

WW  
**SECTION**  
**WIPER & WASHER**

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# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

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

INFOID:000000012423242

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

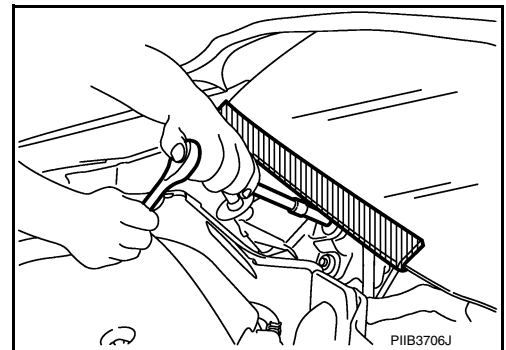
#### **WARNING:**

- 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

INFOID:000000012423243

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



#### Precaution for Work

INFOID:000000012423244

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:

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- Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
- Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
- Then rub with a soft, dry cloth.
- Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

# PREPARATION

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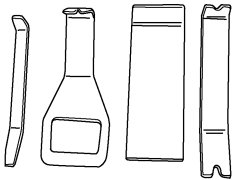
## PREPARATION

### PREPARATION

#### Special Service Tools

INFOID:0000000012423245

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

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# COMPONENT PARTS

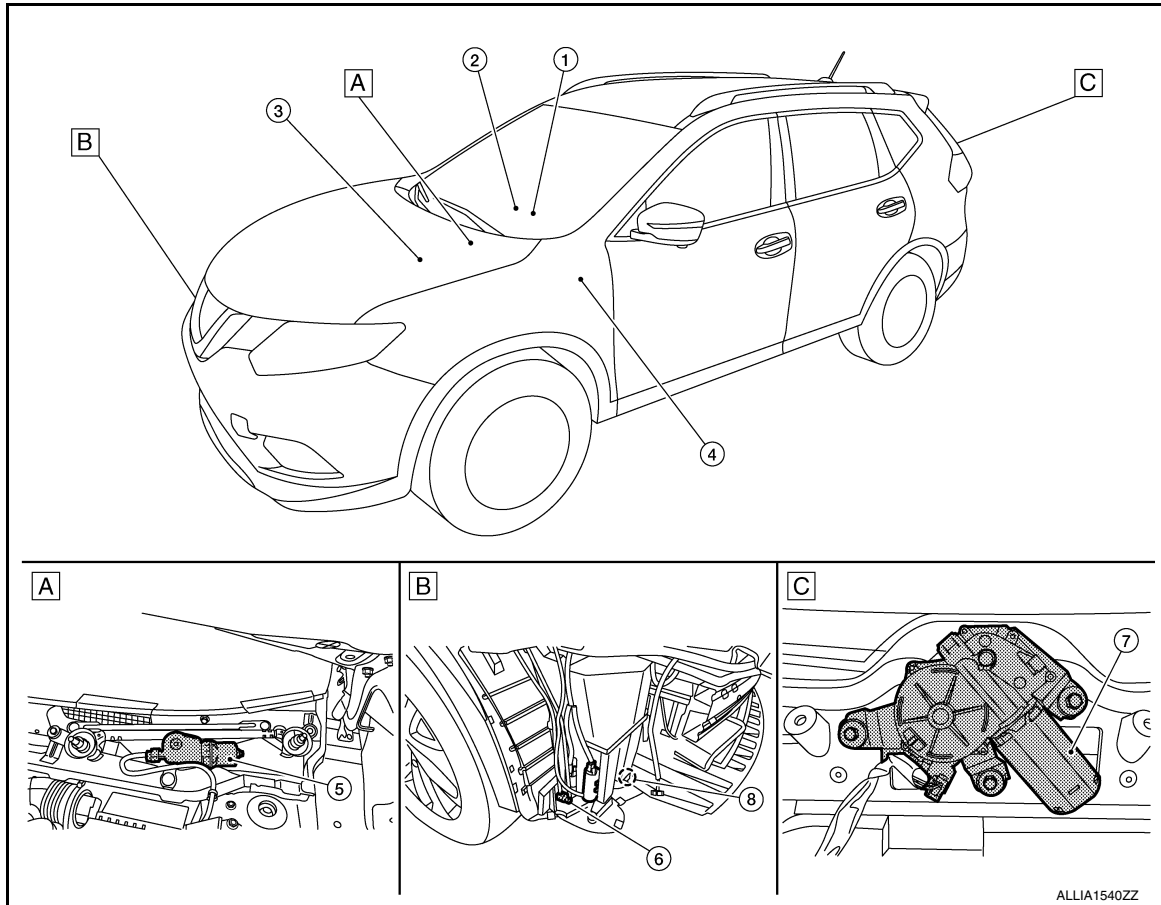
< SYSTEM DESCRIPTION >

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000012423246



- A. View of cowl area (with cowl top cover removed)    B. RH front of vehicle (with front bumper fascia removed)    C. View with back door finisher removed

No.	Component	Function
1.	Combination switch (Wiper and washer switch)	Refer to <a href="#">WW-8. "FRONT WIPER AND WASHER SYSTEM : System Description"</a> . Refer to <a href="#">BCS-77. "Removal and Installation"</a> .
2.	Combination meter	Transmits the vehicle speed signal to BCM via CAN communication.
3.	IPDM E/R	<ul style="list-style-type: none"> <li>Controls the integrated relay according to the request (via CAN communication) from BCM.</li> <li>Performs the auto stop control of the front wiper.</li> </ul> Refer to <a href="#">WW-6. "Component Parts Location"</a> .
4.	BCM	<ul style="list-style-type: none"> <li>Judges each switch status by the combination switch reading function.</li> <li>Requests (via CAN communication) the front wiper relay and the front wiper HI/LO relay ON to IPDM E/R.</li> <li>Supplies power to the rear wiper motor.</li> <li>Performs the auto stop control of the rear wiper.</li> </ul> Refer to <a href="#">WW-6. "Component Parts Location"</a> .
5.	Front wiper motor	Refer to <a href="#">WW-7. "Front wiper motor"</a> .
6.	Front and rear washer motor	Refer to <a href="#">WW-7. "Washer pump"</a> .
7.	Rear wiper motor	Refer to <a href="#">WW-7. "Rear wiper motor"</a> .
8.	Washer fluid level switch	Transmits the washer fluid level switch signal to the combination meter.

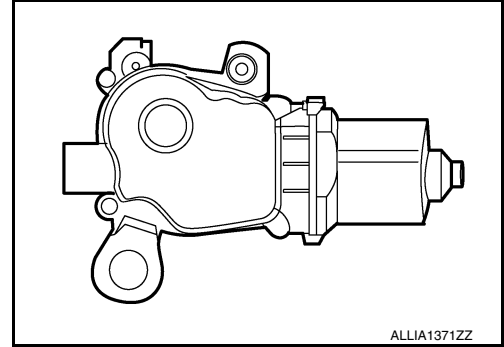
# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

### Front wiper motor

INFOID:000000012423247

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

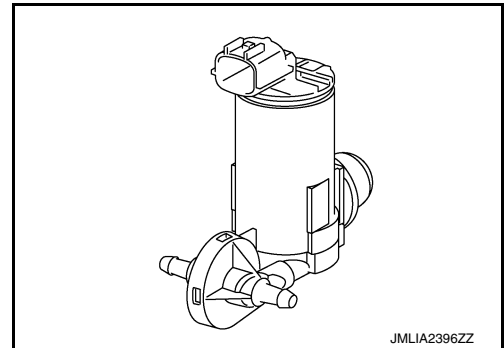


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### Washer pump

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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.

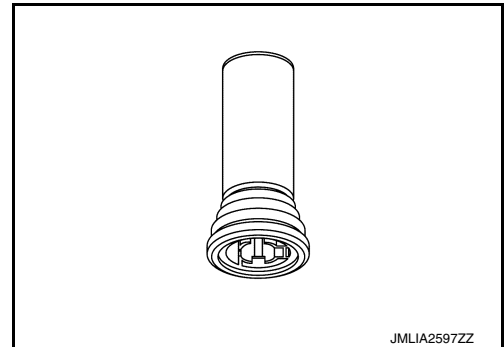


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### Washer fluid level switch

INFOID:000000012423249

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



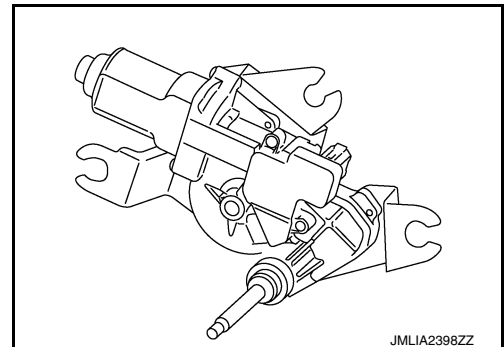
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### Rear wiper motor

INFOID:000000012423250

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



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# SYSTEM

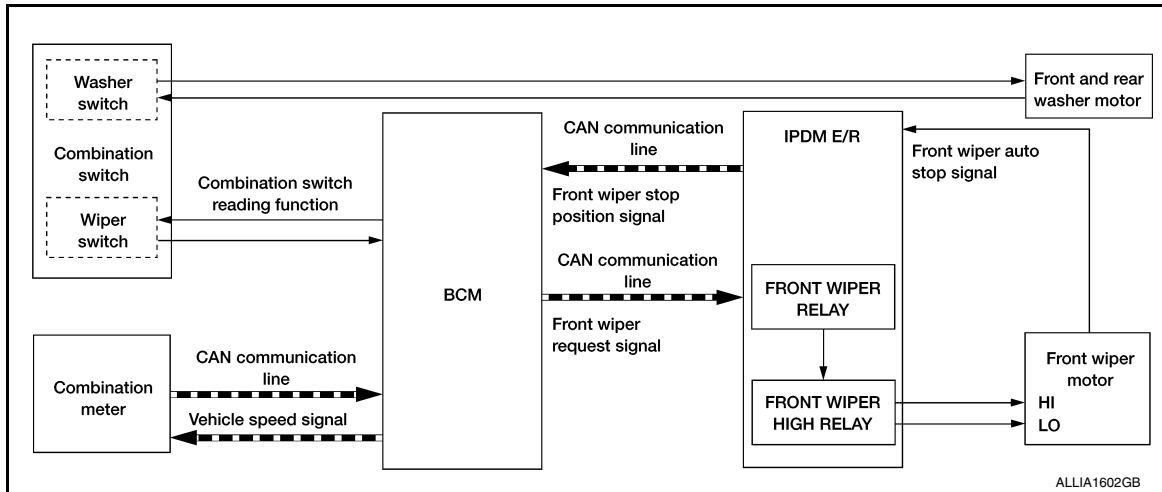
< SYSTEM DESCRIPTION >

## SYSTEM

### FRONT WIPER AND WASHER SYSTEM

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

INFOID:000000012423251



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

INFOID:000000012423252

##### OUTLINE

##### FRONT WIPER CONTROL (BASIC)

1. BCM detects the combination switch position by the combination switch reading function.
2. BCM transmits the front wiper request signal to the IPDM E/R using CAN communication.
3. IPDM E/R controls the integrated front wiper relay and front wiper high relay based on the status of the front wiper request signal.
4. IPDM E/R provides power to operate the front wiper motor.

##### LOW SPEED OPERATION

1. Ignition switch ON.
2. Front wiper switch in LO or MIST position.
3. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay.

##### HIGH SPEED OPERATION

1. Ignition switch ON.
2. Front wiper switch in HI.
3. BCM reads the combination switch position and transmits the front wiper request signal (HI) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay and the front wiper high relay.

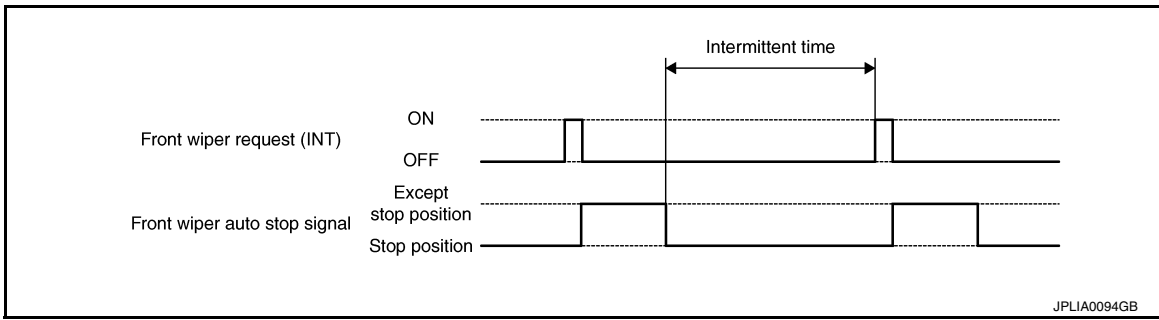
##### INTERMITTENT OPERATION

1. Ignition switch ON.
2. Front wiper switch INT.
3. BCM reads the combination switch position. BCM calculates the delay interval based on the table below and then transmits the front wiper request signal (INT) to IPDM E/R using CAN communication.
4. IPDM E/R turns ON the front wiper relay only once.
5. BCM detects stop position of the front wiper motor based on the front wiper stop position signal received from the IPDM E/R.
6. BCM transmits the front wiper request signal (INT) again after the delay interval.



