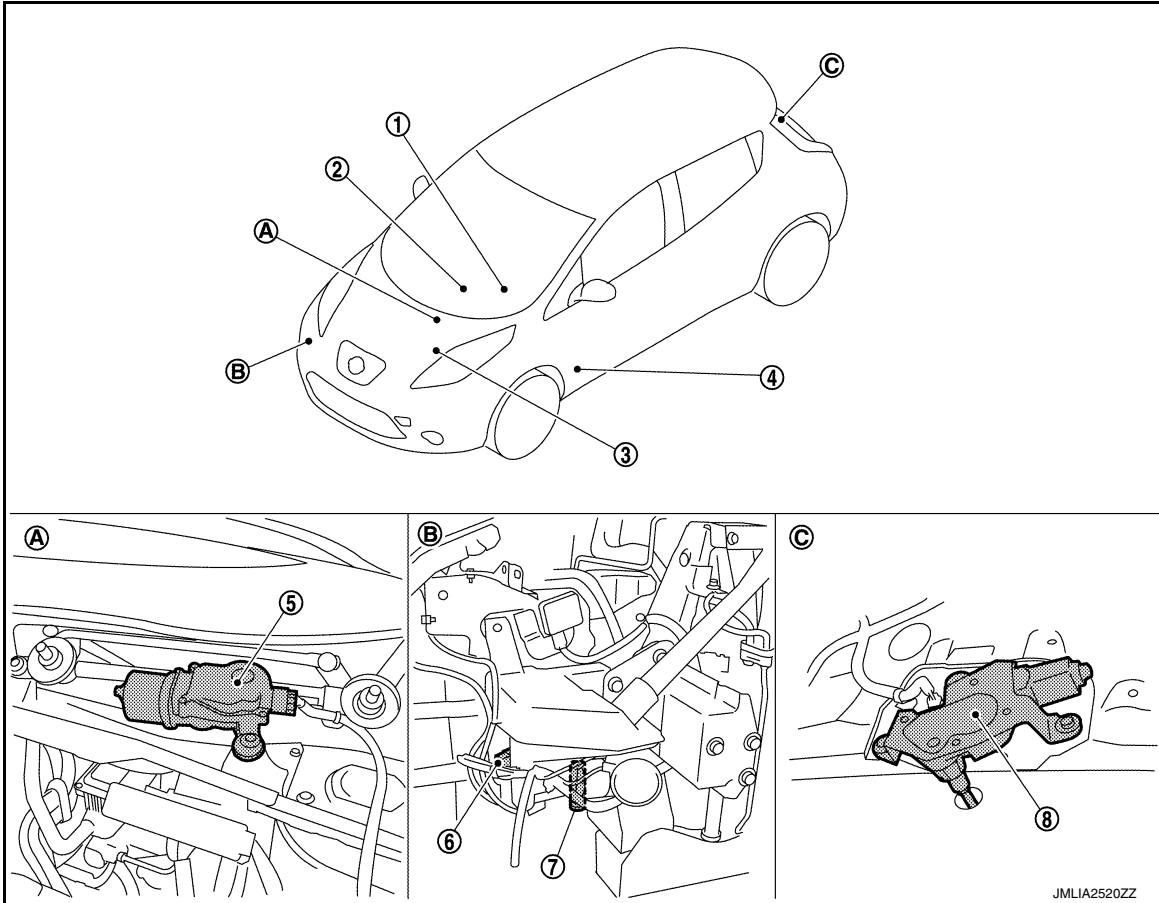
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000008744365



A. Cowl top, left side of motor room B. Behind front fender protector (RH) C. Back door lower finisher inside

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No.	Component	Function
1.	Combination switch (Wiper & washer switch)	Refer to BCS-8. "COMBINATION SWITCH READING SYSTEM : System Description" . Refer to WW-6. "Washer Switch" .
2.	Combination meter	Transmits the vehicle speed signal to BCM via CAN communication.
3.	IPDM E/R	<ul style="list-style-type: none"> 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-6. "Component Parts Location" .
4.	BCM	<ul style="list-style-type: none"> Judges each switch status by the combination switch reading function. Requests (via CAN communication) the front wiper relay and the front wiper HI/LO relay ON to IPDM E/R. Supplies power to the rear wiper motor. Performs the auto stop control of the rear wiper. Refer to BCS-5. "BODY CONTROL SYSTEM : Component Parts Location" .
5.	Front wiper motor	Refer to WW-6. "Front wiper motor" .
6.	Washer pump	Refer to WW-6. "Washer pump" .
7.	Washer level switch*	Refer to WW-6. "Washer level switch" .
8.	Rear wiper motor	Refer to WW-7. "Rear wiper motor" .

*: For Canada

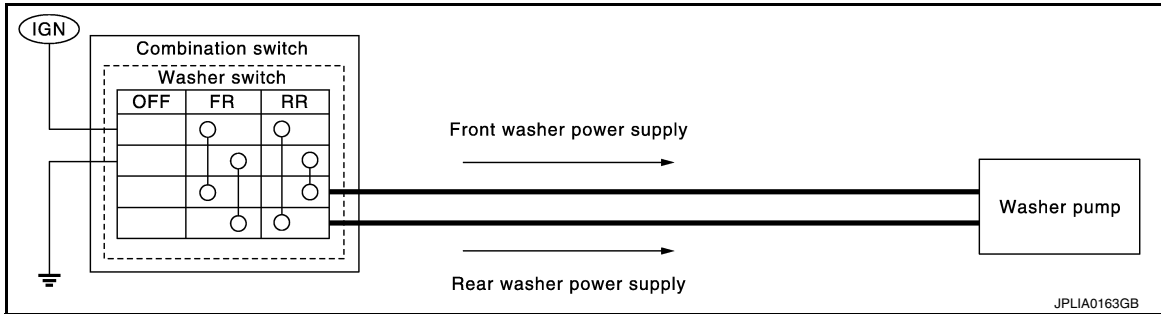
COMPONENT PARTS

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Washer Switch

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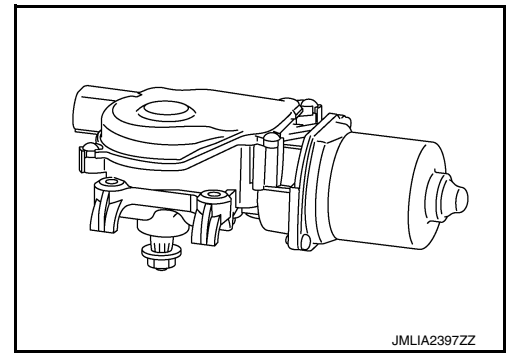
- Washer switch is integrated with combination switch.
- Combination switch operates front washer or rear washer by changing voltage polarity to be supplied to washer pump.



Front wiper motor

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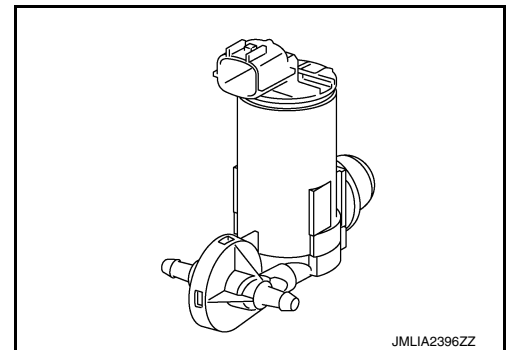
- Controls front wiper operation with IPDM E/R control.
- Transmits front wiper stop position signal to IPDM E/R.



Washer pump

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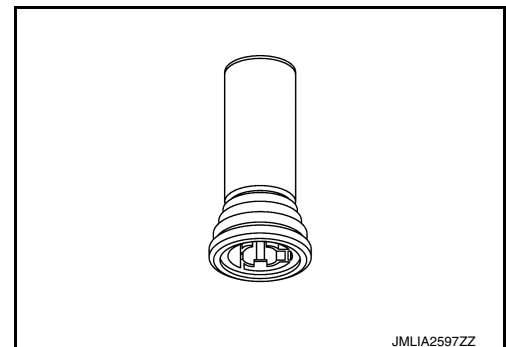
- Washer fluid is sprayed according to washer switch states.
- Switching between front washer and rear washer is performed according to the voltage polarity change to washer pump.



Washer level switch

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



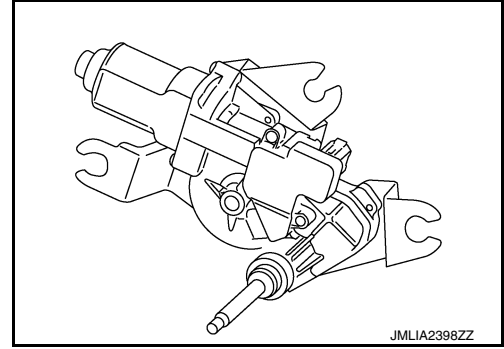
COMPONENT PARTS

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Rear wiper motor

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



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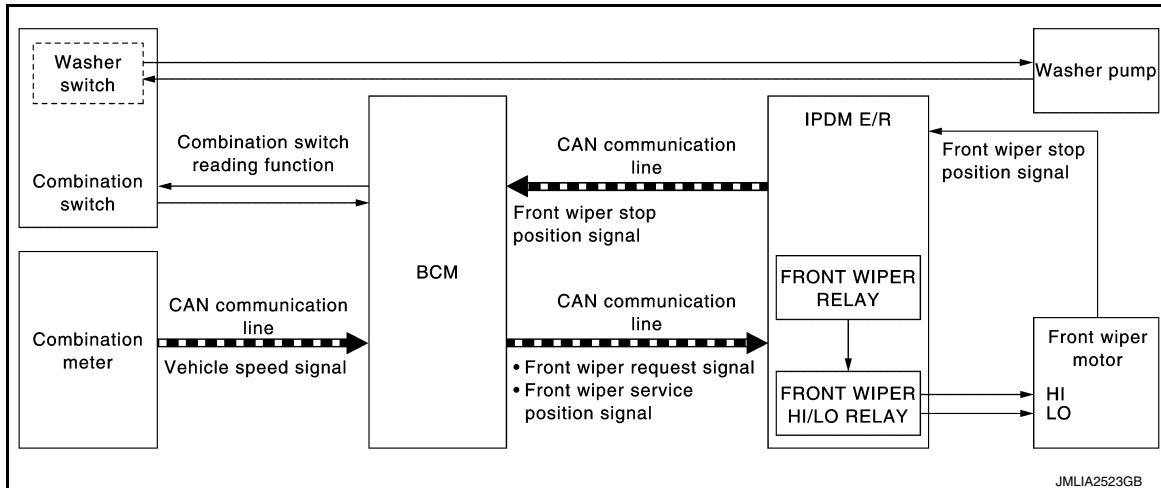
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FRONT WIPER AND WASHER SYSTEM

FRONT WIPER AND WASHER SYSTEM : System Description

INFOID:000000008744371

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 warning judged by the signal from the washer fluid level switch. For details of low washer fluid warning, refer to [MWI-35, "INFORMATION DISPLAY : System Description"](#).

FRONT WIPER BASIC OPERATION

- BCM detects the combination switch condition by the combination switch reading function.
- BCM transmits the front wiper request signal to IPDM E/R via CAN communication depending on each operating condition of the front wiper.
- IPDM E/R turns ON/OFF the integrated front wiper relay and the front wiper HI/LO relay according to the front wiper request signal. IPDM E/R provides the power supply to operate the front wiper HI/LO operation.

FRONT WIPER LO OPERATION

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

Front wiper LO operating condition

- Power 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

- Power 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).

FRONT WIPER INT OPERATION

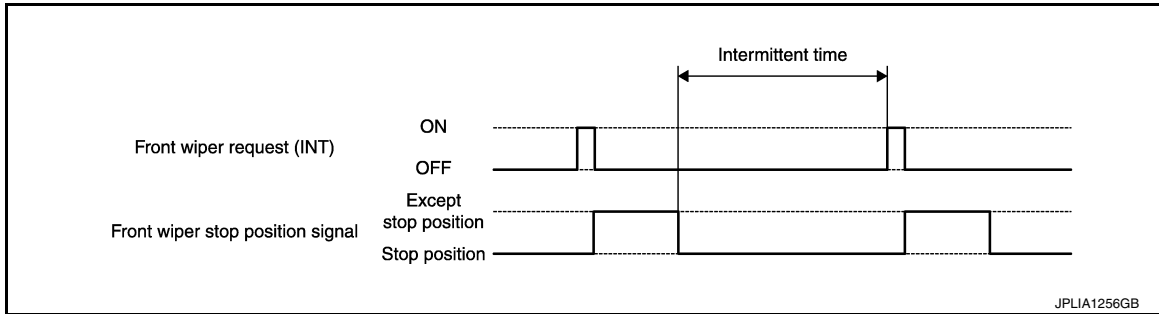
SYSTEM

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- 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

- Power 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:

Front wiper intermittent operation can be set to the operation with vehicle speed using CONSULT. Refer to [BCS-18, "WIPER : CONSULT Function - WIPER"](#).

Front wiper intermittent operation with vehicle speed

- BCM calculates the intermittent operation delay interval from the following
 - Vehicle speed signal
 - Wiper 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		12.5	5	3
6	Long ↓	25	10	6
7		40	16	9.6

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

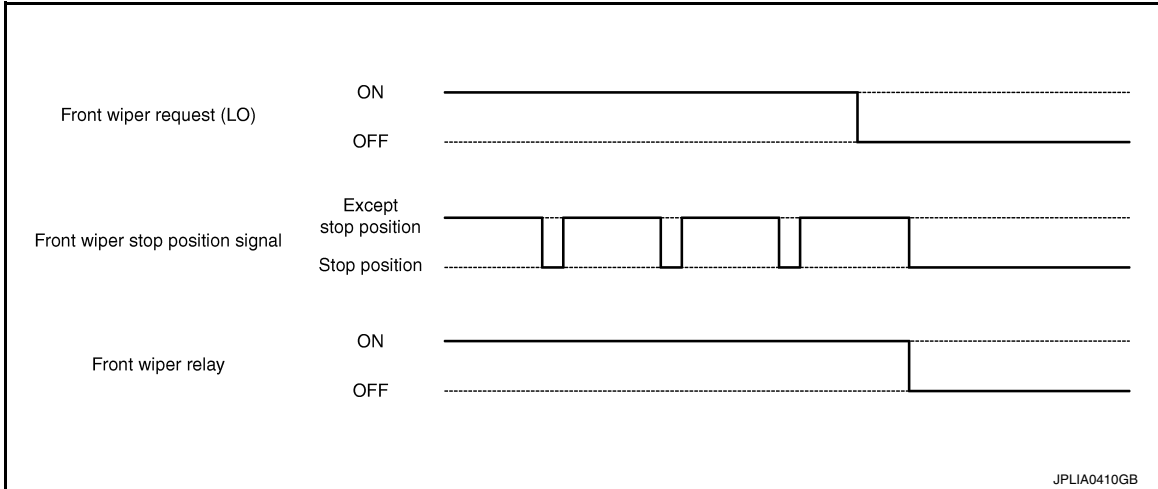
FRONT WIPER AUTO STOP OPERATION

- 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 power switch is OFF.
- IPDM E/R turns the front wiper relay OFF when the power 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

- Turn power 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.