# SYSTEM

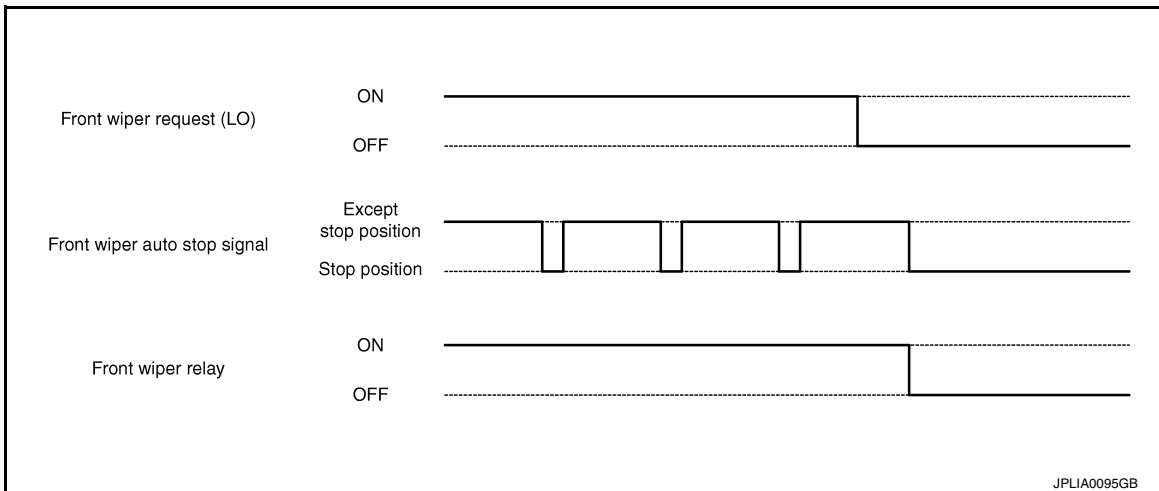
## < SYSTEM DESCRIPTION >



Intermittent switch position	Length of delay	Delay interval (s)
7	Short ↑ ↓ Long	0.4
6		1
5		2
4		3
3		5
2		10
1		16

### AUTO STOP OPERATION

1. Front wiper switch is turned OFF.
2. BCM monitors wiper switch position by combination switch reading position function.
3. BCM stops transmitting the front wiper request signal to the IPDM E/R.
4. IPDM E/R detects the front wiper auto stop signal from the position of the front wiper motor (stop position/ except stop position).
5. 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.
6. IPDM E/R turns the front wiper relay OFF when the front wiper motor has reached the stop position.



### MIST OPERATION

1. Ignition switch ON.
2. Front washer switch in OFF position.
3. Front wiper switch in MIST position.
4. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
5. IPDM E/R turns ON the front wiper relay.
6. The front wiper operates once after the front washer operation.

### WIPER/WASHER OPERATION

1. Ignition switch ON.

# SYSTEM

## < SYSTEM DESCRIPTION >

2. Front washer switch ON.
3. The front washer switch provides ground for the front and rear washer motor.
4. BCM reads the combination switch position and transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
5. BCM transmits the front wiper request signal (LO) to IPDM E/R using CAN communication.
6. IPDM E/R turns ON the front wiper relay.
7. The front wiper operates.

### NOTE:

BCM transmits the front wiper request signal (LO) so that the front wiper operates approximately 3 times after front washer switch OFF is detected.

## FRONT WIPER AND WASHER SYSTEM : Fail-Safe

INFOID:000000012423253

### FAIL-SAFE OPERATION

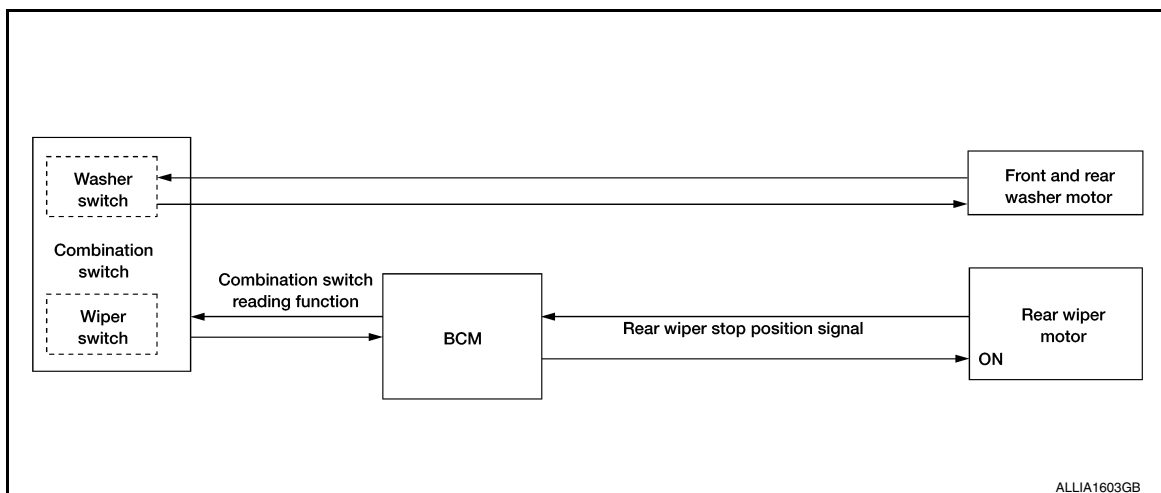
IPDM E/R performs the fail-safe function when the front wiper auto stop circuit is malfunctioning. Refer to [WW-10. "FRONT WIPER AND WASHER SYSTEM : Fail-Safe"](#).

## REAR WIPER AND WASHER SYSTEM

## REAR WIPER AND WASHER SYSTEM : System Description

INFOID:000000012423254

### 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.

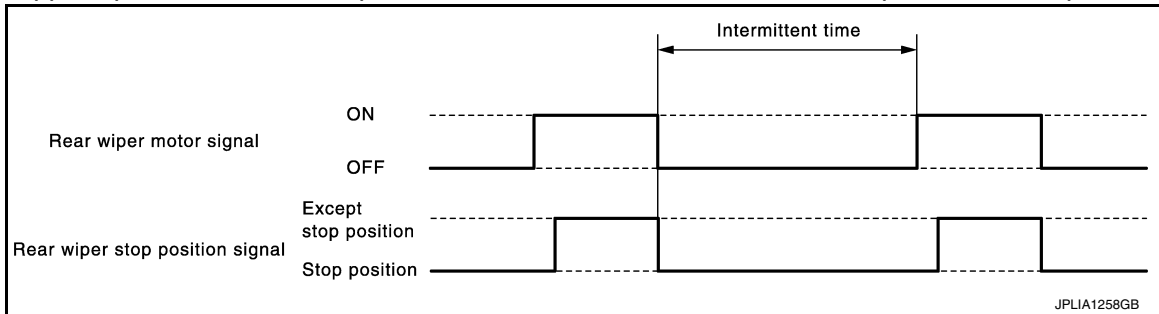
#### Rear wiper INT operating condition:

- Power switch ON

# SYSTEM

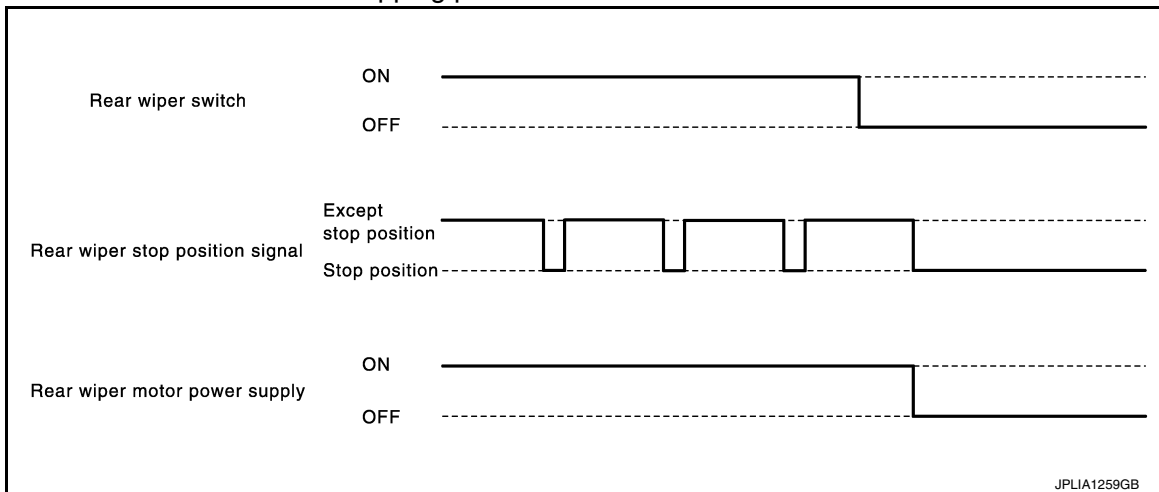
## < SYSTEM DESCRIPTION >

- 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 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:000000012423255

### FAIL-SAFE OPERATION

IPDM E/R performs the fail-safe function when the rear wiper auto stop circuit is malfunctioning. Refer to [WW-11, "REAR WIPER AND WASHER SYSTEM : Fail-safe"](#).

# DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000012588482

### 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"> <li>The vehicle specification can be read and saved.</li> <li>The vehicle specification can be written when replacing BCM.</li> </ul>
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		x	x	x	x		
Rear window defogger	REAR DEFOGGER			x	x	x		
Warning chime	BUZZER			x	x			
Interior room lamp timer	INT LAMP			x	x	x		
Exterior lamp	HEADLAMP			x	x	x		
Wiper and washer	WIPER			x	x	x		
Turn signal and hazard warning lamps	FLASHER			x	x			
Intelligent Key system	INTELLIGENT KEY		x	x	x	x		
Combination switch	COMB SW			x				
BCM	BCM	x	x			x	x	x
Immobilizer	IMMU		x	x	x			
Interior room lamp battery saver	BATTERY SAVER			x	x			
Back door open	TRUNK			x				
Vehicle security system	THEFT ALM			x	x	x		
RAP system	RETAINED PWR			x				
Signal buffer system	SIGNAL BUFFER			x				
Air conditioner	AIR CONDITIONER				x			

### WIPER

# DIAGNOSIS SYSTEM (BCM) (WITH INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

## WIPER : CONSULT Function (BCM - WIPER)

INFOID:000000012588483

### DATA MONITOR

Monitor Item [Unit]	Description
PUSH SW [On/Off]	Indicates condition of push-button ignition 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 motor 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	On*	Front wiper intermittent time linked with vehicle speed and wiper intermittent dial position.
	Off	Front wiper intermittent time is not linked with vehicle speed and wiper intermittent dial position.
FR RR DRIP	On*	Front wiper drop wipe and rear wiper drop wipe operation ON
	Off	Front wiper drop wipe and rear wiper drop wipe operation OFF
REAR WIPER LINK WITH REVERSE SETTING	On	Rear wiper operation linked with reverse ON
	Off*	Rear wiper operation linked with reverse OFF

\*: Initial Setting

## DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM)

< SYSTEM DESCRIPTION >

### DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000012588484

#### 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"> <li>• The vehicle specification can be read and saved.</li> <li>• The vehicle specification can be written when replacing BCM.</li> </ul>
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			x	x	x		
Rear window defogger	REAR DEFOGGER			x	x	x		
Warning chime	BUZZER			x	x			
Interior room lamp timer	INT LAMP			x	x	x		
Remote keyless entry system	MULTI REMOTE ENT					x		
Exterior lamp	HEADLAMP			x	x			
Wiper and washer	WIPER			x	x	x		
Turn signal and hazard warning lamps	FLASHER			x	x			
Combination switch	COMB SW			x				
BCM	BCM	x	x			x	x	x
Immobilizer	IMMU		x		x			
Interior room lamp battery saver	BATTERY SAVER			x	x			
Back door open	TRUNK			x				
Vehicle security system	THEFT ALM			x	x	x		
RAP system	RETAINED PWR			x				
TPMS	AIR PRESSURE MONITOR		x	x	x	x		

#### WIPER

WIPER : CONSULT Function (BCM - WIPER)

INFOID:000000012588485

#### DATA MONITOR

# DIAGNOSIS SYSTEM (BCM) (WITHOUT INTELLIGENT KEY SYSTEM)

## < SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
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 – 4]	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 motor 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	On*	Front wiper intermittent time linked with vehicle speed and wiper intermittent dial position.
	Off	Front wiper intermittent time is not linked with vehicle speed and wiper intermittent dial position.

\*: Initial Setting

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K

WW

M  
N  
O  
P

# DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (IPDM E/R)

### CONSULT Function (IPDM E/R)

INFOID:000000012588486

#### 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.

#### ECU IDENTIFICATION

The IPDM E/R part number is displayed.

#### SELF DIAGNOSTIC RESULT

Refer to [PCS-26. "DTC Index"](#).