FRONT WIPER SERVICE POSITION OPERATION

- Front wiper operates in LO, stops, and then stays in lock back position when front washer switch is turned ON while power switch is OFF.
- BCM transmits front wiper service position signal via CAN communication according to the front wiper service position function operating conditions.

Operation conditions of front wiper service position function

- Turn power switch OFF (within 1 minutes)
- Front washer switch ON (0.4 second or more)
- Front wiper operates at LO and then stops when IPDM E/R detects front wiper service position signal.
- Front wiper service position function is cancelled when front wiper washer switch is turned ON again within 1 minute after turning power switch OFF. If 1 minute or more is passed after turning power switch OFF, front wiper service position function is cancelled when power switch is turned ON again, and then front wiper switch (INT, LO, HI, MIST or WASHER) is turned ON.

NOTE:

Front wiper does not operate even if front wiper switch (INT, LO, or HI) is ON when power switch is turned ON while front wiper is stopped according to front wiper service position function.

WIPER LINKED AUTO LIGHTING FUNCTION (EXCEPT FOR CANADA)

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"](#).

FRONT WIPER AND WASHER SYSTEM : Fail-safe

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FAIL-SAFE OPERATION

IPDM E/R performs the fail-safe function when the front wiper auto stop circuit is malfunctioning. Refer to [PCS-17. "Fail-Safe"](#).

REAR WIPER AND WASHER SYSTEM

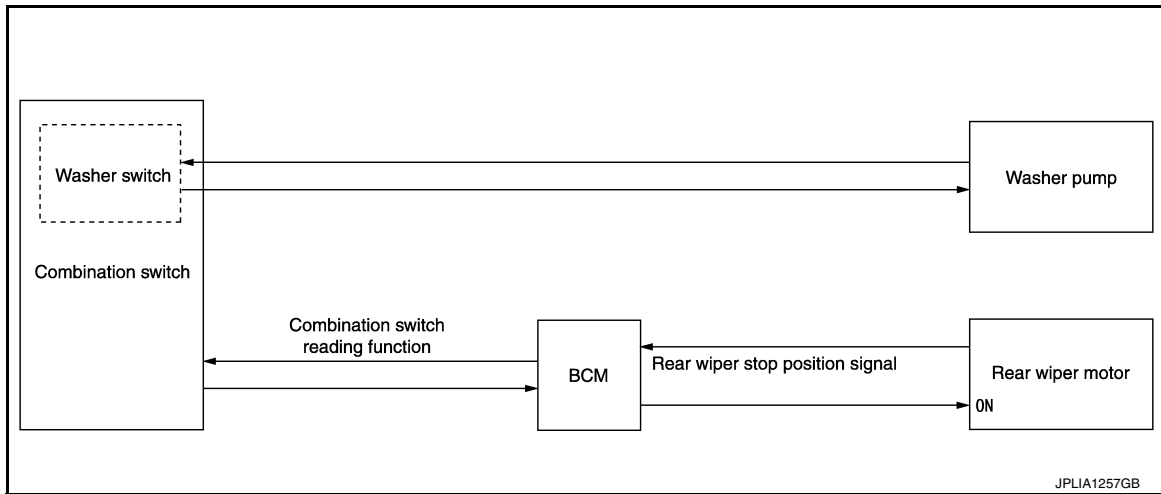
SYSTEM

< SYSTEM DESCRIPTION >

REAR WIPER AND WASHER SYSTEM : System Description

INFOID:000000008744374

SYSTEM DIAGRAM



OUTLINE

The rear wiper is controlled by each function of BCM.

Control by BCM

- Combination switch reading function
- Rear wiper control function

REAR WIPER BASIC OPERATION

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

REAR WIPER ON OPERATION

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

Rear wiper ON operating condition

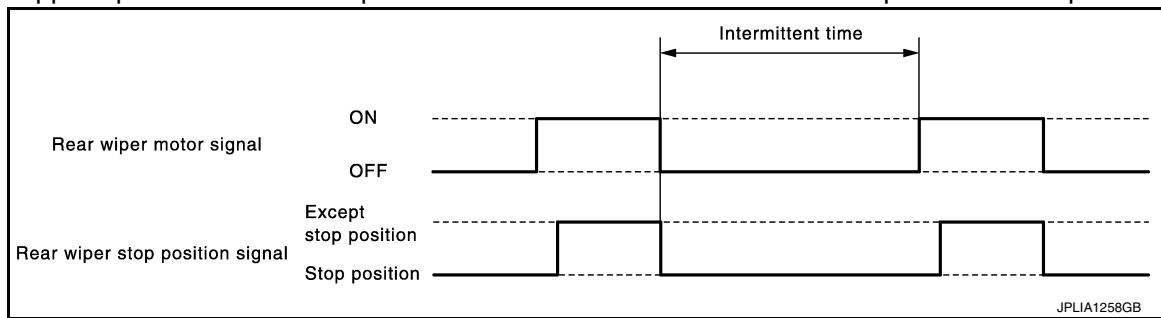
- Power switch ON
- Rear wiper switch ON

REAR WIPER INT OPERATION

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

Rear wiper INT operating condition

- Power switch ON
- 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.

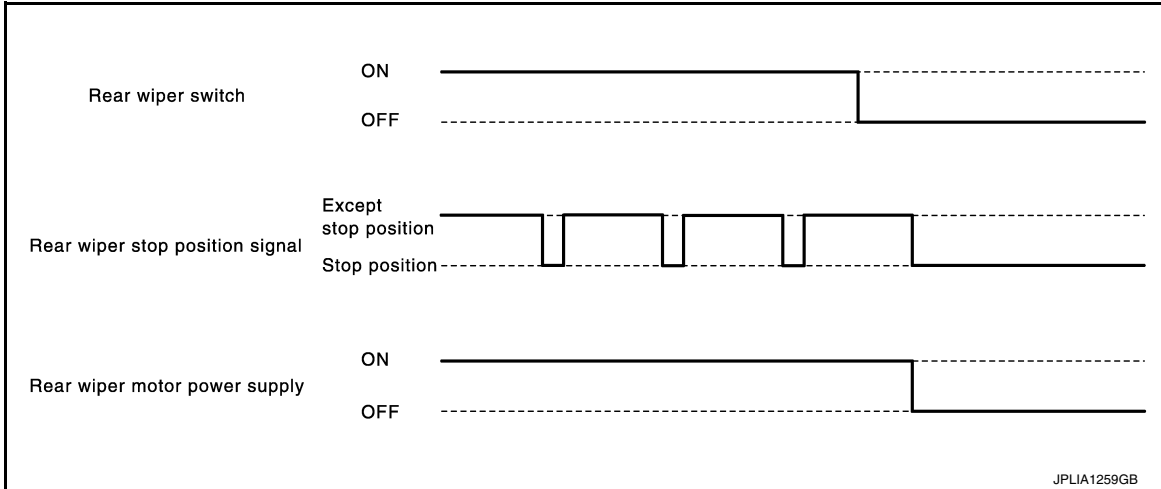
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- When the rear wiper motor is at other than the stopping position, BCM continues to supply power to the rear wiper motor until it returns to the stopping position.



NOTE:

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

REAR WIPER OPERATION LINKED WITH WASHER

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

Washer linked operating condition of rear wiper

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

REAR WIPER AND WASHER SYSTEM : Fail-safe

INFOID:000000008744376

FAIL-SAFE OPERATION

IPDM E/R performs the fail-safe function when the rear wiper auto stop circuit is malfunctioning. Refer to [PCS-17, "Fail-Safe"](#).

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000009345420

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions.

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

WIPER

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

WIPER : CONSULT Function - WIPER

INFOID:000000009345421

DATA MONITOR

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

ACTIVE TEST

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

WORK SUPPORT

Support Item	Setting	Description
WIPER SPEED SETTING	Off*	Front wiper intermittent time linked with wiper dial position.
	On	Front wiper intermittent time linked with vehicle speed and wiper dial position.

*: Initial setting

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:00000009345422

AUTO ACTIVE TEST

Description

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

- Rear window defogger
- Front wiper motor
- Parking lamp
- License plate lamp
- Tail lamp
- Front fog lamp
- Side marker lamp
- Headlamp (LO, HI)

Operation Procedure

NOTE:

Never perform auto active test in the following conditions.

- CONSULT is connected.
- Passenger door is open.

1. Turn the power switch OFF.
2. Turn the power switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the power switch OFF.
3. Turn the power switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.

NOTE:

Never depress brake pedal while operating power switch so that auto active test is not activated.

4. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:

- When auto active test mode has to be cancelled halfway through test, turn the power switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to [DLK-117, "Component Function Check"](#).

Inspection in Auto Active Test Mode

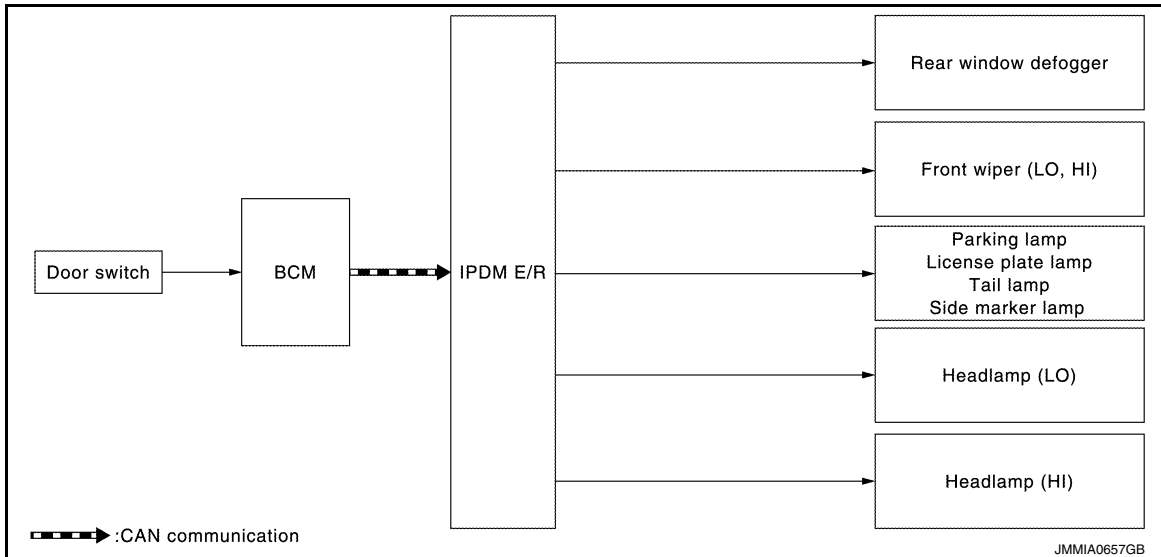
When auto active test mode is actuated, the following operation sequence is repeated 3 times.

Operation sequence	Inspection location	Operation
1	Rear window defogger	10 seconds
2	Front wiper motor	LO for 5 seconds → HI for 5 seconds
3	<ul style="list-style-type: none">• Parking lamp• License plate lamp• Tail lamp• Front fog lamp• Side marker lamp	10 seconds
4	Headlamp	LO for 10 seconds → HI ON ⇔ OFF 5 times

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 mode

Symptom	Inspection contents	Possible cause
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES BCM signal input circuit
		NO <ul style="list-style-type: none"> • Rear window defogger • Rear window defogger ground circuit • Harness or connector between IPDM E/R and rear window defogger • IPDM E/R
Any of the following components do not operate • Parking lamp • License plate lamp • Tail lamp • Front fog lamp • Headlamp (HI, LO) • Side marker lamp • Front wiper motor	Perform auto active test. Does the applicable system operate?	YES BCM signal input circuit
		NO <ul style="list-style-type: none"> • Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R

CONSULT Function (IPDM E/R)

INFOID:000000009345423

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to [PCS-18, "DTC Index"](#).

DATA MONITOR

DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Main Signals	Description
TAIL&CLR REQ [On/Off]	×	Indicates position light request signal received from BCM on CAN communication line
HL LO REQ [On/Off]	×	Indicates low beam request signal received from BCM on CAN communication line
HL HI REQ [On/Off]	×	Indicates high beam request signal received from BCM on CAN communication line
FR FOG REQ [On/Off]	×	Indicates front fog light request signal received from BCM on CAN communication line
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Indicates front wiper request signal received from BCM on CAN communication line
WIP AUTO STOP [STOP P/ACT P]	×	Indicates condition of front wiper auto stop signal
WIP PROT [Off/BLOCK]	×	Indicates condition of front wiper fail-safe operation
IGN RLY1 -REQ [On/Off]		Indicates power switch ON signal received from BCM on CAN communication line
IGN RLY [On/Off]	×	Indicates condition of ignition relay-1
PUSH SW [On/Off]		Indicates condition of power switch
DETENT SW [On/Off]		Indicates condition of shift position (park position switch)
DTRL REQ [Off]		Indicates daytime light request signal received from BCM on CAN communication line
HOOD SW [On/Off]		Indicates condition of hood switch
THFT HRN REQ [On/Off]		Indicates theft warning horn request signal received from BCM on CAN communication line
HORN CHIRP [On/Off]		Indicates horn reminder signal received from BCM on CAN communication line

ACTIVE TEST

Test item	Description
HORN	This test is able to check horn operation [On].
REAR DEFOGGER	This test is able to check rear window defogger operation [On/Off].
FRONT WIPER	This test is able to check wiper motor operation [Hi/Lo/Off].
EXTERNAL LAMPS	This test is able to check external lamp operation [Fog/Hi/Lo/TAIL/Off].

CAN DIAG SUPPORT MNTR

Refer to [LAN-13, "CAN Diagnostic Support Monitor"](#).