#### DATA MONITOR

Monitor Item [Unit]	Description
REVERSE SIGNAL [Open/Close]	Indicates condition of transmission range switch R (Reverse) position.
IGN RELAY [Open/Close]	Indicates condition of ignition relay-1.
PUSH SW [Open/Close]	Indicates condition of push-button ignition switch.
INTERLOCK/PNP SW [Open/Close]	Indicates condition of transmission range switch P (Park) and N (Neutral) positions.
OIL PRESSURE SW [Open/Close]	Indicates condition of oil pressure switch.
HOOD SW [Open/Close]	Indicates condition of hood switch.
COMPRESSOR [OFF/ON]	Indicates condition of A/C compressor.
HORN RELAY [OFF/ ON]	Indicates condition of horn relay.
COOLING FAN [OFF/ON]	Indicates condition of cooling fan relay-1.
FRONT WIPER HI/LO RELAY [OFF/ON]	Indicates condition of front wiper high relay.
FRONT WIPER RELAY [OFF/ON]	Indicates condition of front wiper relay.
IGN RELAY OFF STATUS [OFF/ON]	Indicates condition of ignition relay-1 OFF status.
IGN RELAY ON STATUS [OFF/ON]	Indicates condition of ignition relay-1 ON status.
COOLING FAN RELAY 1 [OFF/ON]	Indicates condition of cooling fan relay-1.
STARTER RELAY [OFF/ON]	Indicates condition of starter relay.
COMP ECV DUTY [%]	Indicates condition of A/C compressor.
COOLING FAN RELAY 2 [%]	Indicates condition of cooling fan relay-2.
FR FOG LAMP LH [%]	Indicates condition of front fog lamp LH.
FR FOG LAMP RH [%]	Indicates condition of front fog lamp RH.
PARKING LAMP [%]	Indicates condition of parking lamp.
TAIL LAMP LH [%]	Indicates condition of tail lamp LH.
TAIL LAMP RH [%]	Indicates condition of tail lamp RH.
DAYTIME RUNNING LIGHT LH [%]	Indicates condition of daytime running light LH.
DAYTIME RUNNING LIGHT RH [%]	Indicates condition of daytime running light RH.
HEADLAMP (HI) LH [%]	Indicates condition of headlamp high beam LH.



## DIAGNOSIS SYSTEM (IPDM E/R)

### < SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description	
HEADLAMP (HI) RH [%]	Indicates condition of headlamp high beam RH.	A
HEADLAMP (LO) LH [%]	Indicates condition of headlamp low beam LH.	
HEADLAMP (LO) RH [%]	Indicates condition of headlamp low beam RH.	B
A/C RELAY STUCK [NG/OK]	Indicates condition of A/C relay.	
A/C RELAY [Off/On]	Indicates condition of A/C relay.	
COMP ECV STATUS [NG/OK]	Indicates condition of A/C compressor.	C
VEHICLE SECURITY HORN [Off/On]	Indicates condition of horn relay.	
BATTERY CURRENT SENSOR [NG/OK]	Indicates condition of battery current sensor.	D
FRONT FOG LAMP [Off/On]	Indicates condition of front fog lamps.	
COMP ECV CURRENT [A]	Indicates condition of A/C compressor current.	
BATTERY VOLTAGE [V]	Indicates condition of battery voltage.	E
COOLING FAN DUTY [%]	Indicates condition of cooling fans.	
HOOD SW (CAN) [OPEN/CLOSE]	Indicates condition of hood switch.	F
FRONT WIPER [STOP/LOW/HIGH]	Indicates condition of front wiper motor.	
FR WIPER STOP POSITION [STOP P/ACTIVE P]	Indicates condition of front wiper motor stop.	
HEADLAMP (HI) [Off/On]	Indicates condition of headlamp high beams.	G
HEADLAMP (LO) [Off/On]	Indicates condition of headlamp low beams.	
IGNITION RELAY STATUS [Off/On]	Indicates condition of ignition relay-1.	
IGN RELAY MONITOR [Off/On]	Indicates condition of ignition relay-1 feedback.	H
IGNITION POWER SUPPLY [Off/On]	Indicates condition of ignition relay-1.	
INTERLOCK/PNP SW (CAN) [Off/On]	Indicates condition of transmission range switch P (Park) and N (Neutral) positions.	I
PUSH-BUTTON IGN SW (CAN) [Off/On]	Indicates condition of push-button ignition switch.	
TAIL LAMP [Off/On]	Indicates condition of tail lamps.	J
REVERSE SIGNAL (CAN) [Off/On]	Indicates condition of transmission range switch R (Reverse) position.	
ST&ST CONT RELAY STATUS [Off/ST R On]	Indicates condition of starter cut and starter relays.	K
STARTER MOTOR STATUS [Off/On]	Indicates condition of starter motor.	
STARTER RELAY (CAN) [LOW/HIGH]	Indicates condition of starter relay.	WW
IPDM NOT SLEEP [NO RDY/RDY]	Indicates condition of IPDM E/R sleep status.	
AFTER COOLING TIME [No request/Request]	Indicates condition of cooling fan request.	
AFTER COOLING SPEED [%]	Indicates condition of cooling fans.	M
COOLING FAN TYPE [NISSAN/RENAULT]	Indicates cooling fan type.	
COMPRESSOR REQ1 [Off/On]	Indicates condition of A/C compressor request.	
VHCL SECURITY HORN REQ [Off/On]	Indicates condition of horn relay request.	N
DTRL REQ [Off/On]	Indicates condition of daytime running light request.	
SLEEP/WAKE UP [WAKEUP/SLEEP]	Indicates condition of IPDM E/R sleep/wake.	O
CRANKING ENABLE-TCM [NG/OK]	Indicates condition of crank enable from TCM.	
CRANKING ENABLE-ECM [NG/OK]	Indicates condition of crank enable from ECM.	
CAN DIAGNOSIS [NG/OK]	Indicates condition of CAN diagnosis.	P
FRONT FOG LAMP REQ [Off/On]	Indicates condition of front fog lamp request.	
HIGH BEAM REQ [Off/On]	Indicates condition of headlamp high beam request.	
HORN CHIRP [Off/On]	Indicates condition of horn relay request.	
COOLING FAN REQ [%]	Indicates condition of cooling fan request.	
ENGINE STATUS [STOP/RUN/IDLING]	Indicates condition of engine status.	

## DIAGNOSIS SYSTEM (IPDM E/R)

### < SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
TURN SIGNAL REQ [Off/LH/RH]	Indicates condition of turn signal request.
FR WIPER REQ [RETURN/LOW/HIGH]	Indicates condition of front wiper motor request.
SHIFT POSITION [P/R/N/D/L]	Indicates condition of transmission range switch positions.
LOW BEAM REQ [Off/On]	Indicates condition of headlamp low beam request.
POSITION LIGHT REQ [Off/On]	Indicates condition of parking lamp request.
COMPRESSOR REQ2 [Off/On]	Indicates condition of A/C compressor request.
IGNITION SW [Off/On]	Indicates condition of ignition switch.
VEHICLE SPEED (METER) [mph/km/h]	Indicates vehicle speed.
STARTER OPERATION COUNT	Displays the number of times the starter motor is turned ON.
H/P F/PUMP OPERATN COUNT	Displays the number of times the high pressure fuel pump is turned ON.
BAT DISCHARGE COUNT [—]	Monitor the cumulative discharge value of the battery. <b>NOTE:</b> When 65,000 or more is counted, replace the battery.
P LAMP CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the parking lamp circuit. <b>NOTE:</b> When the number of parking lamp circuit retries count is 20, this item counts 1.
NMB P LAMP CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the parking lamp circuit. <b>NOTE:</b> When the number of short circuits in the parking lamp circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB P LAMP CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the parking lamp circuit.
DTRL LH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the daytime running light (left) circuit. <b>NOTE:</b> When the number of daytime running light (left) circuit retries count is 20, this item counts 1.
NMB DTRL LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the daytime running light (left) circuit. <b>NOTE:</b> When the number of short circuits in the daytime running light (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB DTRL LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the daytime running light (left) circuit.
DTRL RH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the daytime running light (right) circuit. <b>NOTE:</b> When the number of daytime running light (right) circuit retries count is 20, this item counts 1.
NMB DTRL RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the daytime running light (right) circuit. <b>NOTE:</b> When the number of short circuits in the daytime running light (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB DTRL RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the daytime running light (right) circuit.

## DIAGNOSIS SYSTEM (IPDM E/R)

### < SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description	
F FOG LH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the front fog lamp (left) circuit. <b>NOTE:</b> When the number of front fog lamp (left) circuit retries count is 20, this item counts 1.	A
NMB F FOG LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the front fog lamp (left) circuit. <b>NOTE:</b> When the number of short circuits in the front fog lamp (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.	B
NMB F FOG LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the front fog lamp (left) circuit.	C
F FOG RH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the front fog lamp (right) circuit. <b>NOTE:</b> When the number of front fog lamp (right) circuit retries count is 20, this item counts 1.	D
NMB F FOG RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the front fog lamp (right) circuit. <b>NOTE:</b> When the number of short circuits in the front fog lamp (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.	E
NMB F FOG RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the front fog lamp (right) circuit.	F
HL (HI) LH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (HI) (left) circuit. <b>NOTE:</b> When the number of headlamp (HI) (left) circuit retries count is 20, this item counts 1.	G
NMB HL (HI) LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (HI) (left) circuit. <b>NOTE:</b> When the number of short circuits in the headlamp (HI) (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.	H
NMB HL (HI) LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (HI) (left) circuit.	I
HL (HI) RH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (HI) (right) circuit. <b>NOTE:</b> When the number of headlamp (HI) (right) circuit retries count is 20, this item counts 1.	J
NMB HL (HI) RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (HI) (right) circuit. <b>NOTE:</b> When the number of short circuits in the headlamp (HI) (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.	K
NMB HL (HI) RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (HI) (right) circuit.	WW
HL (LO) LH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (LO) (left) circuit. <b>NOTE:</b> When the number of headlamp (LO) (left) circuit retries count is 20, this item counts 1.	M
NMB HL (LO) LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (LO) (left) circuit. <b>NOTE:</b> When the number of short circuits in the headlamp (LO) (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.	N
NMB HL (LO) LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (LO) (left) circuit.	O
HL (LO) RH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (LO) (right) circuit. <b>NOTE:</b> When the number of headlamp (LO) (right) circuit retries count is 20, this item counts 1.	P
NMB HL (LO) RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (LO) (right) circuit. <b>NOTE:</b> When the number of short circuits in the headlamp (LO) (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.	
NMB HL (LO) RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (LO) (right) circuit.	

# DIAGNOSIS SYSTEM (IPDM E/R)

## < SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
NMB HL (LO) LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (LO) (left) circuit. <b>NOTE:</b> When the number of short circuits in the headlamp (LO) (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB HL (LO) LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (LO) (left) circuit.
HL (LO) RH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the headlamp (LO) (right) circuit. <b>NOTE:</b> When the number of headlamp (LO) (right) circuit retries count is 20, this item counts 1.
NMB HL (LO) RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the headlamp (LO) (right) circuit. <b>NOTE:</b> When the number of short circuits in the headlamp (LO) (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB HL (LO) RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the headlamp (LO) (right) circuit.
T LAMP LH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the tail lamp (left) circuit. <b>NOTE:</b> When the number of tail lamp (left) circuit retries count is 20, this item counts 1.
NMB T LAMP LH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the tail lamp (left) circuit. <b>NOTE:</b> When the number of short circuits in the tail lamp (left) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB T LAMP LH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the tail lamp (left) circuit.
T LAMP RH CIRC MALFUNCTN [0 – 1]	Monitor the number of times that the smart FET in IPDM E/R reaches the retry upper limit of the tail lamp (right) circuit. <b>NOTE:</b> When the number of tail lamp (right) circuit retries count is 20, this item counts 1.
NMB T LAMP RH CIRC RETRY [0 – 20]	Monitor the number of times that the smart FET in IPDM E/R permits the retry of the tail lamp (right) circuit. <b>NOTE:</b> When the number of short circuits in the tail lamp (right) circuit count is 5 and the ignition switch OFF to ON operation is detected, this item counts 1.
NMB T LAMP RH CIRC SHORT [0 – 5]	Monitor the number of times that the smart FET in IPDM E/R detects the over current of the tail lamp (right) circuit.
BATTERY STATUS [OK/NG]	Monitor the battery status from the battery output.
BAT DISCHARGE COUNT [0-100]	Indicates condition of battery discharge.
BATTERY STATUS [NG/OK]	Indicates battery status.

## ACTIVE TEST

Test item	Description
HORN	This test is able to check horn operation [Off/On].
FRONT WIPER	This test is able to check wiper motor operation [Off/Low/High].

# DIAGNOSIS SYSTEM (IPDM E/R)

## < SYSTEM DESCRIPTION >

Test item	Description
COMPRESSOR	This test is able to check A/C compressor operation [Off/On].
COOLING FAN (DUAL)	This test is able to check cooling fan operation [Off/LO/HI].
HEADLAMP (HI)	This test is able to check headlamp high beam operation [Off/3/5].
HEADLAMP (LO)	This test is able to check headlamp low beam operation [Off/3/5].
FRONT FOG LAMP	This test is able to check front fog lamp operation [Off/3/5].
DAYTIME RUNNING LAMP	This test is able to check daytime running lamp operation [Off/3/5].
PARKING LAMP	This test is able to check parking lamp operation [Off/3/5].
TAIL LAMP	This test is able to check tail lamp operation [Off/3/5].

### CAN DIAG SUPPORT MNTR

Refer to [LAN-17, "CAN Diagnostic Support Monitor"](#).