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BCM, IPDM E/R

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:000000008744381

ECU	Reference
BCM	BCS-28. "Reference Value"
	BCS-46. "Fail-safe"
	BCS-47. "DTC Inspection Priority Chart"
	BCS-48. "DTC Index"
IPDM E/R	PCS-14. "Reference Value"
	PCS-17. "Fail-Safe"
	PCS-18. "DTC Index"

WIPER AND WASHER SYSTEM

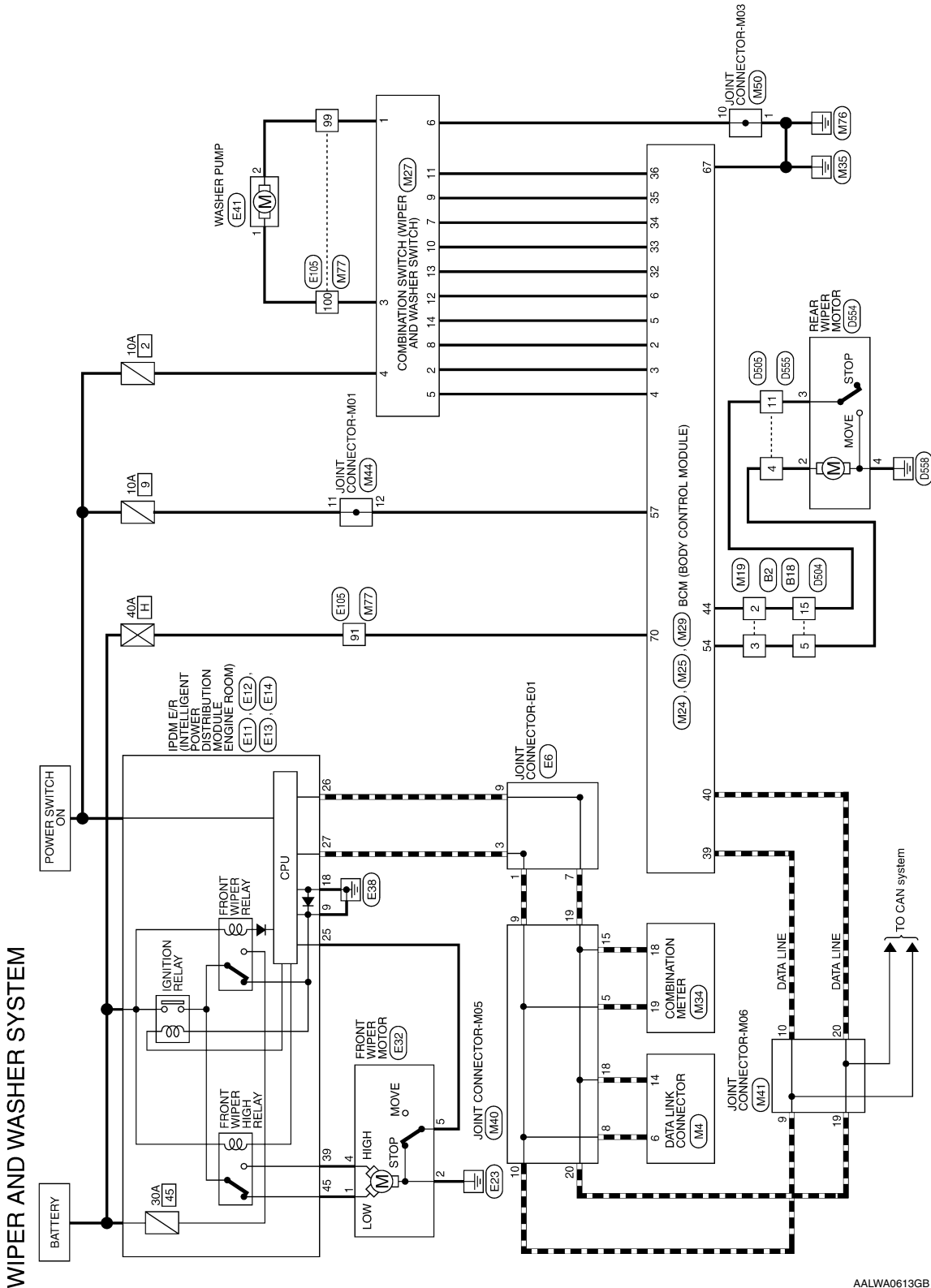
< WIRING DIAGRAM >

WIRING DIAGRAM

WIPER AND WASHER SYSTEM

Wiring Diagram

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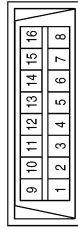
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WIPER AND WASHER SYSTEM

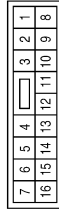
< WIRING DIAGRAM >

WIPER AND WASHER SYSTEM - CONNECTORS

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	-	-
2	-	-
3	LG	-
4	B	-
5	B	-
6	L	-
7	GR	-
8	G	-
9	-	-
10	-	-
11	SB	-
12	G	-
13	L	-
14	P	-
15	-	-
16	Y	-

Terminal No.	Color of Wire	Signal Name
1	-	-
2	LG	-
3	P	-
4	GR	-
5	GR	-
6	W	-
7	-	-
8	-	-
9	-	-
10	V	-
11	V	-
12	LG	-
13	BR	-
14	SB	-
15	L	-
16	G	-

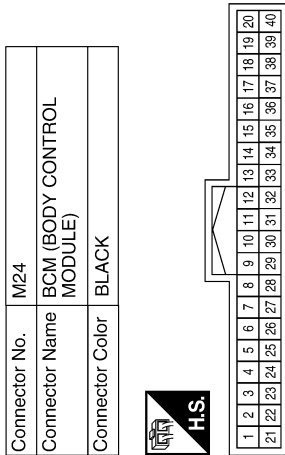
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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

Terminal No.	Color of Wire	Signal Name
36	P	COMBINATION SW OUTPUT 1
37	V	SHIFT P POSITION, PARKING POSITION SW
38	SB	INTELLIGENT TUNER
39	L	CAN-H
40	P	CAN-L

Terminal No.	Color of Wire	Signal Name
15	W	REAR DEFOGGER SW
16	R	MR OUTPUT
17	Y	AUTO LIGHT SENSOR POWER SUPPLY OUTPUT, KEYLESS TUNER, AUTO LIGHT SENSOR GND
18	L	
19	-	
20	-	
21	P	IMMOBILIZER ONE WAY COMMUNICATION (CLOCK)
22	-	
23	R	SECURITY INDICATOR OUTPUT
24	SB	DONGLE LINK
25	LG	IMMOBILIZER TWO WAY COMMUNICATION
26	-	
27	-	
28	-	
29	G	HAZARD SW
30	V	TRUNK/BACK DOOR OPENER SW
31	W	DOOR LOCK STATUS SW (DR)
32	GR	COMBINATION SW OUTPUT 5
33	Y	COMBINATION SW OUTPUT 4
34	W	COMBINATION SW OUTPUT 3
35	BG	COMBINATION SW OUTPUT 2



Terminal No.	Color of Wire	Signal Name
1	-	
2	L	COMBINATION SW INPUT 5
3	GR	COMBINATION SW INPUT 4
4	BR	COMBINATION SW INPUT 3
5	G	COMBINATION SW INPUT 2
6	V	COMBINATION SW INPUT 1
7	GR	KEY CYLINDER UNLOCK SW
8	R	KEY CYLINDER LOCK SW
9	BR	BRAKE SW1
10	-	
11	-	
12	Y	CENTRAL DOOR LOCK SW
13	BR	CENTRAL DOOR UNLOCK SW
14	G	AUTO LIGHT SENSOR INPUT

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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

Connector No.	MZ9
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



104	103	102	101	100	99	98	97	96
110	109	108	107	106	105			

Terminal No.	Color of Wire	Signal Name
41	-	-
42	-	-
43	Y	DOOR SW (BACK)
44	LG	REAR WIPER AUTO STOP SW
45	BR	DOOR SW (AS)
46	R	DOOR SW (RR)
47	SB	DOOR SW (DR)
48	W	DOOR SW (RL)
49	L	LUGGAGE LAMP OUTPUT
50	-	-
51	P	REQUEST SW (TRUNK/BACK DOOR)
52	-	-
53	GR	TRUNK/BACK DOOR OPEN OUTPUT
54	P	REAR WIPER MOTOR OUTPUT
55	G	DOOR UNLOCK OUTPUT (RR, RL)

Connector No.	MZ7
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
1	LG	-
2	GR	-
3	R	-
4	SB	-
5	BR	-
6	B	-
7	W	-
8	L	-
9	BG	-
10	Y	-
11	P	-
12	V	-
13	GR	-
14	G	-
15	-	-
16	-	-

Connector No.	M25
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



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

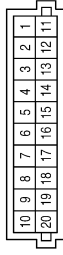
Terminal No.	Color of Wire	Signal Name
56	P	BATTERY SAVER OUTPUT
57	P	BATTERY (FUSE)
58	-	-
59	LG	DOOR UNLOCK OUTPUT (AS)
60	V	FLASHER OUTPUT (LEFT)
61	R	FLASHER OUTPUT (RIGHT)
62	-	-
63	BR	ROOM LAMP OUTPUT
64	-	-
65	V	DOOR LOCK OUTPUT
66	G	DOOR UNLOCK COMMON (DR)
67	B	GND
68	L	POWER WINDOW POWER SUPPLY (RAP)
69	R	POWER WINDOW POWER SUPPLY (BATTERY)
70	Y	BATTERY (F/L)

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WIPER AND WASHER SYSTEM

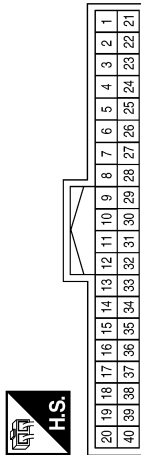
< WIRING DIAGRAM >

Connector No.	M40
Connector Name	JOINT CONNECTOR-M05
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
21	-	-
22	GR	-
23	-	-
24	BG	-
25	SB	-
26	B	-
27	R	-
28	R	-
29	-	-
30	GR	-
31	-	-
32	W	-
33	G	-
34	L	-
35	-	-
36	-	-
37	-	-
38	V	-
39	LG	-
40	W	-

Connector No.	M34
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	Y	-
3	GR	-
4	BG	-
5	B	-
6	B	-
7	-	-
8	Y	-
9	BR	-
10	-	-
11	-	-
12	V	-
13	G	-
14	Y	-
15	BR	-
16	P	-
17	G	-
18	P	-
19	L	-
20	LG	-

Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
3	BR	-
4	GR	-
5	L	-
6	L	-
7	L	-
8	L	-
9	L	-
10	L	-
11	LG	-
12	LG	-
13	L	-
14	R	-
15	P	-
16	P	-
17	P	-
18	P	-
19	P	-
20	P	-

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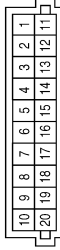
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WIPER AND WASHER SYSTEM

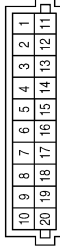
< WIRING DIAGRAM >

Connector No.	M50
Connector Name	JOINT CONNECTOR-CM03
Connector Color	PINK



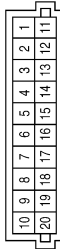
Terminal No.	Color of Wire	Signal Name
1	B	-
2	B	-
3	B	-
4	B	-
5	B	-
6	B	-
7	B	-
8	B	-
9	B	-
10	B	-
11	G	-
12	G	-
13	G	-
14	G	-
15	G	-
16	L	-
17	L	-
18	L	-
19	L	-
20	L	-

Connector No.	M44
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	P	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	B	-
9	B	-
10	B	-
11	P	-
12	P	-
13	W	-
14	W	-
15	LG	-
16	R	-
17	R	-
18	W	-
19	W	-
20	W	-

Connector No.	M41
Connector Name	JOINT CONNECTOR-M06
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	SB	-
3	SB	-
4	SB	-
5	L	-
6	L	-
7	L	-
8	L	-
9	L	-
10	L	-
11	LG	-
12	LG	-
13	LG	-
14	LG	-
15	P	-
16	P	-
17	P	-
18	P	-
19	P	-
20	P	-

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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

Terminal No.	Color of Wire	Signal Name
63	BR	-
64	SHIELD	-
65	W	-
66	LG	-
67	R	-
68	G	-
69	BG	-
70	GR	-
71	R	-
72	R	-
73	B	-
74	W	-
76	L	-
80	W	-
81	LG	-
83	GR	-
84	L	-
85	Y	-
86	SB	-
88	R	-
89	G	-
90	SHIELD	-
91	Y	-
92	BR	-
93	W	-
94	P	-
95	L	-
96	P	-
97	G	-
98	V	-
99	LG	-
100	R	-

Terminal No.	Color of Wire	Signal Name
27	B	-
28	B	-
29	R	-
31	R	-
32	W	-
33	GR	-
34	BR	-
35	BR	-
36	W	-
37	L	-
38	LG	-
39	SB	-
40	V	-
41	P	-
42	SB	-
43	G	-
44	LG	-
45	Y	-
46	R	-
47	W	-
48	L	-
49	G	-
50	L	-
51	SB	-
52	L	-
54	B	-
55	R	-
56	V	-
57	Y	-
58	L	-
60	Y	-
61	GR	-
62	W	-

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Color	WHITE



16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
1	R	-
2	L	-
3	V	-
4	LG	-
6	P	-
7	GR	-
9	G	-
10	L	-
11	L	-
12	Y	-
13	V	-
14	R	-
15	G	-
16	W	-
17	R	-
18	G	-
19	W	-
20	GR	-
21	P	-
22	B	-
23	BG	-
24	B	-
25	W	-
26	G	-

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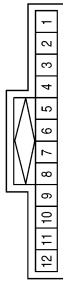
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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

Connector No.	E6
Connector Name	JOINT CONNECTOR-E01
Connector Color	BLUE



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

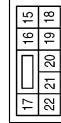
Terminal No.	Color of Wire	Signal Name
3	L	-
4	L	-
5	-	-
6	L	-
7	P	-
8	P	-
9	P	-
10	P	-
11	-	-
12	P	-

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



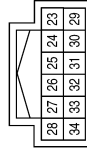
Terminal No.	Color of Wire	Signal Name
9	B	GND (POWER)
10	-	-
11	-	-
12	-	-
13	-	-
14	R	RR DEF

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
15	-	-
16	-	-
17	-	-
18	B/W	GND (SIGNAL)
19	W	FR FOG/L RH
20	V	FR FOG/L LH
21	-	-
22	-	-

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
25	R	AUTO STOP SW
26	P	CAN-CL
27	L	CAN-CH
28	G	DTRL RLY
32	SB	HOOD SW
34	W	HORN RLY CONT

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
35	R	VCM VB
38	LG	TAIL 1 (WITHOUT SOLAR CELL)
38	R	TAIL 1 (WITH SOLAR CELL)
39	L	FR WIPER HI
41	SB	VCM RLY CONT
42	BR	VCM BAT
43	O	CLEARANCE/LH
44	B	TAIL 2
45	Y	FR WIPER LO

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WIPER AND WASHER SYSTEM

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Connector No.	E41
Connector Name	WASHER PUMP
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	O	-

Connector No.	E32
Connector Name	FRONT WIPER MOTOR
Connector Color	GRAY



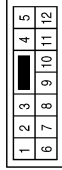
Terminal No.	Color of Wire	Signal Name
1	Y	-
2	B/Y	-
3	-	-
4	L	-
5	R	-

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WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

Connector No.	D555
Connector Name	WIRE TO WIRE
Connector Color	WHITE



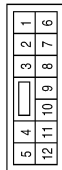
Terminal No.	Color of Wire	Signal Name
1	W	-(WITHOUT AROUND VIEW MONITOR)
1	B	-(WITH AROUND VIEW MONITOR)
2	R	-(WITHOUT AROUND VIEW MONITOR)
2	W	-(WITH AROUND VIEW MONITOR)
3	P	-
4	W	-
5	R	-
6	SHIELD	-
7	Y	-(WITHOUT AROUND VIEW MONITOR)
7	R	-(WITH AROUND VIEW MONITOR)
8	P	-
9	L	-
10	SB	-
11	LG	-
12	GR	-

Connector No.	D554
Connector Name	REAR WIPER MOTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	-	-
2	W	-
3	LG	-
4	B	-

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



Terminal No.	Color of Wire	Signal Name
1	W	-
2	R	-
3	P	-
4	W	-
5	R	-
6	SHIELD	-
7	Y	-
8	P	-
9	L	-
10	SB	-
11	LG	-
12	GR	-

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

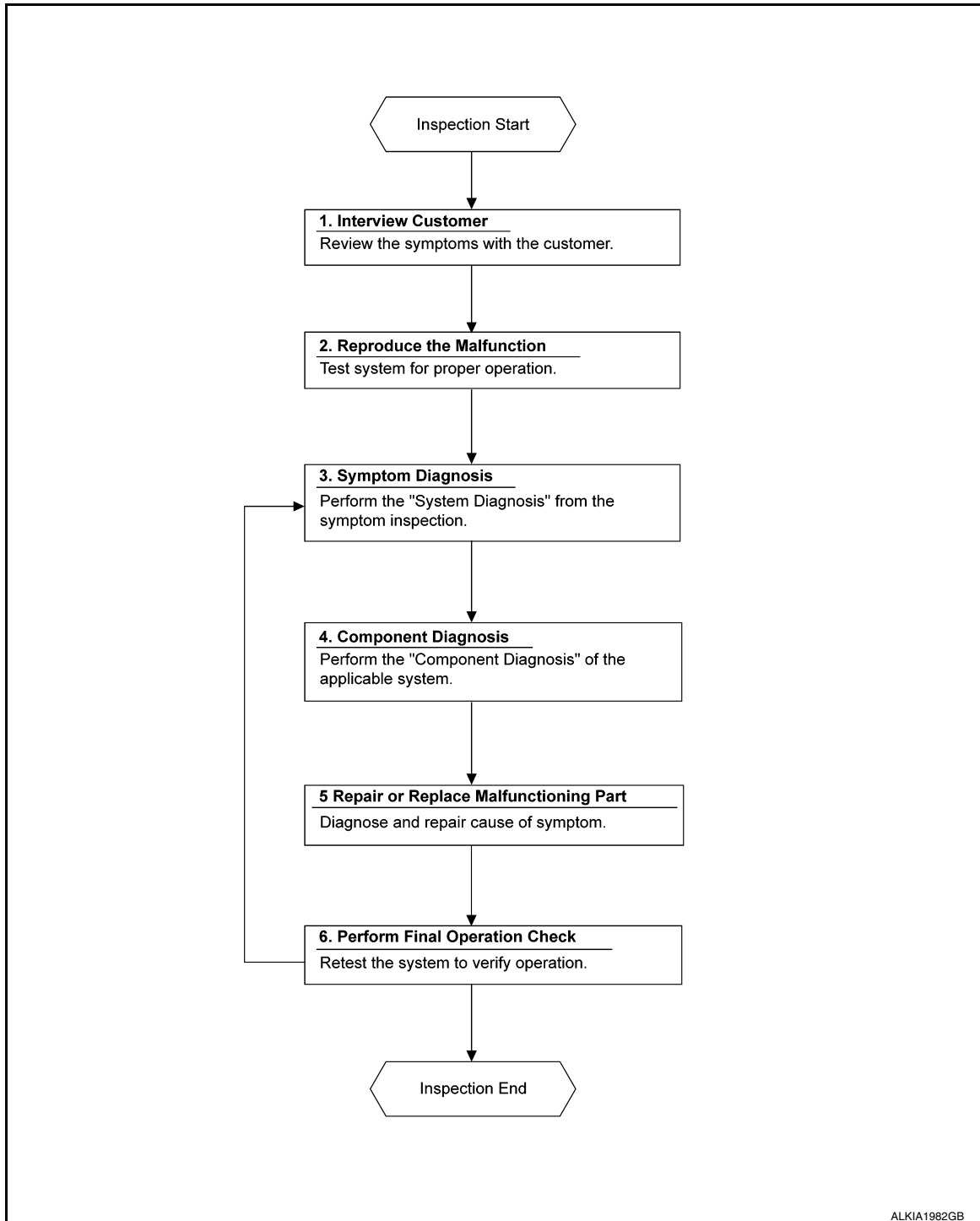
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000008744383

OVERALL SEQUENCE



DETAILED FLOW

1. OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain as much information as possible about the conditions and environment under which the malfunction occurred.

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DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

>> GO TO 2.

2. CONFIRM THE SYMPTOM

Check the malfunction on the vehicle that the customer describes.
Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 3.

3. IDENTIFY THE MALFUNCTIONING SYSTEM WITH SYMPTOM DIAGNOSIS

Use Symptom diagnosis from the symptom inspection result in step 2 and then identify where to start performing the diagnosis based on possible causes and symptoms. Refer to [WW-42. "Symptom Table"](#).

>> GO TO 4.

4. PERFORM THE COMPONENT DIAGNOSIS OF THE OF THE APPLICABLE SYSTEM

Perform the diagnosis with Component diagnosis of the applicable system.

>> GO TO 5.

5. REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 6.

6. FINAL CHECK

Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 2.

Are the malfunctions corrected?

YES >> Inspection End.

NO >> GO TO 3.

WIPER AND WASHER FUSE

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

WIPER AND WASHER FUSE

Diagnosis Procedure

INFOID:000000008744384

1. CHECK FUSES

Check that the following fuses are not blown.

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	45	30 A
Washer pump	Fuse block (J/B)	2	10 A

Is the inspection result normal?

YES >> Inspection End.

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

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FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR LO CIRCUIT

Component Function Check

INFOID:000000008744385

1. CHECK FRONT WIPER LO OPERATION

Ⓟ With CONSULT

1. Select FRONT WIPER of IPDM E/R active test item.
2. While 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-34, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008744386

1. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

Ⓟ With CONSULT

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

(+)		(-)	Condition	Voltage (Approx.)	
Connector	Terminal				
E32	1	Ground	FRONT WIPER	Lo	Battery voltage
				Off	0 V

Is the inspection result normal?

- YES >> Replace front wiper motor. Refer to [WW-59, "Removal and Installation"](#).
NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR (LO) CIRCUIT

1. Turn power 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	
E14	45	E32	1	Yes

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	45		No

Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to [PCS-29, "Removal and Installation"](#).
NO >> Repair or replace harness.

FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR HI CIRCUIT

Component Function Check

INFOID:000000008744387

1. CHECK FRONT WIPER HI OPERATION

Ⓜ With CONSULT

1. Select FRONT WIPER of IPDM E/R active test item.
2. While 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-35, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008744388

1. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

Ⓜ With CONSULT

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

(+)		(-)	Condition	Voltage (Approx.)	
Front wiper motor					
Connector	Terminal				
E32	4	Ground	FRONT WIPER	Hi	Battery voltage
				Off	0 V

Is the inspection result normal?

- YES >> Replace front wiper motor. Refer to [WW-59, "Removal and Installation"](#).
 NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR (HI) CIRCUIT

1. Turn power 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	
E14	39	E32	4	Yes

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E14	39		No

Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to [PCS-29, "Removal and Installation"](#).
 NO >> Repair or replace harness.

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FRONT WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:000000008744389

1. CHECK FRONT WIPER STOP POSITION SIGNAL

④ With CONSULT

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-36. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008744390

1. CHECK IPDM E/R OUTPUT VOLTAGE

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

(+)		(-)	Voltage (Approx.)
Front wiper motor			
Connector	Terminal	Ground	Battery voltage
E32	5		

Is the inspection result normal?

- YES >> Replace front wiper motor. Refer to [WW-59. "Removal and Installation"](#).
NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR CIRCUIT

1. Turn power 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	
E13	25	E32	5	Yes

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	25		No

Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to [PCS-29. "Removal and Installation"](#).
NO >> Repair or replace harness.

FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT WIPER MOTOR GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000008744391

1. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

1. Turn power 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		Yes
E32	2		

Is the inspection result normal?

- YES >> Inspection End.
NO >> Repair or replace harness.

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WASHER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

WASHER SWITCH

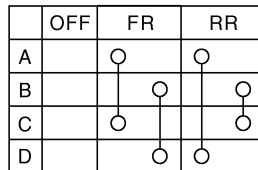
Component Inspection

INFOID:000000008744392

1. CHECK WASHER SWITCH

1. Turn power 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



JPLIA0164GB

Combination switch		Condition	Continuity
Terminal			
3	4	Front washer switch ON	Yes
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). Refer to [BCS-87. "Removal and Installation"](#).

REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER MOTOR CIRCUIT

Component Function Check

INFOID:000000008744393

1. CHECK REAR WIPER ON OPERATION

Ⓜ With CONSULT

1. Select RR WIPER of BCM active test item.
2. While 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-39, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008744394

1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

Ⓜ With CONSULT

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

(+)		(-)	Condition	Voltage (Approx.)	
Connector	Terminal				
D554	2	Ground	REAR WIPER	On	Battery voltage
			Off	0 V	

Is the inspection result normal?

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

2. CHECK REAR WIPER MOTOR CIRCUIT

1. Turn power 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	
M23	54	D554	2	Yes

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M23	54		No

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-86, "Removal and Installation"](#).
NO >> Repair or replace harness.

3. CHECK REAR WIPER MOTOR GROUND OPEN CIRCUIT

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REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Check continuity between rear wiper motor harness connector and ground.

Rear wiper motor		Ground	Continuity
Connector	Terminal		
D554	4		Yes

Is the inspection result normal?

- YES >> Replace rear wiper motor. Refer to [WW-63, "Removal and Installation"](#).
NO >> Repair or replace harness.

REAR WIPER STOP POSITION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

REAR WIPER STOP POSITION SIGNAL CIRCUIT

Component Function Check

INFOID:000000008744395

1. CHECK REAR WIPER STOP POSITION SIGNAL

④ With CONSULT

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-41. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008744396

1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

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

(+)		(-)	Voltage (Approx.)
Rear wiper motor			
Connector	Terminal	Ground	Battery voltage
D554	3		

Is the inspection result normal?

- YES >> Replace rear wiper motor. Refer to [WW-63. "Removal and Installation"](#).
 NO >> GO TO 2.

2. CHECK REAR WIPER MOTOR CIRCUIT

1. Turn power 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	
M23	44	D554	3	Yes

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M23	44		No

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-86. "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:000000008744397

Symptom		Probable malfunction location	Inspection item	
Front wiper does not operate	HI only	<ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-85, "Symptom Table" .	
		<ul style="list-style-type: none"> IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor 	Front wiper motor (HI) circuit Refer to WW-35, "Component Function Check" .	
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R Data monitor "FR WIP REQ"	
	LO and INT	<ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-85, "Symptom Table" .	
		<ul style="list-style-type: none"> IPDM E/R Harness between IPDM E/R and front wiper motor Front wiper motor 	Front wiper motor (LO) circuit Refer to WW-34, "Component Function Check" .	
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R Data monitor "FR WIP REQ"	
	INT only	<ul style="list-style-type: none"> Combination switch Harness between combination switch and BCM BCM 	Combination switch Refer to BCS-85, "Symptom Table" .	
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R Data monitor "FR WIP REQ"	
	HI, LO and INT	SYMPTOM DIAGNOSIS Refer to WW-45, "Diagnosis Procedure" .		
	Front wiper does not stop	HI only	<ul style="list-style-type: none"> Combination switch BCM 	Combination switch Refer to BCS-85, "Symptom Table" .
Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 			IPDM E/R Data monitor "FR WIP REQ"	
IPDM E/R			—	
LO only		<ul style="list-style-type: none"> Combination switch BCM 	Combination switch Refer to BCS-85, "Symptom Table" .	
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R Data monitor "FR WIP REQ"	
		IPDM E/R	—	
INT only		<ul style="list-style-type: none"> Combination switch BCM 	Combination switch Refer to BCS-85, "Symptom Table" .	
		Front wiper request signal <ul style="list-style-type: none"> BCM IPDM E/R 	IPDM E/R Data monitor "FR WIP REQ"	

WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symptom	Probable malfunction location	Inspection item	
Front wiper does not operate normally	Intermittent adjustment cannot be performed	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM Refer to BCS-85, "Symptom Table" .	
		—	
	Intermittent control linked with vehicle speed cannot be performed	Check the wiper setting is linked with vehicle speed. Refer to BCS-18, "WIPER : CONSULT Function - WIPER" .	
	Service positioning operation does not operate	<ul style="list-style-type: none"> • Combination switch • BCM • IPDM E/R Refer to BCS-85, "Symptom Table" .	
	Wiper is not linked to the washer operation	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM Refer to BCS-85, "Symptom Table" .	
		—	
Does not return to stop position [Repeatedly operates for 10 seconds and then stops for 20 seconds. After that, it stops the operation. (Fail-safe)]	<ul style="list-style-type: none"> • IPDM E/R • Harness between IPDM E/R and front wiper motor • Front wiper motor Refer to WW-36, "Component Function Check" .		
Rear wiper does not operate	ON only	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM Refer to BCS-85, "Symptom Table" .	
	INT only	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM Refer to BCS-85, "Symptom Table" .	
	ON and INT	<ul style="list-style-type: none"> • Combination switch • Harness between combination switch and BCM • BCM Refer to BCS-85, "Symptom Table" .	
Rear wiper does not stop	ON only	<ul style="list-style-type: none"> • BCM • Harness between rear wiper motor and BCM • Harness between rear wiper motor and ground • Rear wiper motor Refer to WW-39, "Component Function Check" .	
	INT only	<ul style="list-style-type: none"> • Combination switch • BCM Refer to BCS-85, "Symptom Table" .	
Rear wiper does not operate normally	Wiper is not linked to the washer operation	<ul style="list-style-type: none"> • Combination switch • Harness between rear wiper motor and BCM • BCM Refer to BCS-85, "Symptom Table" .	
		—	
	Rear wiper does not return to the stop position. [Stops after a five-second operation. (Fail-safe)]	<ul style="list-style-type: none"> • BCM • Harness between rear wiper motor and BCM • Rear wiper motor Refer to WW-41, "Component Function Check" .	

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

INFOID:000000008744398

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.

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

FRONT WIPER DOES NOT OPERATE

Description

INFOID:000000008744399

The front wiper does not operate under any operation conditions.

Diagnosis Procedure

INFOID:000000008744400

Regarding Wiring Diagram information, refer to [WW-19, "Wiring Diagram"](#).

1. CHECK WIPER RELAY OPERATION

Ⓜ With CONSULT

1. Select FRONT WIPER of IPDM E/R active test item.
2. While 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 5.
- NO >> GO TO 2.

2. CHECK FRONT WIPER MOTOR FUSE

Check that the following fuse is not blown.

Unit	Location	No.	Capacity
Front wiper motor	IPDM E/R	45	30 A

Is the inspection result normal?

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

3. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

Check front wiper motor ground circuit. Refer to [WW-37, "Diagnosis Procedure"](#).

Is the inspection result normal?

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

4. CHECK FRONT WIPER MOTOR INPUT VOLTAGE

Ⓜ With CONSULT

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

(+)		(-)	Condition	Voltage (Approx.)	
Front wiper motor					
Connector	Terminal				
E32	1	Ground	FRONT WIPER	Lo	Battery voltage
				Off	0 V
	4			Hi	Battery voltage
				Off	0 V

FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

Is the inspection result normal?

YES >> Replace front wiper motor. Refer to [WW-59, "Removal and Installation"](#).

NO >> Replace IPDM E/R. Refer to [BCS-86, "Removal and Installation"](#).