### WORK SUPPORT

Work item	Description
CML B/DCHRG CRNT CLEAR	In this mode, cumulative battery discharge current is cleared.

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WW

# BCM

< ECU DIAGNOSIS INFORMATION >

## ECU DIAGNOSIS INFORMATION

### BCM

#### List of ECU Reference

INFOID:0000000012423261

ECU	Reference
BCM (with Intelligent Key system)	<a href="#">BCS-29, "Reference Value"</a>
	<a href="#">BCS-47, "Fail Safe"</a>
	<a href="#">BCS-47, "DTC Inspection Priority Chart"</a>
	<a href="#">BCS-48, "DTC Index"</a>
BCM (without Intelligent Key system)	<a href="#">BCS-97, "Reference Value"</a>
	<a href="#">BCS-108, "Fail Safe"</a>
	<a href="#">BCS-109, "DTC Inspection Priority Chart"</a>
	<a href="#">BCS-109, "DTC Index"</a>

# FRONT WIPER AND WASHER SYSTEM

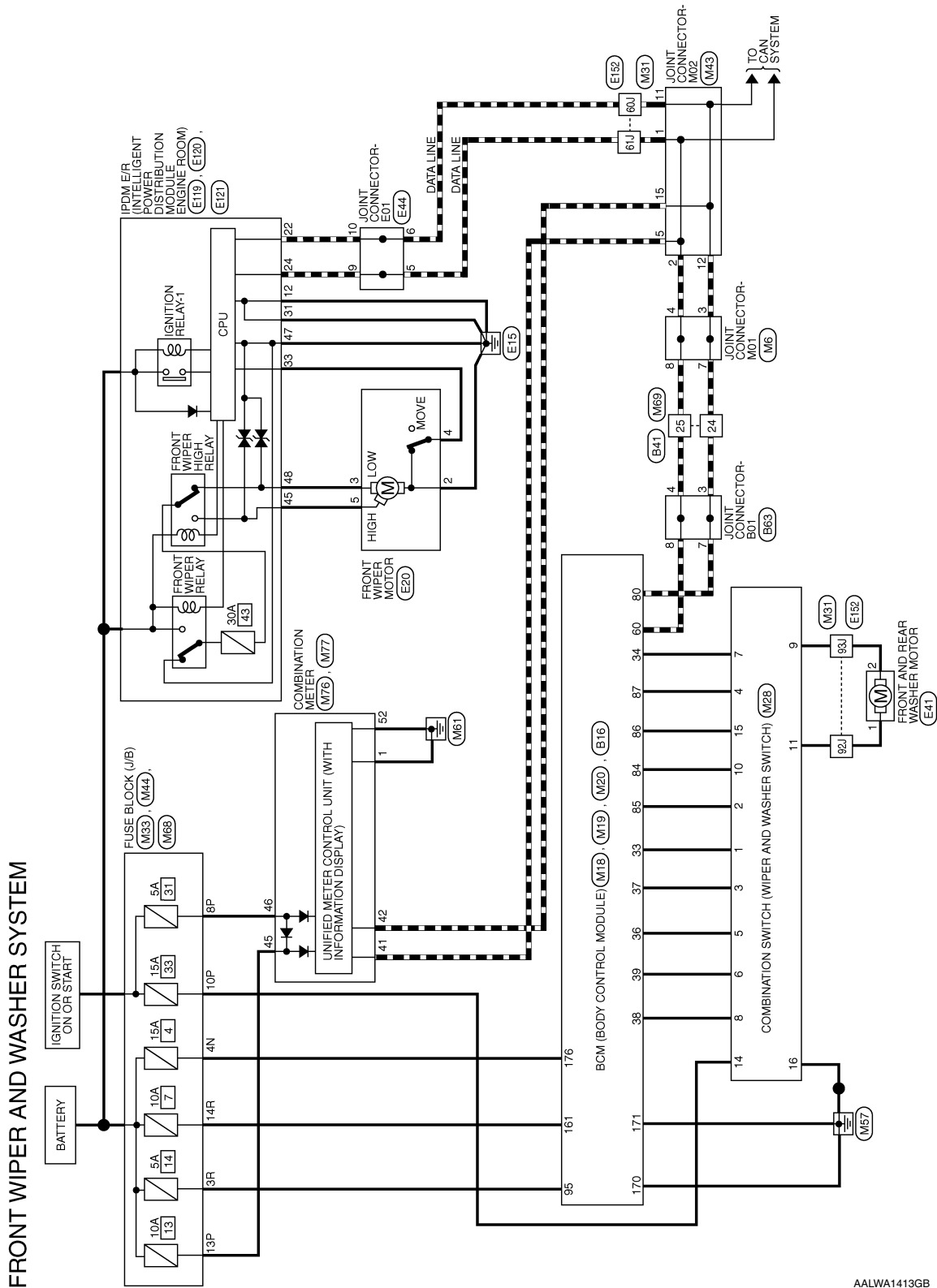
< WIRING DIAGRAM >

## WIRING DIAGRAM

### FRONT WIPER AND WASHER SYSTEM

Wiring Diagram

INFOID:0000000012423262



AALWA1413GB

A  
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D  
E  
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J  
K  
L  
M  
N  
O  
P

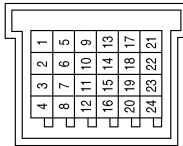
WW

# FRONT WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

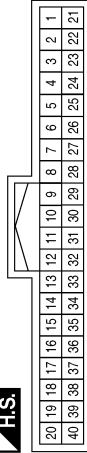
## FRONT WIPER AND WASHER SYSTEM CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



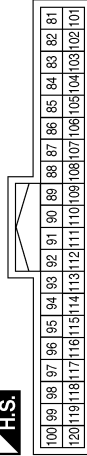
Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
33	LG	I CSW 5
34	Y	0 CSW 5
36	G	I CSW 3
37	GR	I CSW 4
38	V	I CSW 1
39	W	I CSW 2

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



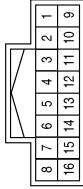
Terminal No.	Color of Wire	Signal Name
84	BR	0 CSW 2
85	SB	0 CSW 1
86	P	0 CSW 3
87	BG	0 CSW 4
95	V	I SHORTING PIN

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU
170	B	I GND1
171	B	I GND2
176	LG	I PWR WIPER

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	SB	-
3	GR	-
4	BG	-

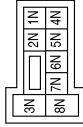
Terminal No.	Color of Wire	Signal Name
5	G	-
6	W	-
7	Y	-
8	V	-
9	G	-
10	BR	-
11	Y	-
14	LG	-
15	P	-
16	GR	-



# FRONT WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

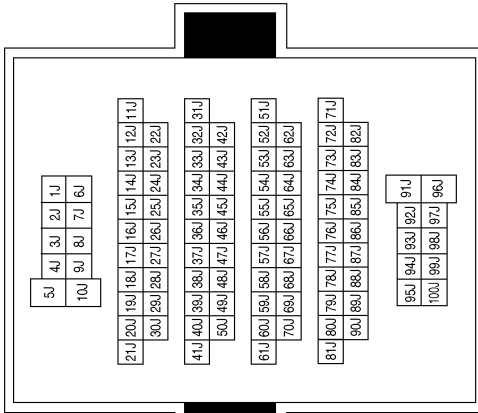
Connector No.	M33
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	4N	Color of Wire	LG	Signal Name	-
--------------	----	---------------	----	-------------	---

Terminal No.	Color of Wire	Signal Name
60J	P	-
61J	L	-
92J	Y	-
93J	G	-

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



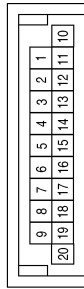
Terminal No.	3R	Color of Wire	V	Signal Name	-
	14R	Color of Wire	W	Signal Name	-

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	8P	Color of Wire	LA/BR	Signal Name	-
	10P	Color of Wire	LG	Signal Name	-
	13P	Color of Wire	LA/G	Signal Name	-

Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



Terminal No.	1	Color of Wire	L	Signal Name	-
	2	Color of Wire	L	Signal Name	-
	5	Color of Wire	L	Signal Name	-
	11	Color of Wire	P	Signal Name	-
	12	Color of Wire	P	Signal Name	-
	15	Color of Wire	P	Signal Name	-

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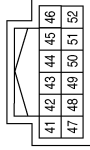
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# FRONT WIPER AND WASHER SYSTEM

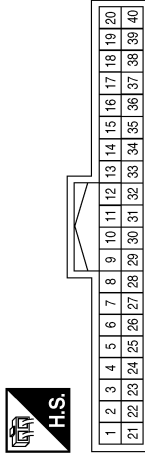
< WIRING DIAGRAM >

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE



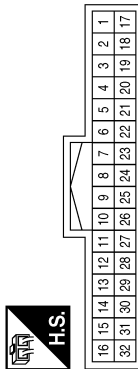
Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
45	LA/G	BAT
46	LA/BR	IGN
52	B	G1

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE



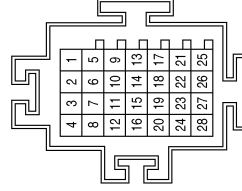
Terminal No.	Color of Wire	Signal Name
1	B	GND

Connector No.	M69
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Color	WHITE



Connector No.	E41
Connector Name	FRONT AND REAR WASHER MOTOR
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
5	L	-
6	P	-
9	L	-
10	P	-

Connector No.	E20
Connector Name	FRONT WIPER MOTOR
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
2	B	-
3	Y	-
4	BR	-
5	V	-

AALIA4239GB

# FRONT WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

Connector No.	E121
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	RED



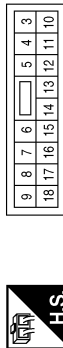
Terminal No.	Color of Wire	Signal Name
45	V	O FR WIPER HI
47	B	POWER GROUND
48	Y	O FR WIPER LO

Connector No.	E120
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
22	P	CAN-L
24	L	CAN-H
31	B	2ND SIGNAL GROUND
33	BR	I AUTO STOP WIPER

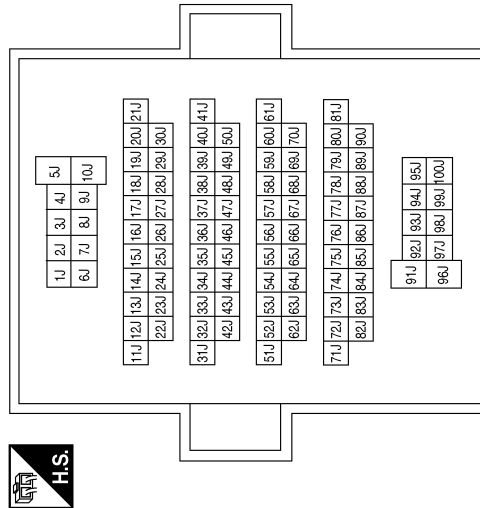
Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
12	B	SIGNAL GROUND

Terminal No.	Color of Wire	Signal Name
60J	P	-
61J	L	-
92J	LG	-
93J	L	-

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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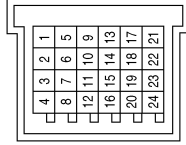
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# FRONT WIPER AND WASHER SYSTEM

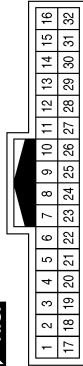
< WIRING DIAGRAM >

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY



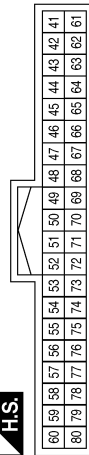
Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
60	L	CAN-H
80	P	CAN-L

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# REAR WIPER AND WASHER SYSTEM

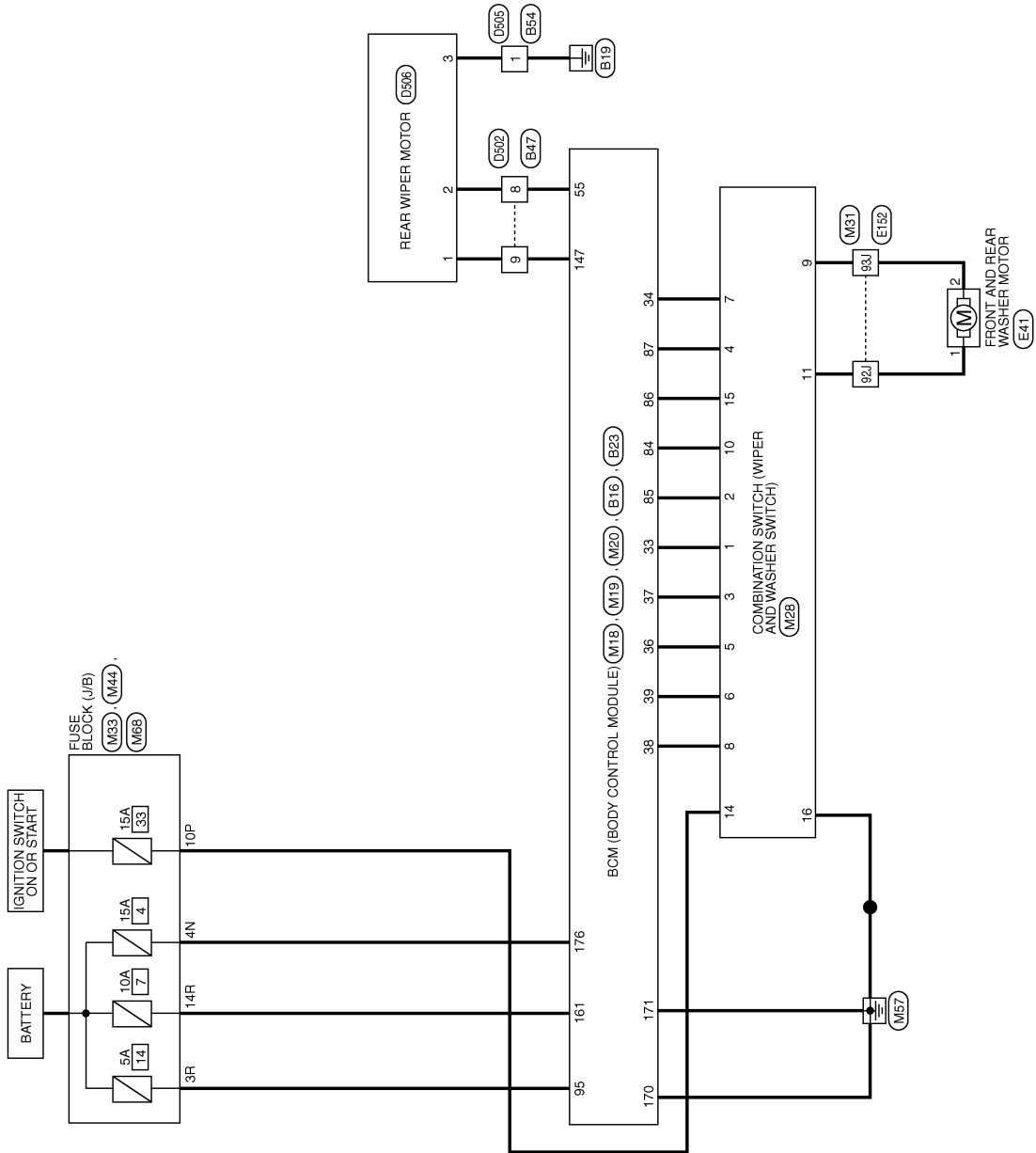
< WIRING DIAGRAM >

## REAR WIPER AND WASHER SYSTEM

Wiring Diagram

INFOID:000000012423263

### REAR WIPER AND WASHER SYSTEM



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# REAR WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

## REAR WIPER AND WASHER SYSTEM CONNECTORS

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
33	LG	I CSW 5
34	Y	0 CSW 5
36	G	I CSW 3
37	GR	I CSW 4
38	V	I CSW 1
39	W	I CSW 2

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
120	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105	104	103	102	101

Terminal No.	Color of Wire	Signal Name
84	BR	0 CSW 2
85	SB	0 CSW 1
86	P	0 CSW 3
87	BG	0 CSW 4
95	V	I SHORTING PIN

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



167	166	165	164	163	162	161		
176	175	174	173	172	171	170	169	168

Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU
170	B	I GND1
171	B	I GND2
176	LG	I PWR WIPER

Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE



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

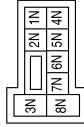
Terminal No.	Color of Wire	Signal Name
1	LG	-
2	SB	-
3	GR	-
4	BG	-

Terminal No.	Color of Wire	Signal Name
5	G	-
6	W	-
7	Y	-
8	V	-
9	G	-
10	BR	-
11	Y	-
14	LG	-
15	P	-
16	GR	-

# REAR WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >

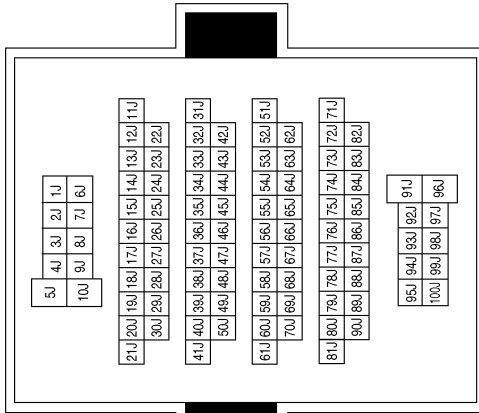
Connector No.	M33
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4N	LG	-

Terminal No.	Color of Wire	Signal Name
92J	Y	-
93J	G	-

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
3R	V	-
14R	W	-

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10P	LG	-

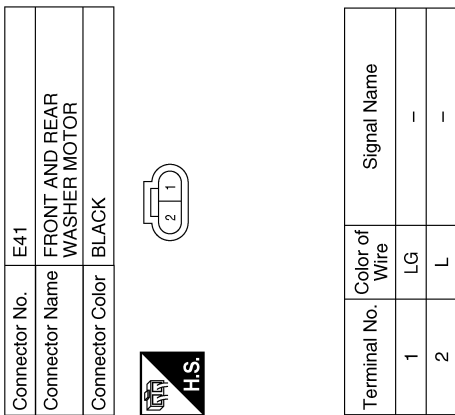
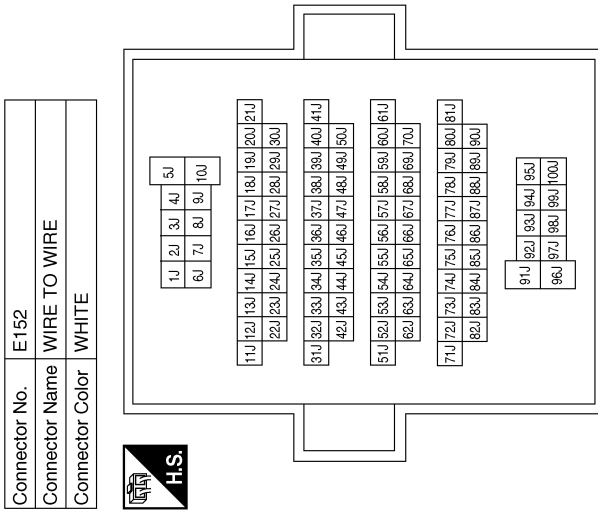
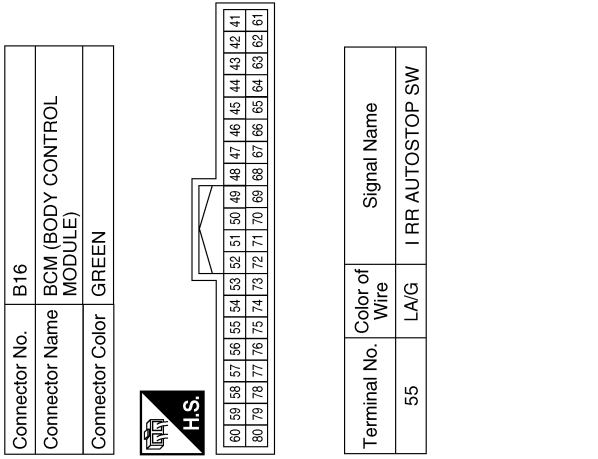
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# REAR WIPER AND WASHER SYSTEM

< WIRING DIAGRAM >



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# REAR WIPER AND WASHER SYSTEM

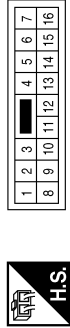
< WIRING DIAGRAM >

Connector No.	B54
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	B	-

Connector No.	B47
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	LA/G	-
9	LA/R	-

Connector No.	B23
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
147	LA/R	0 RR WIPER

Connector No.	D506
Connector Name	REAR WIPER MOTOR
Connector Color	WHITE



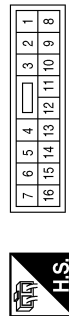
Terminal No.	Color of Wire	Signal Name
1	GR	-
2	G	-
3	B	-

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



Terminal No.	Color of Wire	Signal Name
1	B	-

Connector No.	D502
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	G	-
9	GR	-

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# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

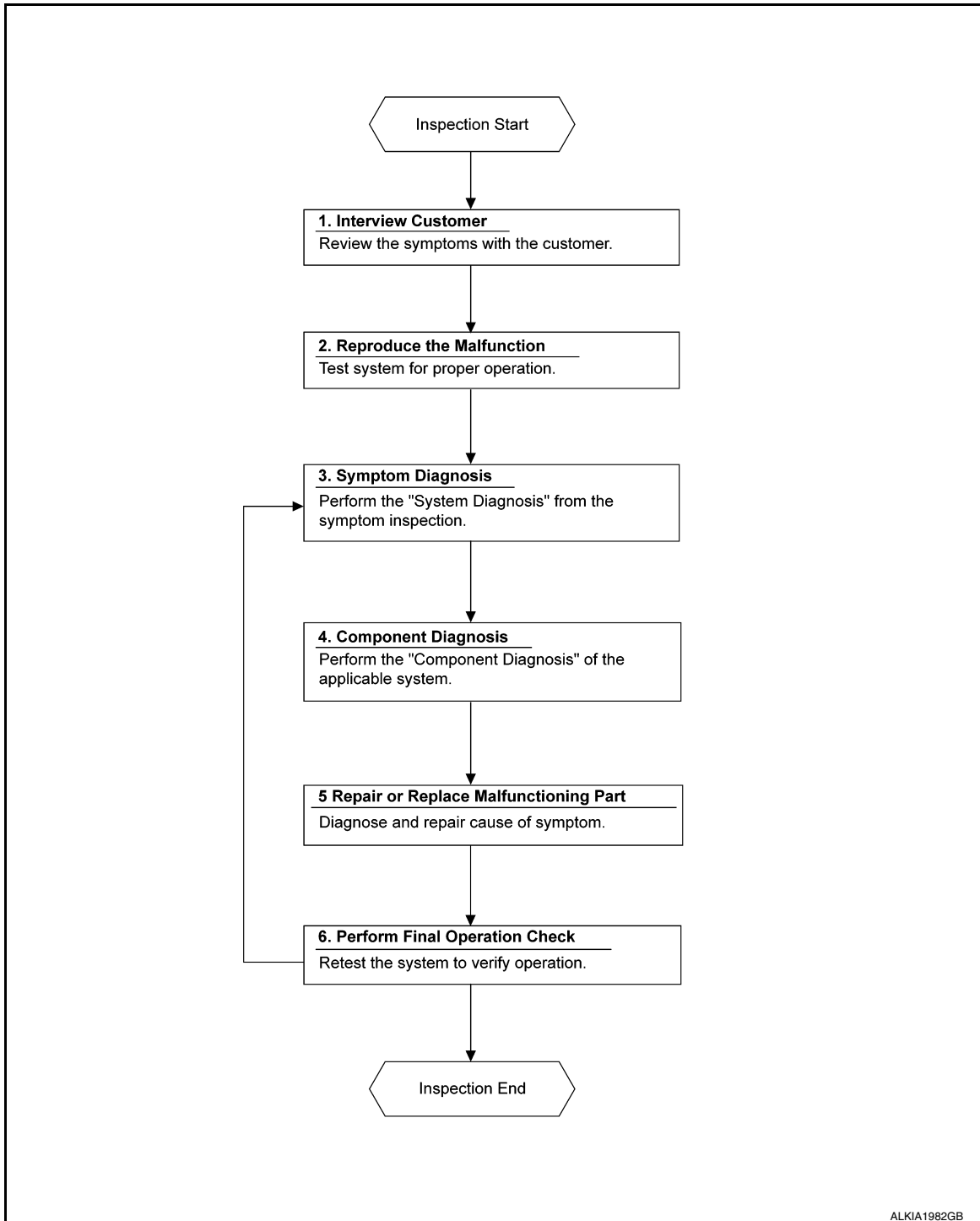
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000012587800

#### OVERALL SEQUENCE



#### DETAILED FLOW

##### 1. INTERVIEW CUSTOMER

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

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

---

>> GO TO 2.

## 2. REPRODUCE THE MALFUNCTION

---

Reproduce 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. 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.

>> GO TO 4.

## 4. COMPONENT DIAGNOSIS

---

Perform the diagnosis with Component diagnosis of the applicable system.

>> GO TO 5.

## 5. REPAIR OR REPLACE THE MALFUNCTIONING PART

---

Repair or replace the specified malfunctioning parts.

>> GO TO 6.

## 6. PERFORM FINAL OPERATIONAL 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.

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# WIPER AND WASHER FUSE

< DTC/CIRCUIT DIAGNOSIS >

## DTC/CIRCUIT DIAGNOSIS

### WIPER AND WASHER FUSE

#### Description

INFOID:0000000012423265

Component	Capacity	Fuse No.	Location
Front wiper motor	30A	43	IPDM E/R
Front and rear washer motor	15A	33	Fuse block (J/B)

#### Diagnosis Procedure

INFOID:0000000012423266

#### 1. CHECK FUSES

Check that the following fuses are not blown:

Component	Capacity	Fuse No.	Location
Front wiper motor	30A	43	IPDM E/R
Front and rear washer motor	15A	33	Fuse block (J/B)

#### Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.
- NO >> Inspection End.

# FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR LO CIRCUIT

### Component Function Check

INFOID:000000012423267

#### 1. CHECK FRONT WIPER LO OPERATION

##### CONSULT ACTIVE TEST

1. Select "FRONT WIPER" in "Active Test" of "IPDM E/R".
2. Check front wiper operation.

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

**OFF** : Front wiper OFF

##### Is the inspection result normal?

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

### Diagnosis Procedure

INFOID:000000012423268

Regarding Wiring Diagram information, refer to [WW-23, "Wiring Diagram"](#).