5. CHECK FRONT WIPER REQUEST SIGNAL INPUT

Ⓟ With CONSULT

1. Select FR WIP REQ of IPDM E/R data monitor item.
2. Switch the front wiper switch to HI and LO.
3. While 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. Refer to [PCS-29, "Removal and Installation"](#).

NO >> GO TO 6.

6. CHECK COMBINATION SWITCH

Perform the inspection of the combination switch. Refer to [BCS-85, "Symptom Table"](#).

Is combination switch normal?

YES >> Replace BCM. Refer to [BCS-86, "Removal and Installation"](#).

NO >> Repair or replace the applicable parts.

WASHER TANK

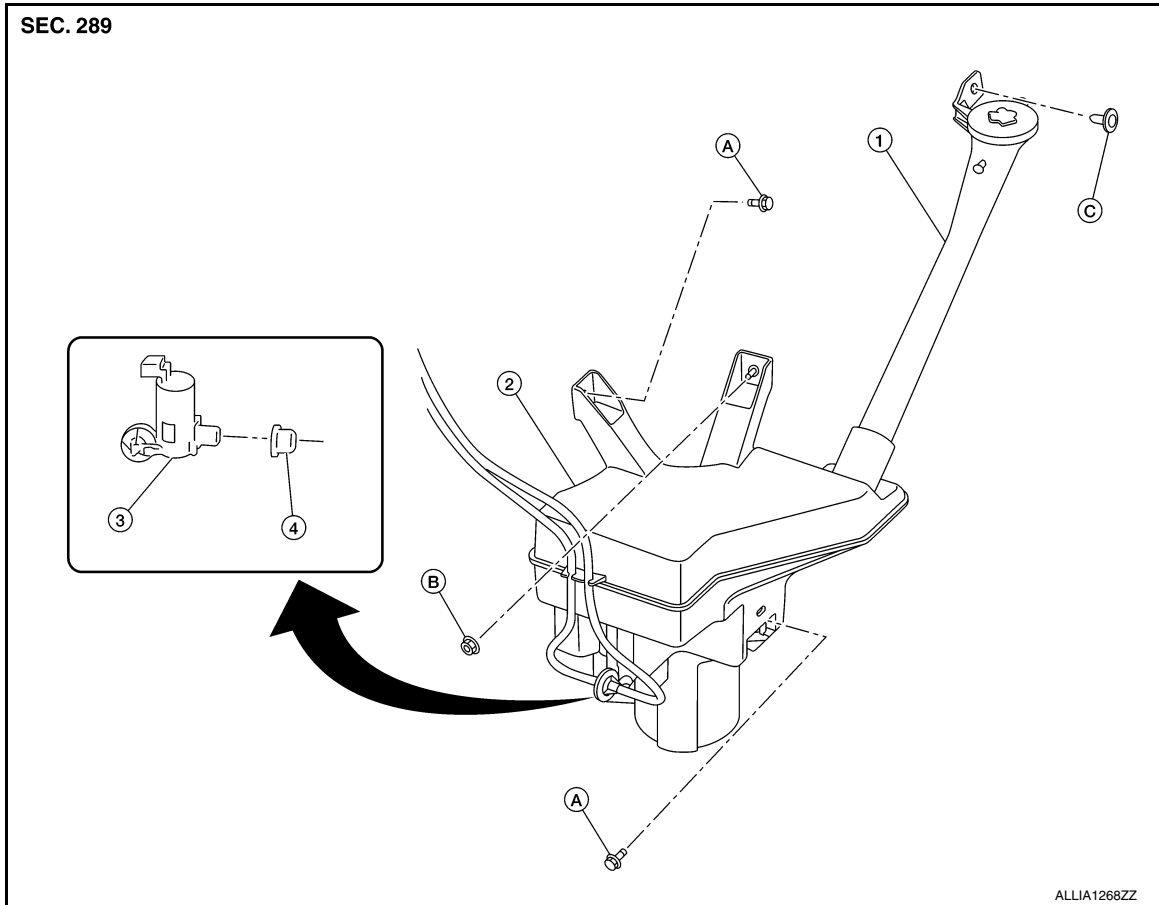
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

WASHER TANK

Exploded View

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| 1. Washer tank inlet | 2. Washer tank | 3. Washer pump |
| 4. Packing | A. Bolts | B. Nut |
| C. : Clip | | |

Removal and Installation

INFOID:000000008744402

REMOVAL

1. Fully open hood.
2. Remove washer tank inlet fixing clip.
3. Pull out washer tank inlet from washer tank.
4. Remove front bumper fascia. Refer to [EXT-13. "Removal and Installation"](#).
5. Disconnect washer pump harness connector and remove the fixing clip.
6. Disconnect washer level switch harness connector (if equipped).
7. Disconnect front washer tube and rear washer tube.
8. Remove washer tank mounting bolts.
9. Remove washer tank.

INSTALLATION

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

CAUTION:

Add water up to the top of washer tank inlet after installing and check that there is no leakage.

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WASHER TANK

< REMOVAL AND INSTALLATION >

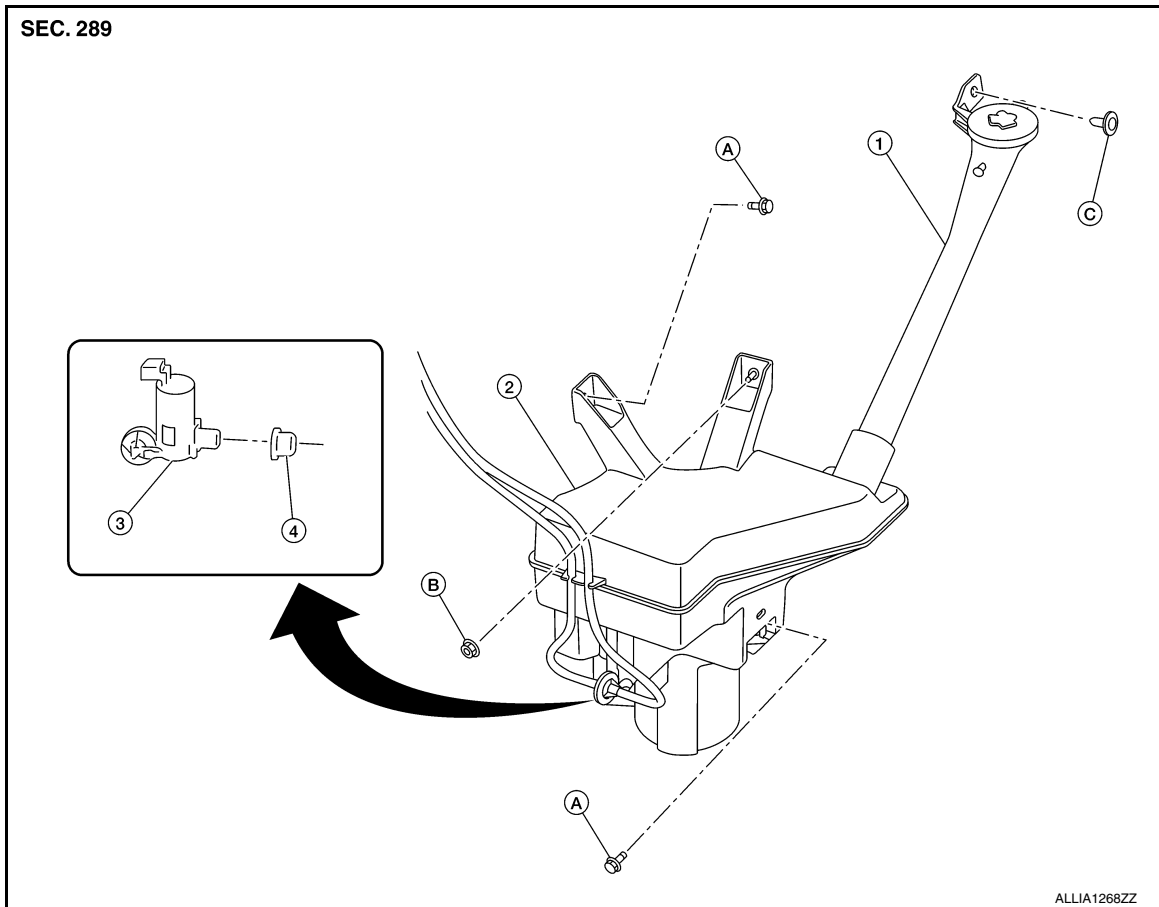
WASHER PUMP

< REMOVAL AND INSTALLATION >

WASHER PUMP

Exploded View

INFOID:000000008744403



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| 1. Washer tank inlet | 2. Washer tank | 3. Washer pump |
| 4. Packing | A. Bolts | B. Nut |
| C. : Clip | | |

Removal and Installation

INFOID:000000008744404

REMOVAL

1. Remove front bumper fascia. Refer to [EXT-13. "Removal and Installation"](#).
2. Disconnect washer pump harness connector.
3. Disconnect front washer tube and rear washer tube.
4. Remove washer pump from the washer tank.
5. Remove packing from washer tank.

INSTALLATION

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

CAUTION:

- Check that there is no leakage after installation or replace packing with new part if it has been damaged.
- Never twist the packing when installing the washer pump to prevent damage to the part.

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WASHER LEVEL SWITCH

< REMOVAL AND INSTALLATION >

WASHER LEVEL SWITCH

Removal and Installation

INFOID:000000008744405

The washer level switch must be replaced together with the washer tank as an assembly. Refer to [WW-47](#), "[Removal and Installation](#)".

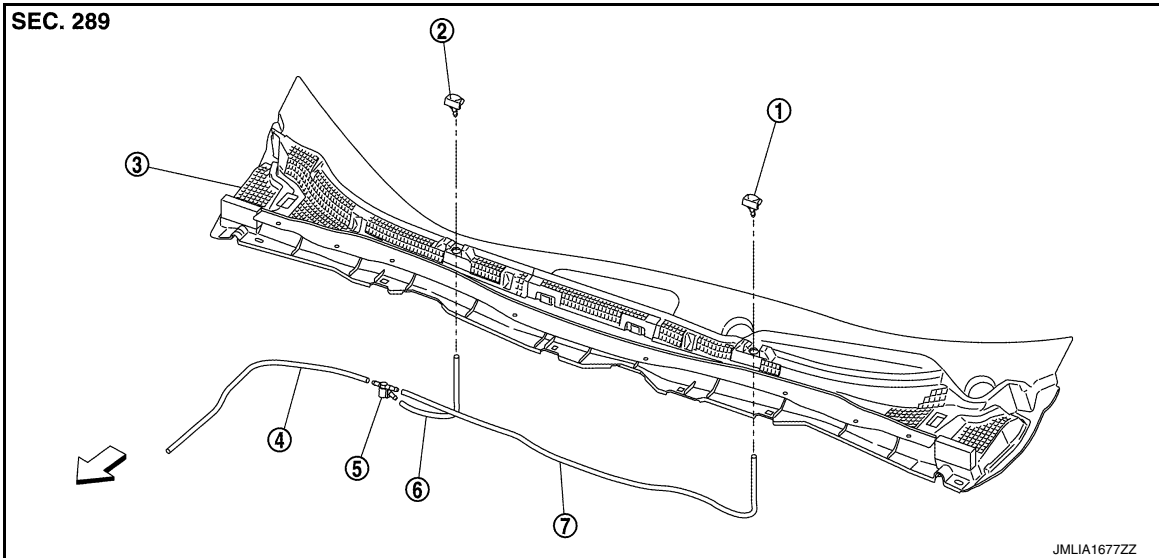
FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

FRONT WASHER NOZZLE AND TUBE

Exploded View

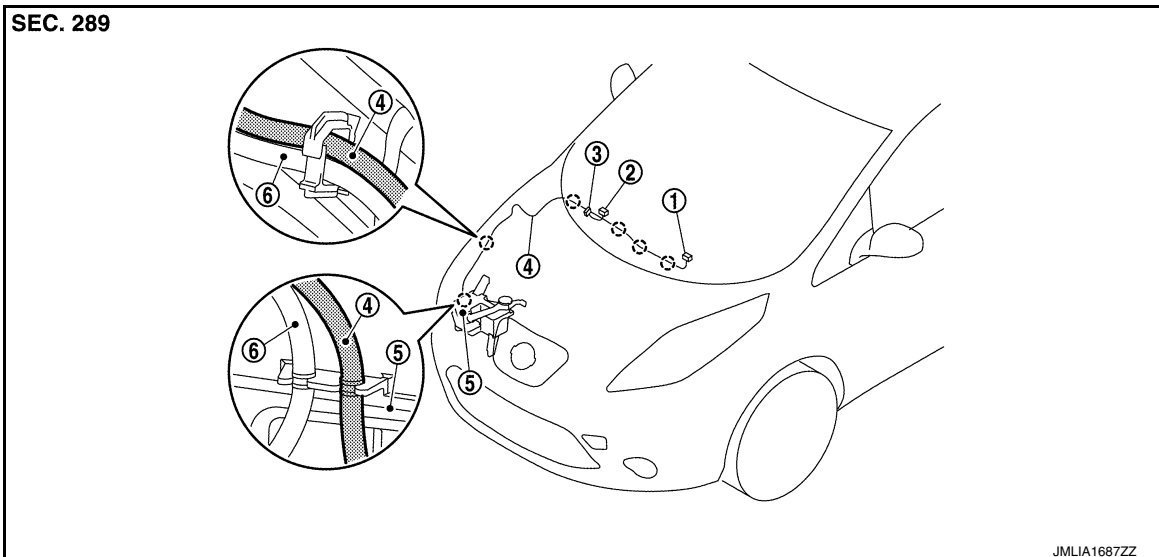
INFOID:000000008744406



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|----------------------------------|---------------------------|-------------------------|
| 1. Front washer nozzle LH | 2. Front washer nozzle RH | 3. Cowl top cover |
| 4. Front washer tube (tank side) | 5. Check valve | 6. Front washer tube RH |
| 7. Front washer tube LH | | |
- ← : Vehicle front

Hydraulic Layout

INFOID:000000008744407



- | | | |
|---------------------------|---------------------------|---------------------|
| 1. Front washer nozzle LH | 2. Front washer nozzle RH | 3. Check valve |
| 4. Front washer tube | 5. Washer tank | 6. Rear washer tube |
- : Clip

Removal and Installation

INFOID:000000008744408

REMOVAL

1. Fully open hood assembly.

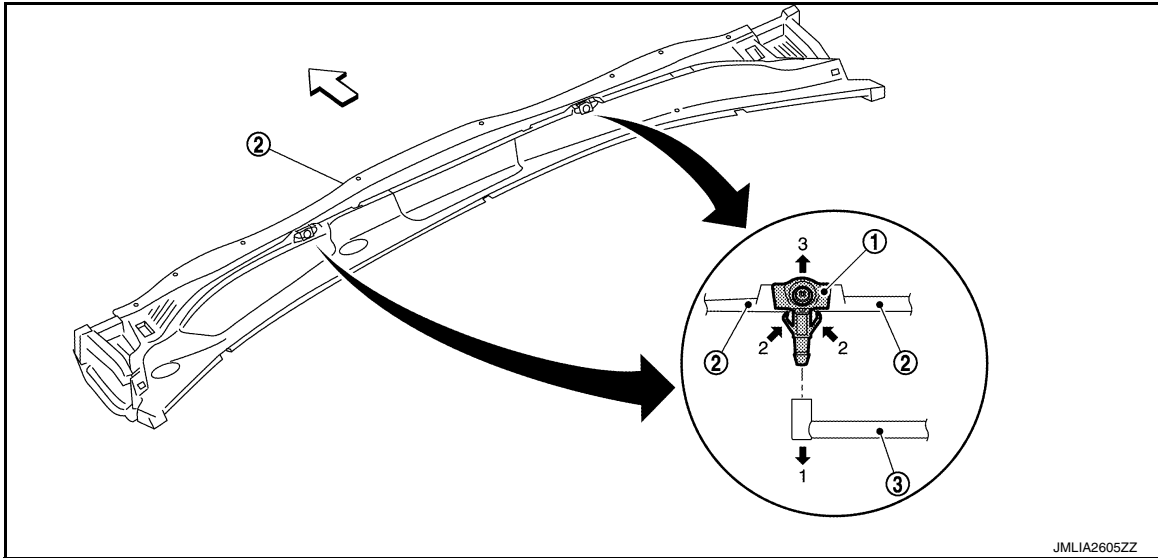
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WW

FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

2. Remove front washer nozzle.



↔ : Vehicle front

- a. Remove cowl top cover (2). Refer to [EXT-19, "Removal and Installation"](#).
- b. Remove front washer tube (3) from front washer nozzle (1).
- c. Press front washer nozzle fixing pawls toward the direction shown by the arrows 2 and pull up to remove.

INSTALLATION

1. Install front washer nozzle into the cowl top cover.
CAUTION:
The spray positions differ, check that left and right nozzles are installed correctly.
2. Connect front washer tube to the front washer nozzle.
3. Adjust the front washer nozzle spray position. Refer to [WW-52, "Inspection and Adjustment"](#).

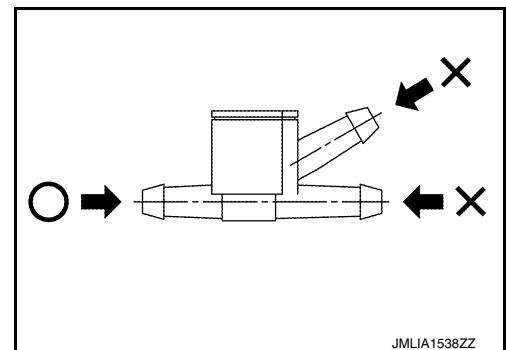
Inspection and Adjustment

INFOID:000000008744409

INSPECTION

Washer Nozzle Inspection

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



ADJUSTMENT

Washer Nozzle Spray Position Adjustment

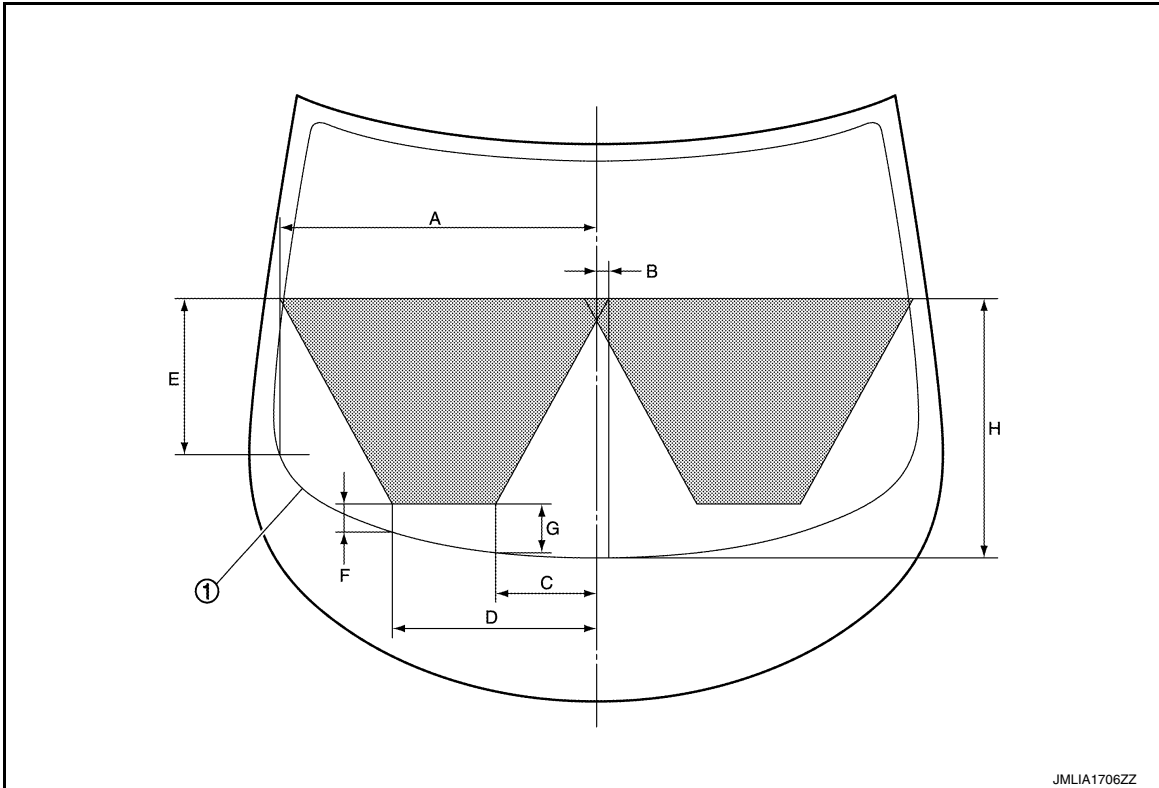
Adjust spray positions to match the positions shown in the figure.

NOTE:

The spray position in the passenger side is similar to the one in the driver side.

FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >



1. Black printed frame line

: Spray area

Unit: mm (in)

Driver and Passenger side

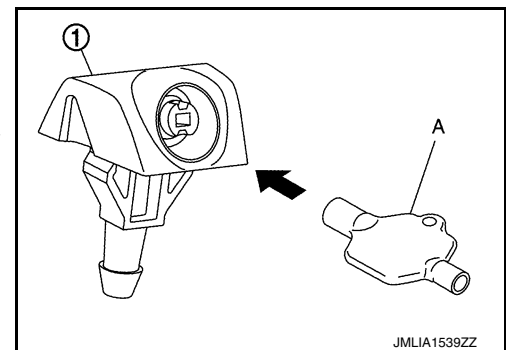
A	B	C	D	E	F	G	H
626.0 (24.65)	29.2 (1.15)	193.1 (7.60)	399.7 (15.74)	344.0 (13.54)	58.4 (2.30)	105.4 (4.15)	547.3 (21.55)

CAUTION:

- Use washer nozzle adjuster* (A) for nozzle adjustment.
 - Do not use needle or small pin for nozzle adjustment.
- (Washer nozzle adjuster is included with shipment of nozzle)

NOTE:

If wax or dust gets into the front washer nozzle (1), remove wax or dust with a needle or small pin.



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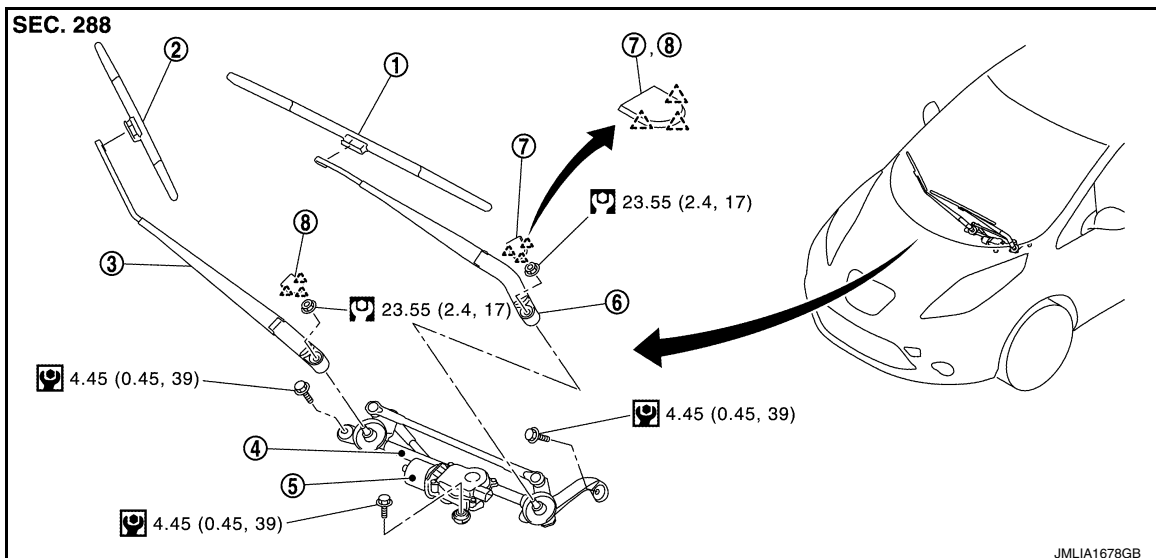
FRONT WIPER ARM

< REMOVAL AND INSTALLATION >


FRONT WIPER ARM


Exploded View


INFOID:000000008744410



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|-------------------------------|---------------------------|-----------------------|
| 1. Front wiper blade LH | 2. Front wiper blade RH | 3. Front wiper arm RH |
| 4. Front wiper drive assembly | 5. Front wiper motor | 6. Front wiper arm LH |
| 7. Front wiper arm cap LH | 8. Front wiper arm cap RH | |

 : Pawl

 : N·m (kg-m, in-lb)

 : N·m (kg-m, ft-lb)

Removal and Installation

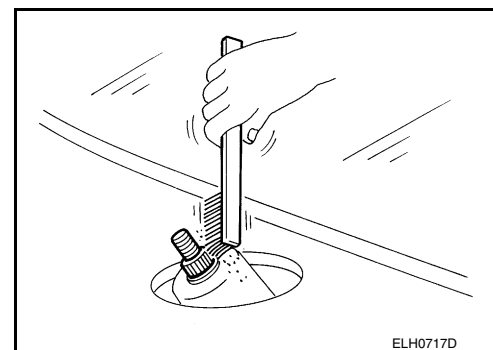
INFOID:000000008744411

REMOVAL

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

INSTALLATION

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



2. Operate front wiper motor to move the front wiper to the auto stop position.
3. Adjust front wiper blade position. Refer to [WW-55, "Adjustment"](#).
4. Install front wiper arm by tightening the mounting nuts.

FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

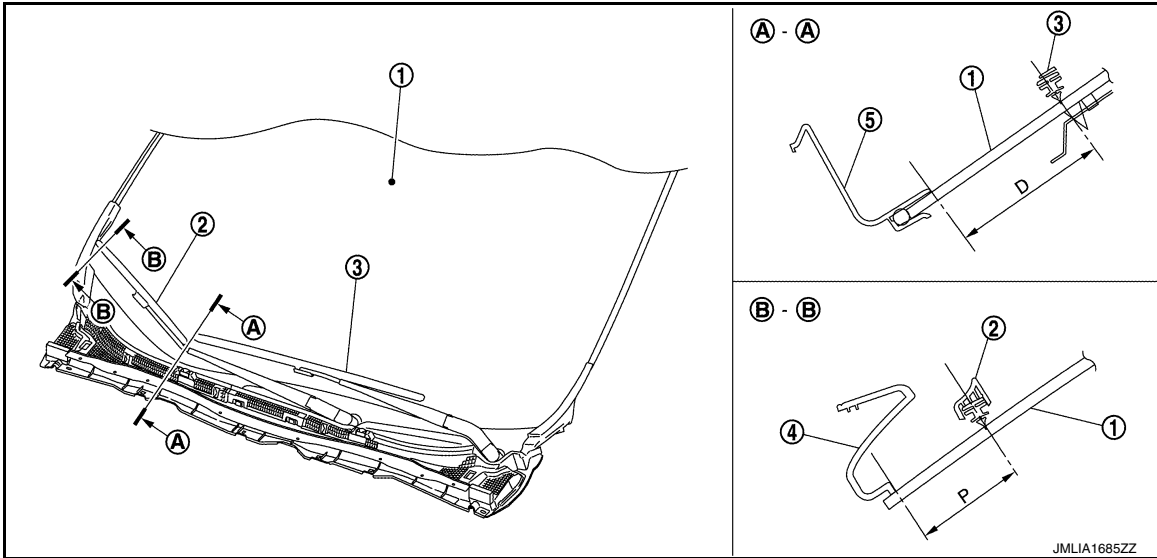
5. Inject the washer fluid.
6. Operate front wiper to move it to the auto stop position.
7. Check that the front wiper blades stop at the specified position.
8. Install front wiper arm caps.

Adjustment

INFOID:000000008744412

WIPER BLADE POSITION ADJUSTMENT

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



1. Windshield glass assembly
4. Front fender cover

2. Front wiper blade RH
5. Cowl top cover

3. Front wiper blade LH

Standard clearance

D : 86.2 ± 7.5 mm (3.394 ± 0.295 in)

P : 48.5 ± 7.5 mm (1.909 ± 0.295 in)

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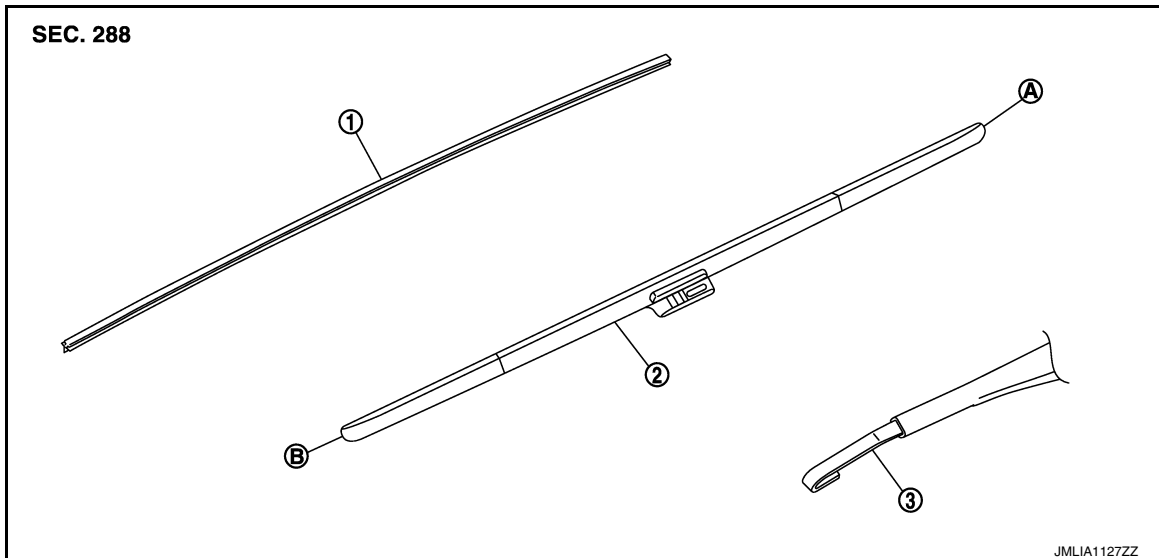
FRONT WIPER BLADE

< REMOVAL AND INSTALLATION >

FRONT WIPER BLADE

Exploded View

INFOID:000000008744413



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

Removal and Installation

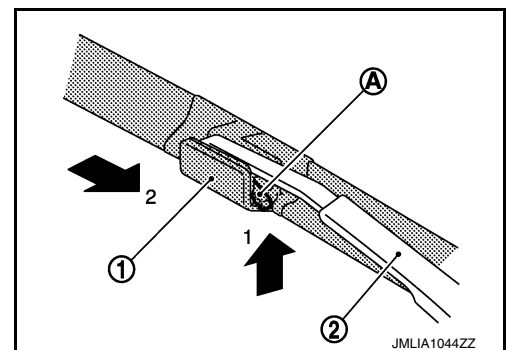
INFOID:000000008744414

REMOVAL

- Put the wiper arms into the service position.
 - Turn the ignition switch ON and then OFF.
 - Immediately pull and hold the wiper washer switch towards you until the wiper arms begin to move. Release the switch as soon as the arms begin to move. The arms will stop in the service position.
- Lift the arm away from the windshield glass.
- Push up the lever (A) of wiper blade (1), while sliding wiper blade toward the direction of the arrow, to remove it from wiper arm (2).