#### 1. CHECK FRONT WIPER MOTOR FUSE

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

Component	Capacity	Fuse No.	Location
Front wiper motor	30A	43	IPDM E/R

##### Is the fuse blown?

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

#### 2. CHECK FRONT WIPER MOTOR (LO) OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Select "FRONT WIPER" in "Active Test" of "IPDM E/R".
3. While performing the active test, check voltage between IPDM E/R harness connector and ground.

IPDM E/R		Ground	FRONT WIPER	Voltage (Approx.)
Connector	Terminal			
E121	48	LO	Battery voltage	
		OFF	0V	

##### Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace IPDM E/R. Refer to [PCS-44, "Removal and Installation"](#).

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

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R and front wiper motor.
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	
E121	48	E20	3	Yes

##### Is the inspection result normal?

- YES >> Replace front wiper motor. Refer to [WW-72, "Removal and Installation"](#).

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## FRONT WIPER MOTOR LO CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

---

NO >> Repair or replace harness.

# FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR HI CIRCUIT

### Component Function Check

INFOID:000000012423269

#### 1. CHECK FRONT WIPER HI OPERATION

##### CONSULT ACTIVE TEST

1. Select "FRONT WIPER" in "Active Test" of "IPDM E/R".
2. Check front wiper operation.

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

##### Is the inspection result normal?

- YES >> Front wiper motor HI circuit is normal.  
 NO >> Refer to [WW-39, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000012423270

Regarding Wiring Diagram information, refer to [WW-23, "Wiring Diagram"](#).

#### 1. CHECK FRONT WIPER MOTOR FUSE

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

Component	Capacity	Fuse No.	Location
Front wiper motor	30A	43	IPDM E/R

##### Is the fuse blown?

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

#### 2. CHECK FRONT WIPER MOTOR (HI) OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Select "FRONT WIPER" in "Active Test" of "IPDM E/R".
3. While performing the active test, check voltage between IPDM E/R harness connector and ground.

IPDM E/R		Ground	FRONT WIPER	Voltage (Approx.)
Connector	Terminal			
E121	45		HI	Battery voltage
			OFF	0V

##### Is the inspection result normal?

- YES >> GO TO 3.  
 NO >> Replace IPDM E/R. Refer to [PCS-44, "Removal and Installation"](#).

#### 3. CHECK FRONT WIPER MOTOR (HI) OPEN CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect IPDM E/R and front wiper motor.
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	
E121	45	E20	5	Yes

##### Is the inspection result normal?

- YES >> Replace front wiper motor. Refer to [WW-72, "Removal and Installation"](#).

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## FRONT WIPER MOTOR HI CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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NO >> Repair or replace harness.



# FRONT WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER AUTO STOP SIGNAL CIRCUIT

### Component Function Check

INFOID:0000000012423271

#### 1. CHECK FRONT WIPER (AUTO STOP) SIGNAL

1. Select "FR WIPER STOP" in "Data Monitor" of "BCM (WIPER)".
2. Operate the front wiper.
3. Check that FR WIPER STOP changes from ON to OFF according to the wiper position.

Data monitor	Condition		Status
FR WIPER STOP	Front wiper motor	Stop position	ON
		Except stop position	OFF

Is the inspection result normal?

- YES >> Front wiper auto stop signal circuit is normal.  
NO >> Refer to [WW-41, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:0000000012423272

Regarding Wiring Diagram information, refer to [WW-23, "Wiring Diagram"](#).

#### 1. CHECK FRONT WIPER MOTOR (AUTO STOP) OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Check voltage between IPDM E/R harness connector and ground.

IPDM E/R		Ground	FRONT WIPER	Voltage (Approx.)
Connector	Terminal		Except stop position	Battery voltage
E120	33	Ground	Stop position	0 V

Is the inspection result normal?

- YES >> Check for intermittent failure.  
NO >> GO TO 2.

#### 2. CHECK FRONT WIPER MOTOR (AUTO STOP) SHORT CIRCUIT

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

IPDM E/R		Ground	Continuity
Connector	Terminal		No
E120	33	Ground	No

Is the inspection result normal?

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

#### 3. CHECK FRONT WIPER MOTOR (AUTO STOP) CIRCUIT CONTINUITY

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	
E120	33	E20	4	Yes

Is the inspection result normal?

## FRONT WIPER AUTO STOP SIGNAL CIRCUIT

### < DTC/CIRCUIT DIAGNOSIS >

---

- YES >> Replace front wiper motor. Refer to [WW-72. "Removal and Installation"](#).
- NO >> Repair or replace harness.

# FRONT WIPER MOTOR GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## FRONT WIPER MOTOR GROUND CIRCUIT

### Diagnosis Procedure

INFOID:000000012423273

Regarding Wiring Diagram information, refer to [WW-23. "Wiring Diagram"](#).

### 1. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

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

Front wiper motor		Ground	Continuity
Connector	Terminal		Yes
E20	2		

Is the inspection result normal?

- YES >> Front wiper motor ground circuit is normal.  
NO >> Repair or replace harness.

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# WASHER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## WASHER MOTOR CIRCUIT

### Diagnosis Procedure

INFOID:000000012423274

Regarding Wiring Diagram information, refer to [WW-23. "Wiring Diagram"](#).

#### 1. CHECK FRONT AND REAR WASHER MOTOR FUSE

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

Unit	Location	Fuse No.	Capacity
Front and rear washer motor	Fuse block (J/B)	33	15A

##### Is the fuse blown?

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

#### 2. CHECK FRONT AND REAR WASHER MOTOR POWER SUPPLY

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

Front and rear washer motor		Ground	Voltage (Approx.)
Connector	Terminal		Battery voltage
E41	1		

##### Is the inspection result normal?

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

#### 3. CHECK FRONT AND REAR WASHER MOTOR CIRCUIT CONTINUITY

1. Turn the ignition switch OFF.
2. Disconnect combination switch (wiper and washer switch).
3. Check continuity between combination switch (wiper and washer switch) harness connector and front and rear washer motor.

Combination switch (wiper and washer switch)		Front and rear washer motor		Continuity
Connector	Terminal	Connector	Terminal	
M28	11	E41	1	Yes

##### Is the inspection result normal?

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

#### 4. CHECK WIPER AND WASHER SWITCH GROUND CIRCUIT

Check continuity between combination switch (wiper and washer switch) harness connector and ground.

Combination switch (wiper and washer switch)		Ground	Continuity
Connector	Terminal		Yes
M28	16		

##### Is the inspection result normal?

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

#### 5. CHECK WIPER AND WASHER SWITCH

Check wiper and washer switch. Refer to [WW-46. "Component Inspection"](#).

# WASHER MOTOR CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

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### Is the inspection result normal?

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

NO >> Replace wiper and washer switch. Refer to [BCS-77, "Removal and Installation"](#).

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# WASHER SWITCH

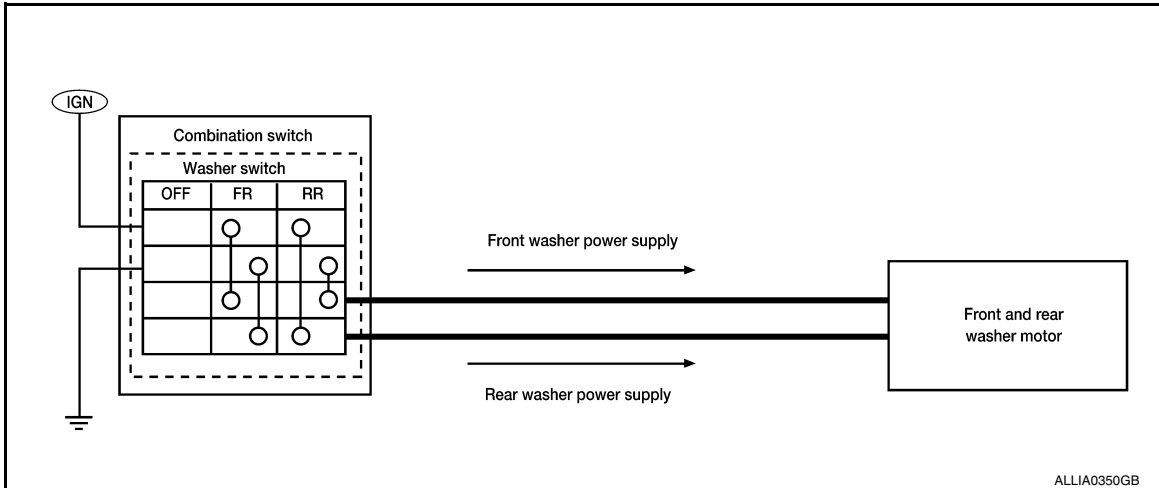
< DTC/CIRCUIT DIAGNOSIS >

## WASHER SWITCH

### Description

INFOID:000000012423275

- Washer switch is integrated with the combination switch.
- Combination switch (wiper and washer switch) switches polarity between front washer operating and rear washer operating to supply power and ground to the front and rear washer motor.



### Component Inspection

INFOID:000000012423276

#### 1. CHECK FRONT WASHER SWITCH

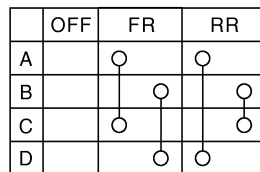
1. Turn the ignition switch OFF.
2. Disconnect combination switch (wiper and washer switch).
3. Check continuity between the combination switch (wiper and washer switch) terminals.

A: Terminal 4

B: Terminal 6

C: Terminal 3

D: Terminal 1



JPLIA0164GB

Combination switch (wiper and washer switch)		Condition	Continuity
Terminal			
1	6	Front washer switch ON	Yes
3	4		

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace combination switch (wiper and washer switch). Refer to [BCS-77, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-138, "Removal and Installation"](#) (without Intelligent Key system).

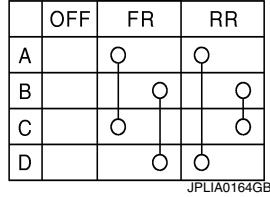
#### 2. CHECK REAR WASHER SWITCH

1. Check continuity between the combination switch (wiper and washer switch) terminals.

# WASHER SWITCH

## < DTC/CIRCUIT DIAGNOSIS >

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



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Combination switch (wiper and washer switch)		Condition	Continuity
Terminal			
1	4	Rear washer switch ON	Yes
6	3		

### Is the inspection result normal?

- YES >> Wiper and washer switch is normal.
- NO >> Replace combination switch (wiper and washer switch). Refer to [BCS-77. "Removal and Installation"](#) (with Intelligent Key system) or [BCS-138. "Removal and Installation"](#) (without Intelligent Key system).

# REAR WIPER MOTOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## REAR WIPER MOTOR CIRCUIT

### Component Function Check

INFOID:000000012423277

#### 1. CHECK REAR WIPER ON OPERATION

##### CONSULT ACTIVE TEST

1. Select "RR WIPER" in "Active Test" of "BCM".
2. While operating the test item, check rear wiper operation.

**ON** : Rear wiper ON operation

**OFF** : Stop the rear wiper.

##### Is rear wiper operation normal?

- YES >> Rear wiper motor circuit is normal.  
NO >> Refer to [WW-48, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000012423278

Regarding Wiring Diagram information, refer to [WW-29, "Wiring Diagram"](#).

#### 1. CHECK REAR WIPER MOTOR OUTPUT VOLTAGE

##### CONSULT ACTIVE TEST

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

BCM		Ground	Test item	Voltage (Approx.)
Connector	Terminal		REAR WIPER	
B16	55	Ground	ON	Battery voltage
			OFF	0V

##### Is the inspection result normal?

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

#### 2. CHECK REAR WIPER MOTOR GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Check continuity between rear wiper motor harness connector and ground.

Rear wiper motor		Ground	Continuity
Connector	Terminal		
D506	3	Ground	Yes

##### Is the inspection result normal?

- YES >> Replace rear wiper motor. Refer to [WW-76, "Removal and Installation"](#).  
NO >> Repair or replace harness.

#### 3. CHECK REAR WIPER MOTOR OPEN CIRCUIT

Check continuity between BCM harness connector and rear wiper motor harness connector.



# REAR WIPER MOTOR CIRCUIT

## < DTC/CIRCUIT DIAGNOSIS >

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
B23	147	D506	1	Yes

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

### 4. CHECK REAR WIPER MOTOR SHORT CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
B16	55		No

Is the inspection result normal?

YES >> Repair or replace harness.

NO >> Replace BCM. Refer to [BCS-76, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-137, "Removal and Installation"](#) (without Intelligent Key system).

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# REAR WIPER AUTO STOP SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

## REAR WIPER AUTO STOP SIGNAL CIRCUIT

### Component Function Check

INFOID:000000012423279

#### 1. CHECK REAR WIPER (AUTO STOP) OPERATION

##### CONSULT DATA MONITOR

1. Select "WIPER" in "Data Monitor" of "BCM".
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 inspection result normal?

- YES >> Rear wiper auto stop signal circuit is normal.  
NO >> Refer to [WW-50, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000012423280

Regarding Wiring Diagram information, refer to [WW-29, "Wiring Diagram"](#).

#### 1. CHECK REAR WIPER MOTOR AUTO STOP CIRCUITS FOR OPEN

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

BCM		Rear wiper motor		Continuity
Connector	Terminal	Connector	Terminal	
B16	55	D506	2	Yes

##### Is inspection result normal?

- YES >> GO TO 2.  
NO >> Repair or replace harness.