CAUTION:

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



INSTALLATION

CAUTION:

Return the wiper arm to the service position on the windshield to prevent damage when the hood is opened.

- Install wiper blade into wiper arm.
- Lay the wiper arm back down in the service position on the windshield.
- Turn the ignition ON and operate the windshield wipers to ensure the repair has been completed properly. Operating the windshield wipers will cancel service mode.
- Check that the wiper blade contacts the windshield properly; otherwise the wiper arm may be damaged from wind pressure while driving.

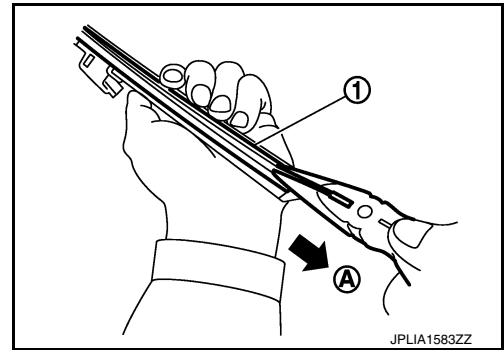
FRONT WIPER BLADE

< REMOVAL AND INSTALLATION >

Replacement

INFOID:000000008744415

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

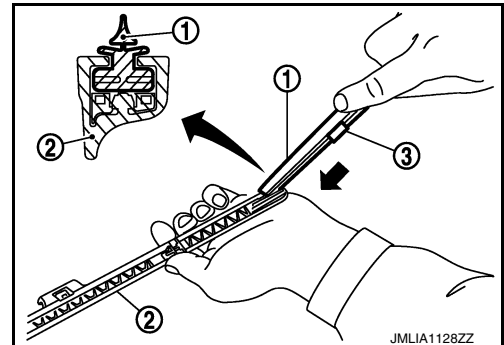


2. Insert the tip of new wiper refill (1) into the rear end of wiper blade (2). Slide the new wiper refill to the direction shown by the arrow while pressing the new wiper refill onto the wiper blade rear end.

NOTE:

- Insert the wiper refill to be held securely by tab of wiper blade as shown in section.
- After the wiper refill is fully inserted, remove the holder* (3).

*: Attached to service parts.

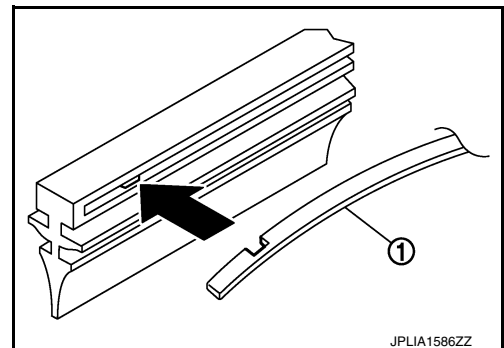
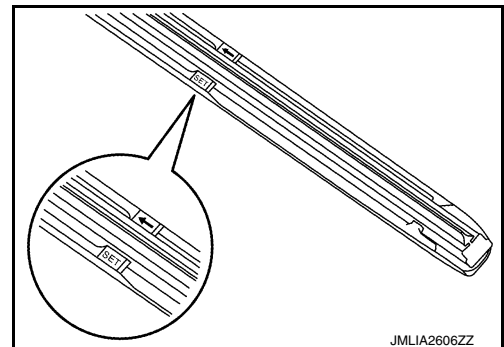


3. Insert the new wiper refill toward the direction shown by the mark "←" until the stopper at the rear end of wiper refill fits in the "SET" mark tab on wiper blade.
4. Untwist the twisted wiper refill at the rear end of wiper blade, if any.
5. Check the following items after replacing wiper refill.
 - Wiper refill is not twisted at all.
 - Wiper refill thoroughly fits in the tab on wiper blade.
 - Wiper refill is inserted from the proper direction.

NOTE:

When the vertebra is detached.

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



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FRONT WIPER DRIVE ASSEMBLY

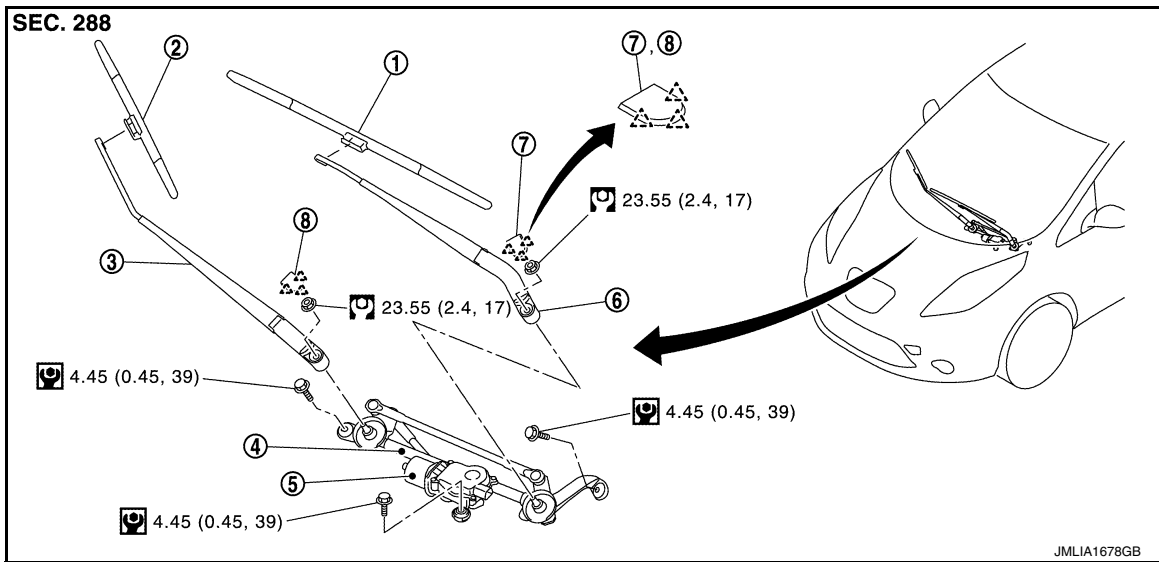
< REMOVAL AND INSTALLATION >

FRONT WIPER DRIVE ASSEMBLY

Exploded View

INFOID:00000008744416

REMOVAL



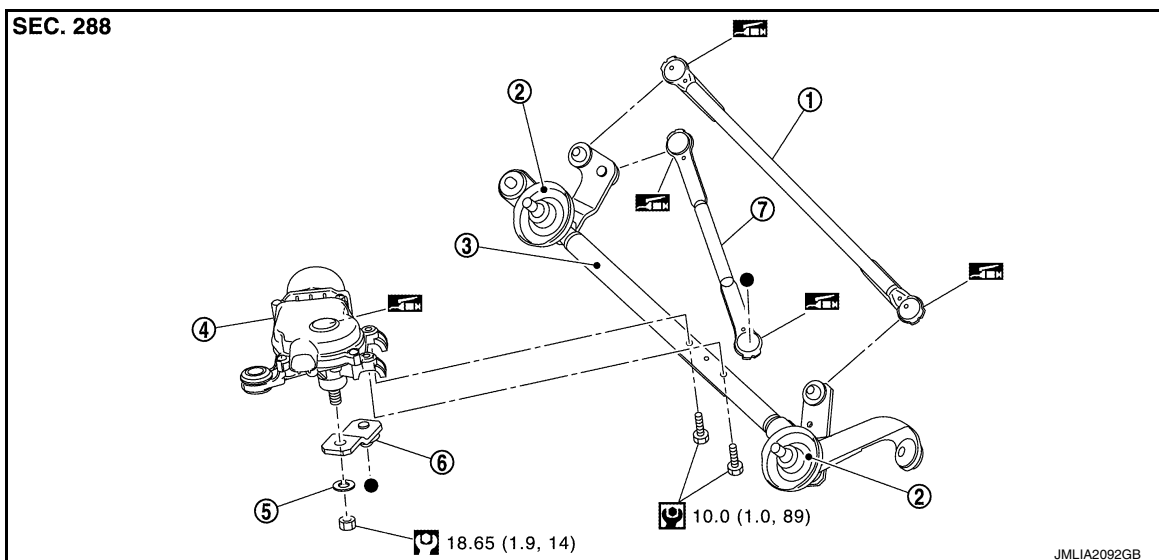
- | | | |
|-------------------------------|---------------------------|-----------------------|
| 1. Front wiper blade LH | 2. Front wiper blade RH | 3. Front wiper arm RH |
| 4. Front wiper drive assembly | 5. Front wiper motor | 6. Front wiper arm LH |
| 7. Front wiper arm cap LH | 8. Front wiper arm cap RH | |

: Pawl

: N·m (kg-m, in-lb)

: N·m (kg-m, ft-lb)

DISASSEMBLY





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|--------------------------|---------------------|--------------------------|
| 1. Front wiper linkage 2 | 2. Shaft seal | 3. Front wiper frame |
| 4. Front wiper motor | 5. Retaining washer | 6. Front wiper motor arm |
| 7. Front wiper linkage 1 | | |

: N·m (kg-m, in-lb)

FRONT WIPER DRIVE ASSEMBLY

< REMOVAL AND INSTALLATION >

 : N-m (kg-m, ft-lb)

 : Nissan MP special grease No.2

Removal and Installation

INFOID:000000008744417

REMOVAL

1. Remove front wiper arms (LH and RH). Refer to [WW-54, "Removal and Installation"](#).
2. Remove cowl top cover. Refer to [EXT-19, "Removal and Installation"](#).
3. Disconnect the front wiper motor harness connector.
4. Remove the mounting bolts from front wiper drive assembly.
5. Remove the front wiper drive assembly from the vehicle.

INSTALLATION

1. Install the front wiper drive assembly to the vehicle.
2. Connect front wiper motor harness connector.
3. Operate front wiper to move it to the auto stop position.
4. Install cowl top cover. Refer to [EXT-19, "Removal and Installation"](#).
5. Install front wiper arms. Refer to [WW-54, "Removal and Installation"](#).

Disassembly and Assembly

INFOID:000000008744418

DISASSEMBLY

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

ASSEMBLY

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

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WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

WIPER AND WASHER SWITCH

Exploded View

INFOID:000000008744419

Wiper and washer switch is integrated in the combination switch. Refer to [BCS-87. "Exploded View"](#).

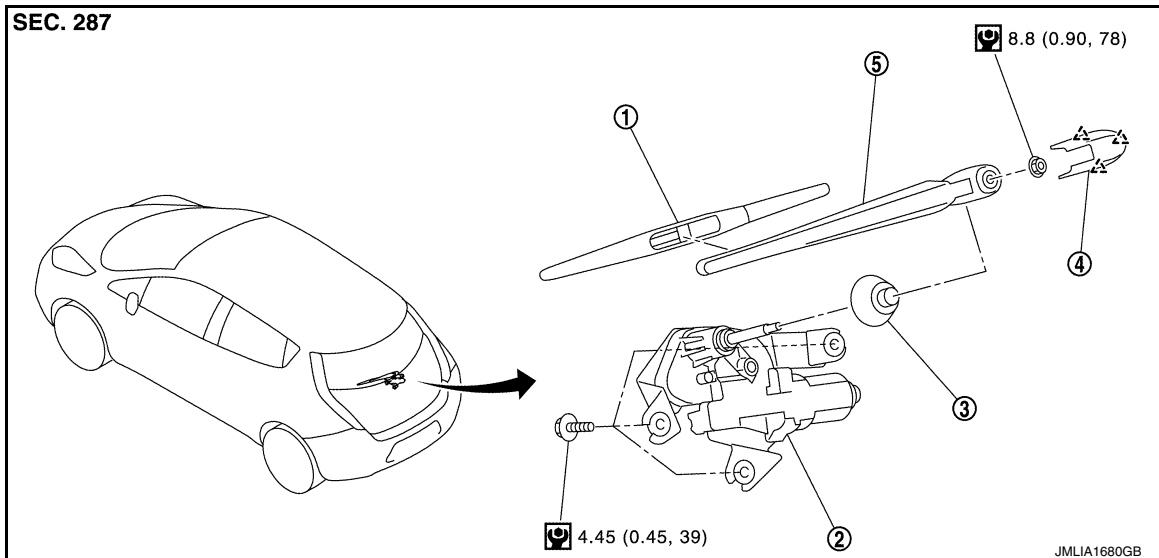
REAR WIPER ARM

< REMOVAL AND INSTALLATION >


REAR WIPER ARM


Exploded View

INFOID:000000008744420



- 1. Rear wiper blade
- 2. Rear wiper motor
- 3. Rear wiper pivot seal
- 4. Rear wiper arm cover
- 5. Rear wiper arm

 : Pawl

 : N·m (kg-m, in-lb)

Removal and Installation

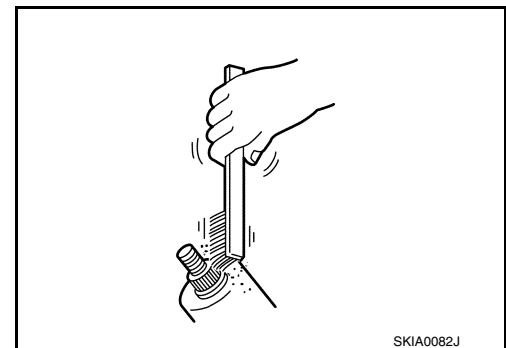
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REMOVAL

1. Operate rear wiper to the auto stop position.
2. Remove rear wiper arm cover.
3. Remove rear wiper arm mounting nut.
4. Remove wiper arm from the vehicle.