#### 2. CHECK AUTO STOP CIRCUITS FOR SHORT TO GROUND

Check continuity between BCM harness connector terminal and ground.

BCM		Ground	Continuity
Connector	Terminal		
B16	55		No

##### Is inspection result normal?

- YES >> Replace BCM. Refer to [BCS-76, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-137, "Removal and Installation"](#) (with Intelligent Key system).  
NO >> Repair or replace harness.

# WIPER AND WASHER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### WIPER AND WASHER SYSTEM SYMPTOMS

#### Symptom Table

INFOID:0000000012423281

**CAUTION:**

Perform the “Self Diagnostic Result” with CONSULT before performing the diagnosis by symptom. Perform the diagnosis by DTC if DTC is detected.

Symptom	Possible malfunction	Reference	
Front wiper does not operate in...	HI only	<ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between combination switch (wiper and washer switch) and BCM</li> <li>BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
		<ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>	Front wiper motor (HI) circuit Refer to <a href="#">WW-39, "Component Function Check"</a> .
		Front wiper request signal (IPDM E/R)	Check “FR WIP REQ” in “Data Monitor” of “IPDM E/R”. Refer to <a href="#">PCS-11, "CONSULT Function (IPDM E/R)"</a> .
	LO and INT	<ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between combination switch (wiper and washer switch) and BCM</li> <li>BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
		<ul style="list-style-type: none"> <li>IPDM E/R</li> <li>Harness between IPDM E/R and front wiper motor</li> <li>Front wiper motor</li> </ul>	Front wiper motor (LO) circuit Refer to <a href="#">WW-37, "Component Function Check"</a> .
		Front wiper request signal (IPDM E/R)	Check “FR WIP REQ” in “Data Monitor” of “IPDM E/R”. Refer to <a href="#">PCS-11, "CONSULT Function (IPDM E/R)"</a> .
	INT only	<ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between combination switch (wiper and washer switch) and BCM</li> <li>BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
		Front wiper request signal (IPDM E/R)	Check “FR WIP REQ” in “Data Monitor” of “IPDM E/R”. Refer to <a href="#">PCS-11, "CONSULT Function (IPDM E/R)"</a> .
	Any mode	—	Refer to <a href="#">WW-54, "Diagnosis Procedure"</a> .

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## WIPER AND WASHER SYSTEM SYMPTOMS

### < SYMPTOM DIAGNOSIS >

Symptom		Possible malfunction	Reference
Front wiper does not stop in...	Any mode	Front wiper auto stop signal (IPDM E/R)	Refer to <a href="#">WW-41, "Component Function Check"</a> .
		<ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
Front wiper operates abnormally because...	Intermittent adjustments cannot be made.	<ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
	Wiper/washer will not operate together.	<ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
	Wipers will not return to stop position (repeatedly operates for 10 seconds and then stops for 20 seconds. Wipers then stop operating).	<ul style="list-style-type: none"> <li>• IPDM E/R</li> <li>• Harness between IPDM E/R and front wiper motor</li> <li>• Front wiper motor</li> </ul>	Front wiper auto stop signal circuit Refer to <a href="#">WW-41, "Component Function Check"</a> .
Rear wiper does not operate.	ON only	<ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
	INT only	<ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
	ON and INT	<ul style="list-style-type: none"> <li>• Combination switch (wiper and washer switch)</li> <li>• Harness between combination switch (wiper and washer switch) and BCM</li> <li>• BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
<ul style="list-style-type: none"> <li>• BCM</li> <li>• Harness between rear wiper motor and BCM</li> <li>• Harness between rear wiper motor and ground</li> <li>• Rear wiper motor</li> </ul>		Rear wiper motor circuit Refer to <a href="#">WW-48, "Diagnosis Procedure"</a> .	

## WIPER AND WASHER SYSTEM SYMPTOMS

### < SYMPTOM DIAGNOSIS >

Symptom		Possible malfunction	Reference
Rear wiper does not stop.	ON only	<ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>BCM</li> </ul>	Rear wiper motor circuit Refer to <a href="#">WW-48, "Diagnosis Procedure"</a> .
	INT only	<ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
Rear wiper does not operate normally.	Wiper is not linked to the washer operation.	<ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between rear wiper motor and BCM</li> <li>BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
		BCM	—
	Rear wiper does not return to the Stop position (Stops after a five-second operation).	<ul style="list-style-type: none"> <li>BCM</li> <li>Harness between rear wiper motor and BCM</li> <li>Rear wiper motor</li> </ul>	Rear wiper auto stop signal circuit Refer to <a href="#">WW-50, "Diagnosis Procedure"</a> .
Front and rear washer motor does not operate when the washing windshield.	Front and rear washer motor does not operate when the washing windshield.	<ul style="list-style-type: none"> <li>Combination switch (wiper and washer switch)</li> <li>Harness between combination switch (wiper and washer switch) and BCM</li> <li>BCM</li> </ul>	Combination switch (wiper and washer switch) Refer to <a href="#">BCS-74, "Symptom Table"</a> (with Intelligent Key system) or <a href="#">BCS-135, "Symptom Table"</a> (without Intelligent Key system).
		<ul style="list-style-type: none"> <li>Harness between rear combination switch (wiper and washer switch) and front and rear washer motor.</li> <li>Front and rear washer motor</li> </ul>	Front and rear washer motor circuit Refer to <a href="#">WW-44, "Diagnosis Procedure"</a> .

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# FRONT WIPER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

## FRONT WIPER DOES NOT OPERATE

### Description

INFOID:000000012423282

The front wiper does not operate under any operation conditions.

### Diagnosis Procedure

INFOID:000000012423283

Regarding Wiring Diagram information, refer to [WW-23, "Wiring Diagram"](#).

## 1. CHECK WIPER RELAY OPERATION

### CONSULT ACTIVE TEST

1. Select "FR WIPER" in "Active Test" of "BCM (WIPER)".
2. Check front wiper operation.

**LO** : Front wiper LO operation  
**HI** : Front wiper HI operation  
**OFF** : Front wiper stop

### Is the inspection result normal?

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

## 2. CHECK FRONT WIPER MOTOR FUSE

Refer to [WW-36, "Diagnosis Procedure"](#).

### Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit.  
NO >> GO TO 3.

## 3. CHECK FRONT WIPER MOTOR GROUND CIRCUIT

Refer to [WW-43, "Diagnosis Procedure"](#).

### Is the inspection result normal?

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

## 4. CHECK FRONT WIPER MOTOR OUTPUT VOLTAGE

1. Turn the ignition switch ON.
2. Select "FRONT WIPER" in "Active Test" of "IPDM E/R" with CONSULT.
3. Check voltage between IPDM E/R harness connector and ground while wipers are operating.

IPDM E/R		Ground	FRONT WIPER	Voltage (Approx.)
Connector	Terminal			
E121	48		LO	Battery voltage
	45		OFF	0 V
			HI	Battery voltage
			OFF	0 V

### Is the inspection result normal?

YES >> Replace front wiper motor. Refer to [WW-72, "Removal and Installation"](#).  
NO >> Replace IPDM E/R. Refer to [PCS-44, "Removal and Installation"](#).

## 5. CHECK FRONT WIPER REQUEST SIGNAL INPUT

1. Select "FR WIP REQ" in "Data Monitor" of "IPDM E/R" with CONSULT.
2. Switch the front wiper switch to HI and LO.
3. Check the status of FR WIP REQ while operating the switch.

# FRONT WIPER DOES NOT OPERATE

## < SYMPTOM DIAGNOSIS >

Data monitor	Condition	Status
FR WIP REQ	Front wiper switch OFF	STOP
	Front wiper switch LO	LOW
	Front wiper switch HI	HI

Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to [PCS-44, "Removal and Installation"](#).
- NO >> GO TO 6.

### 6. CHECK COMBINATION SWITCH (WIPER AND WASHER SWITCH)

Check combination switch (wiper and washer switch). Refer to [WW-46, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Replace BCM. Refer to [BCS-76, "Removal and Installation"](#) (with Intelligent Key system) or [BCS-137, "Removal and Installation"](#) (without Intelligent Key system).
- NO >> Repair or replace the applicable parts.

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# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

## NORMAL OPERATING CONDITION

### Description

INFOID:000000012423284

#### 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.

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 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.



# WASHER TANK

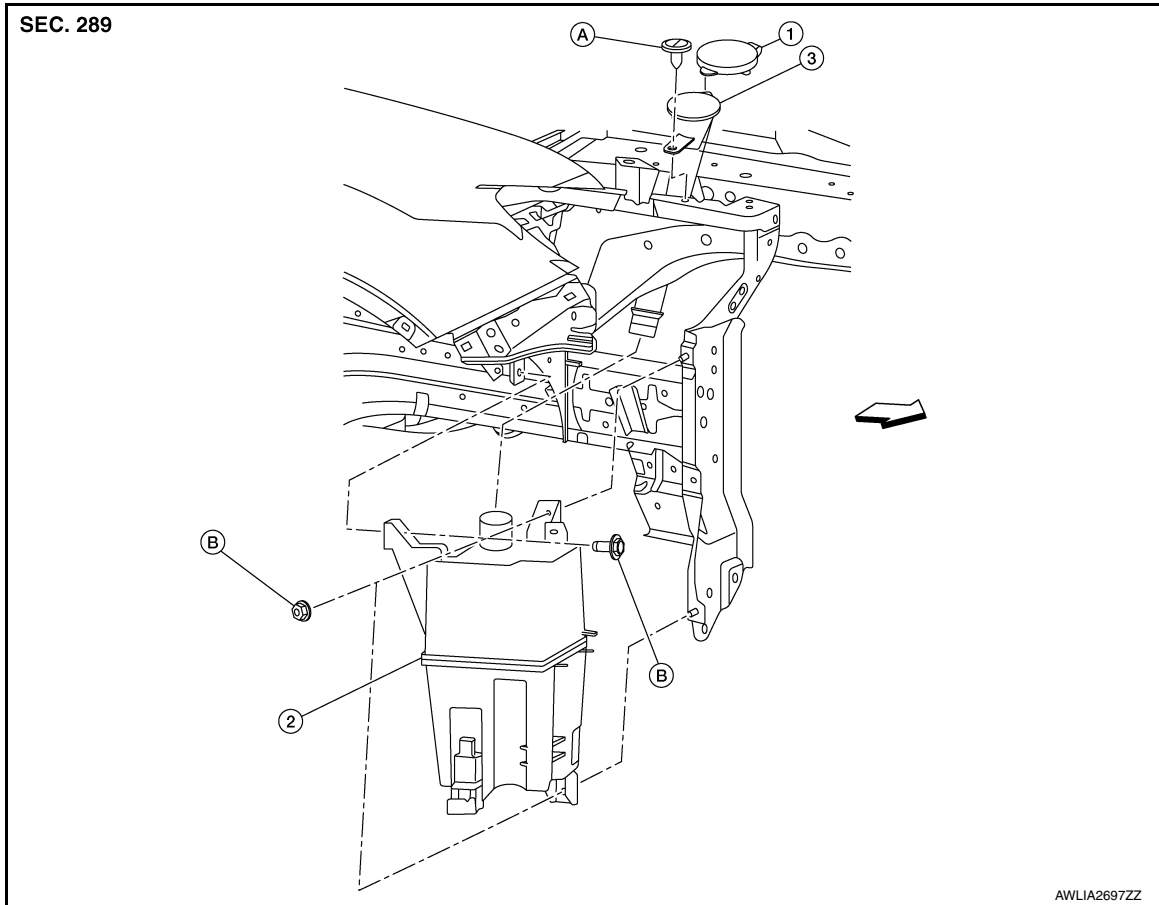
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### WASHER TANK

Exploded View

INFOID:000000012423285



1. Cap  
A. Clip

2. Washer tank  
B. Refer to INSTALLATION

3. Washer tank inlet  
⇐ Front

## Removal and Installation

INFOID:000000012423286

### REMOVAL

1. Drain washer fluid.
2. Using a suitable tool release washer tank inlet clip and remove washer tank inlet.
3. Remove front over fender (RH). Refer to [EXT-31, "FRONT OVER FENDER : Removal and Installation"](#).
4. Remove wind deflector (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
5. Remove engine side cover (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
6. Partially remove front fender protector (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
7. Disconnect washer level switch harness connector (if equipped).
8. Disconnect front and rear washer motor tubes.
9. Remove washer tank nuts and bolt and remove the washer tank.

### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Add water up to the top of washer tank inlet after installing. Check that no leaks exist.
- Fill washer tank with specified amount of fluid. Refer to [WW-81, "Specifications"](#).

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# WASHER TANK

## < REMOVAL AND INSTALLATION >

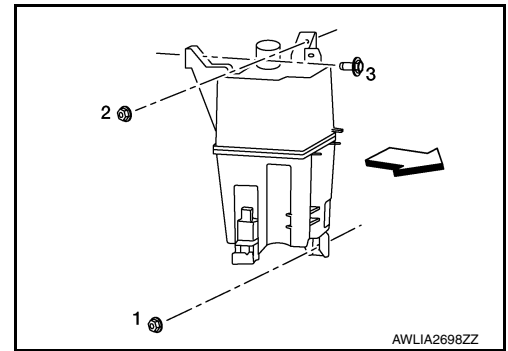
- Tighten the washer tank nuts and bolt to specification in the sequence shown.