INSTALLATION

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



2. Operate the rear wiper motor to the auto stop position.
3. Adjust the rear wiper blade position. Refer to [WW-62, "Adjustment"](#).
4. Install the rear wiper arm by tightening the mounting nut.
5. Inject the washer fluid.
6. Operate the rear wiper to the auto stop position.
7. Check that the rear wiper blades stop at the specified position.

REAR WIPER ARM

< REMOVAL AND INSTALLATION >

8. Install the rear wiper arm cover.

Adjustment

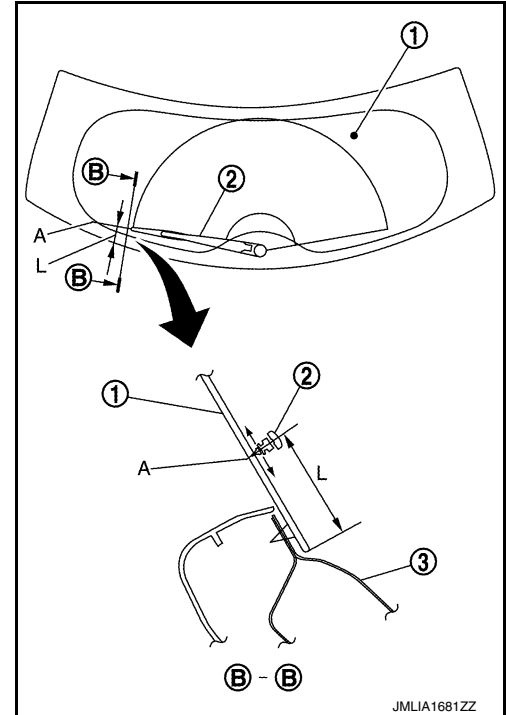
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REAR WIPER BLADE POSITION ADJUSTMENT

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

Standard clearance

1. Back door window glass
 2. Rear wiper blade
 3. Back door outer panel
- A : Rear defogger wire print
L : 53.1 ± 7.5 mm (2.091 ± 0.295 in)



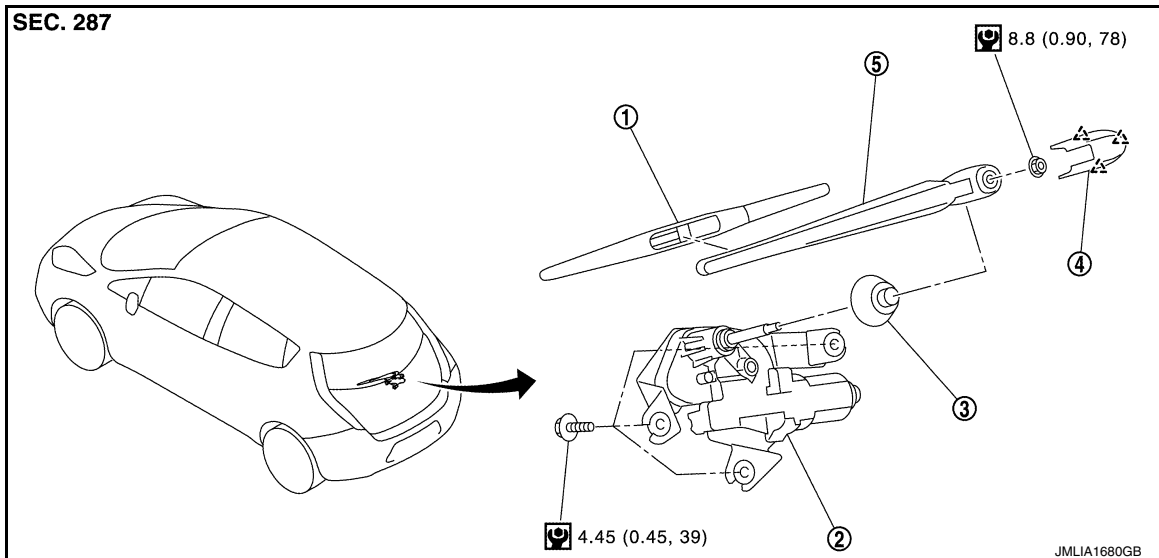
REAR WIPER MOTOR

< REMOVAL AND INSTALLATION >


REAR WIPER MOTOR


Exploded View

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| 1. Rear wiper blade | 2. Rear wiper motor | 3. Rear wiper pivot seal |
| 4. Rear wiper arm cover | 5. Rear wiper arm | |

 : Pawl

 : N·m (kg-m, in-lb)

Removal and Installation

INFOID:000000008744424

REMOVAL

1. Remove rear wiper arm. Refer to [WW-61. "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 bolts.
5. Remove rear wiper motor from the vehicle.
6. Remove the pivot seal.

INSTALLATION

Install in the reverse order of removal.

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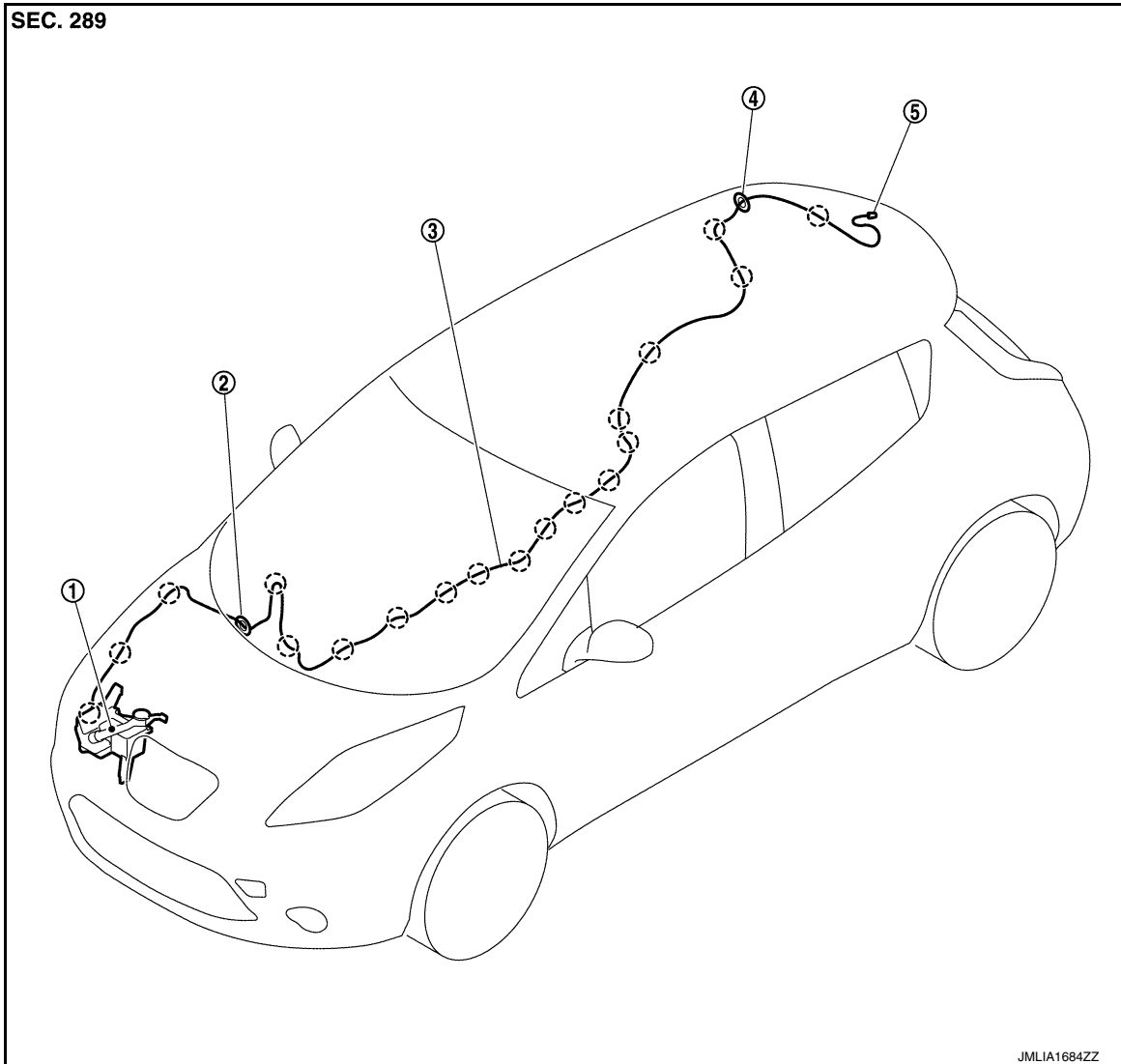
REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

REAR WASHER NOZZLE AND TUBE

Hydraulic Layout

INFOID:000000008744425



- | | | |
|-----------------|-----------------------|---------------------|
| 1. Washer tank | 2. Front grommet | 3. Rear washer tube |
| 4. Rear grommet | 5. Rear washer nozzle | |

○ : Clip

Removal and Installation

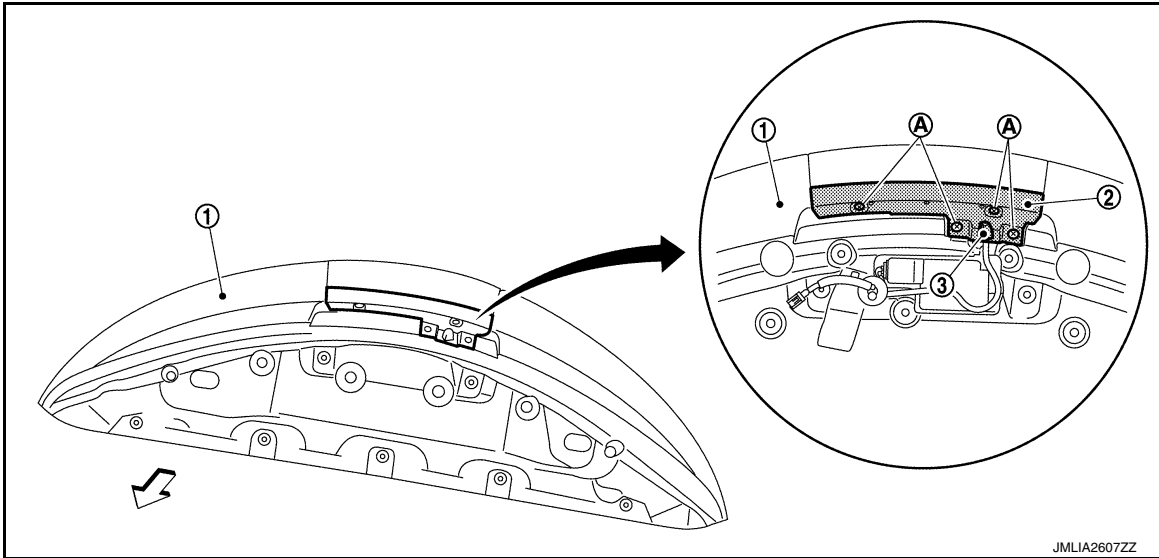
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REMOVAL

REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

1. Remove rear spoiler (1). Refer to [EXT-36. "Removal and Installation"](#).



↔ : Vehicle front

2. Remove high-mounted stop lamp cover (2) mounting screws (A), and then remove the bracket.
3. Disconnect rear washer nozzle tube and remove rear washer nozzle (3) from the bracket.

INSTALLATION

Install in the reverse order of removal.

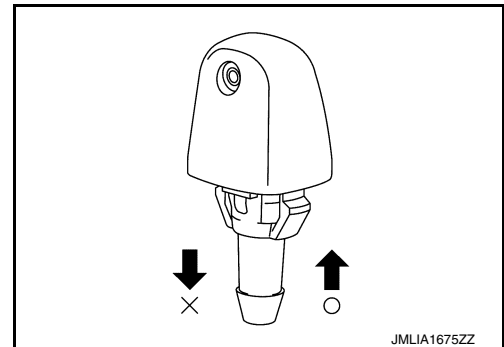
Inspection and Adjustment

INFOID:000000008744427

INSPECTION

Washer Nozzle Inspection

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



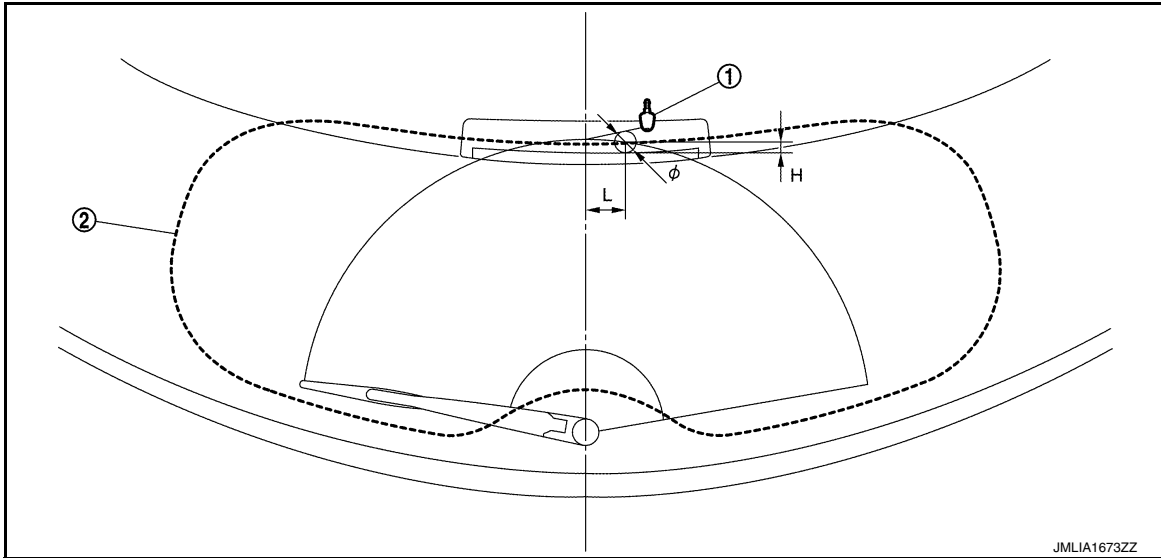
ADJUSTMENT

Washer Nozzle Spray Position adjustment

REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

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



1. Rear washer nozzle

H : 10.7 (0.42)

L : 31.6 (1.24)

Unit: mm (in)

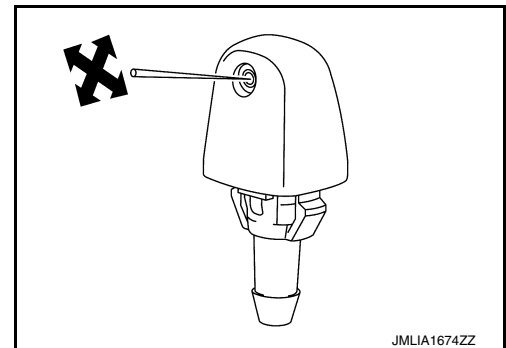
2. Black print frame line

ϕ : 30 (1.18)

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

NOTE:

If wax or dust gets into the spray opening of rear washer nozzle, remove wax or dust with a needle or small pin.



SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications

INFOID:000000009344710

WINDSHIELD WASHER FLUID

Windshield washer fluid capacity	4.5 ℓ (4 3/4 US qt, 4 Imp qt)
Windshield washer fluid specification	Refer to MA-12. "Fluids and Lubricants" .

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