⇐: Front

**Nuts and bolt : 4.5 N·m (0.46 kg-m, 40 in-lb)**

**USA Production : No. 1, 2, 3**

**Korea Production : No. 2, 1, 3**



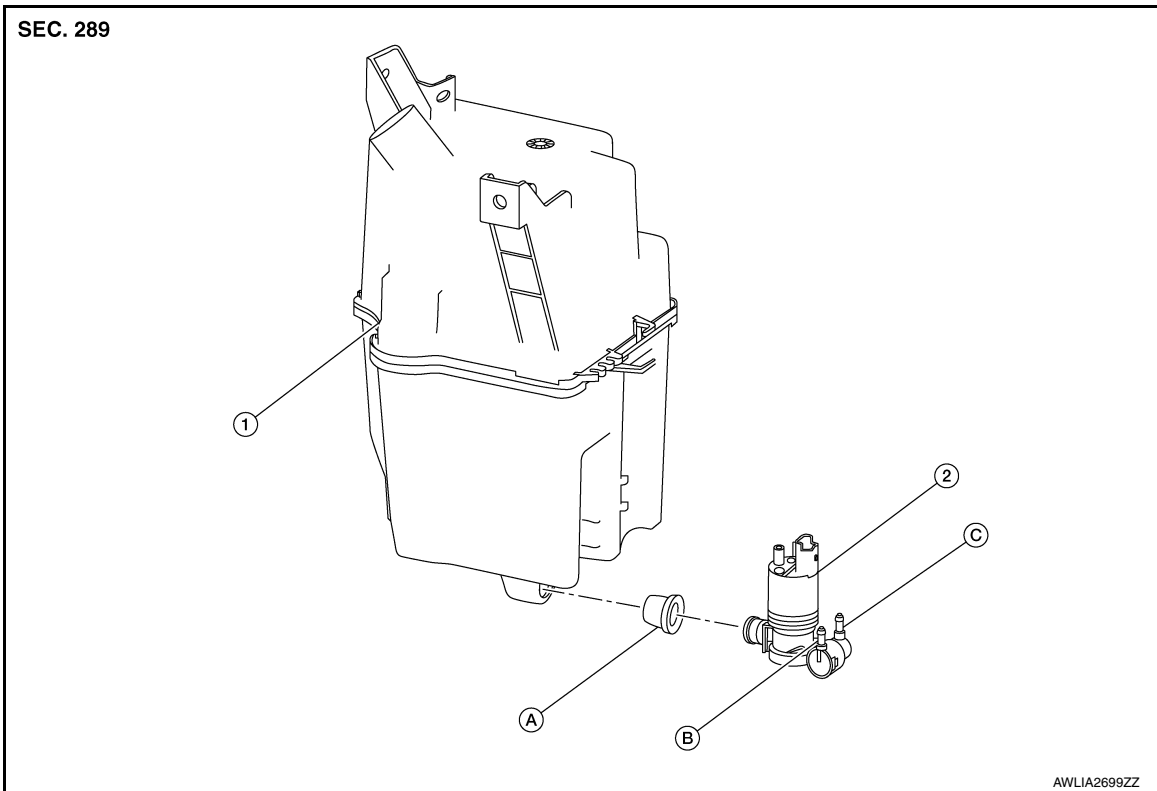
# FRONT AND REAR WASHER MOTOR

< REMOVAL AND INSTALLATION >

## FRONT AND REAR WASHER MOTOR

Exploded View

INFOID:000000012423287



- |                       |                                |         |
|-----------------------|--------------------------------|---------|
| 1. Washer tank        | 2. Front and rear washer motor | A. Seal |
| B. Rear washer outlet | C. Front washer outlet         |         |

## Removal and Installation

INFOID:000000012423288

### REMOVAL

1. Drain washer fluid.
2. Remove front over fender (RH). Refer to [EXT-31, "FRONT OVER FENDER : Removal and Installation"](#).
3. Remove wind deflector (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
4. Remove engine side cover (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
5. Partially remove front fender protector (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
6. Disconnect harness connector from front and rear washer motor.
7. Disconnect front and rear washer outlet tubes.
8. Remove front and rear washer motor from washer tank.

### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Add water up to the top of washer tank inlet after installing. Check that no leaks exist.
- Fill washer tank with specified amount of fluid. Refer to [WW-81, "Specifications"](#).

## WASHER FLUID LEVEL SWITCH

< REMOVAL AND INSTALLATION >

---

### WASHER FLUID LEVEL SWITCH

#### Removal and Installation

INFOID:000000012423289

The washer fluid level switch is serviced as a part of the washer tank. Refer to [WW-57, "Removal and Installation"](#).

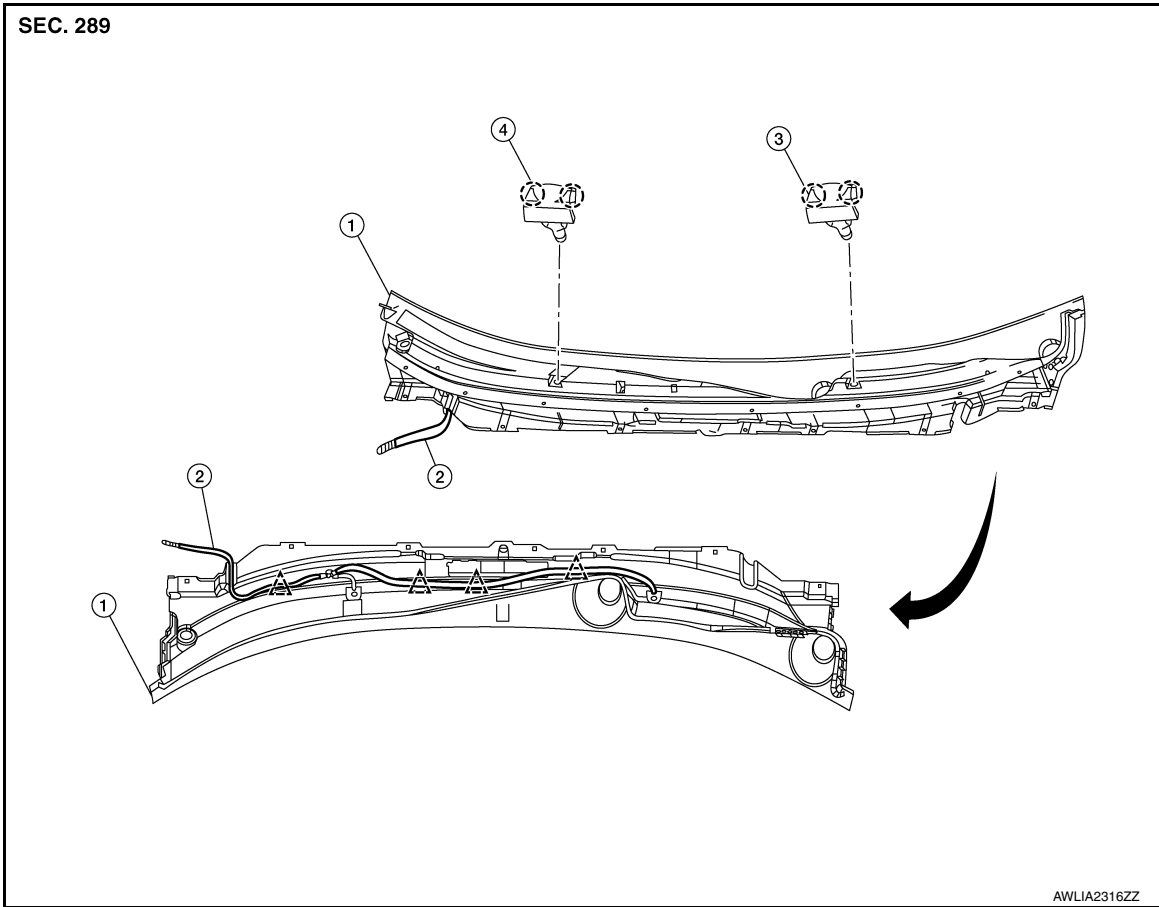
# FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## FRONT WASHER NOZZLE AND TUBE

Exploded View

INFOID:000000012423290

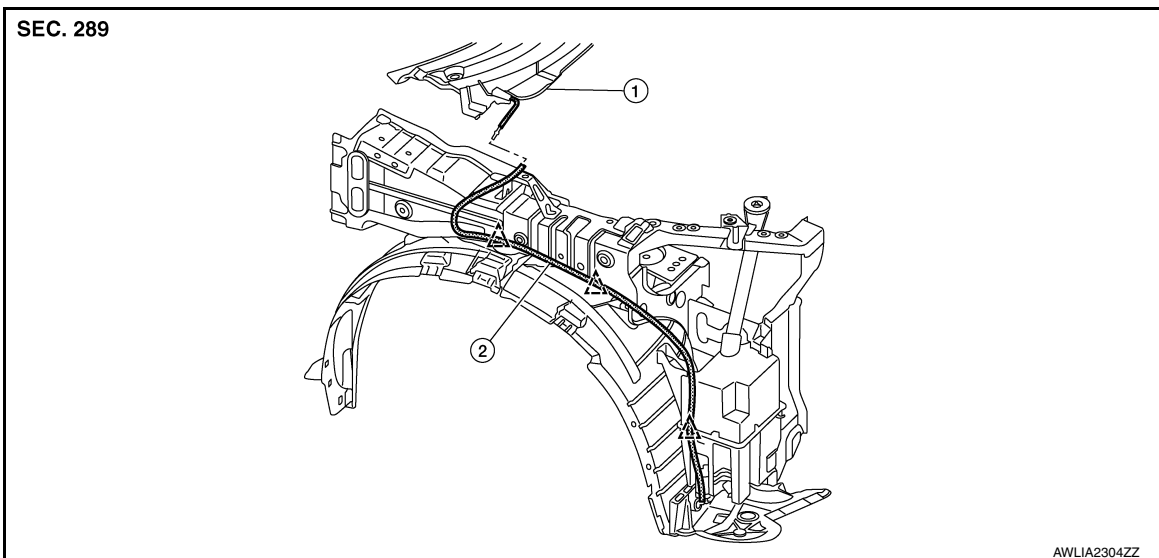


- 1. Cowl top cover
  - 2. Front washer tube
  - 3. Front washer nozzle (LH)
  - 4. Front washer nozzle (RH)
- Pawl  
 Clip

Exploded View

INFOID:000000012423291

WW




M  
N  
O  
P

# FRONT WASHER NOZZLE AND TUBE

## < REMOVAL AND INSTALLATION >

1. Cowl top cover

2. Front washer tube


 Clip

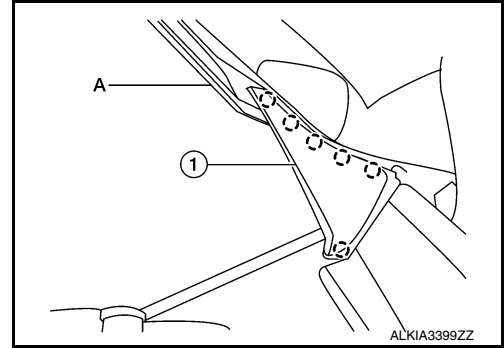
### Removal and Installation - Front Washer Nozzle

INFOID:0000000012423292

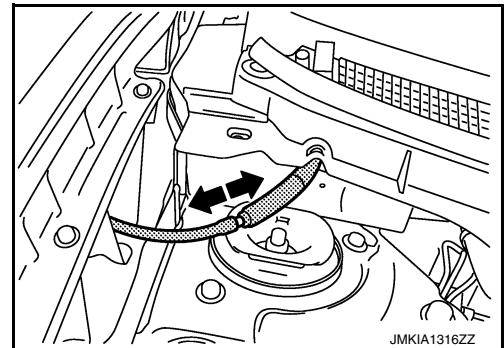
#### REMOVAL

1. Remove front wiper arms (LH/RH). Refer to [WW-65, "Removal and Installation"](#).
2. Release pawls using suitable tool (A) and remove cowl top side trim cover (1) (LH/RH).

: Pawl



3. Disconnect front washer tube connector.



4. Release pawls and remove front washer nozzle (LH/RH).

#### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

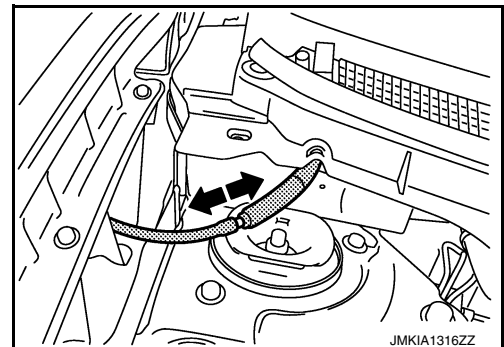
**Adjust the nozzle spray pattern. Refer to [WW-63, "Inspection and Adjustment"](#).**

### Removal and Installation - Front Washer Tube

INFOID:0000000012423293

#### REMOVAL

1. Disconnect front washer tube connector.



2. Remove front over fender (RH). Refer to [EXT-31, "FRONT OVER FENDER : Removal and Installation"](#).
3. Remove wind deflector (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
4. Remove engine side cover (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
5. Partially remove front fender protector (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
6. Unclip front washer hose and remove.

# FRONT WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## INSTALLATION

Installation is in the reverse order of removal.

## Inspection and Adjustment

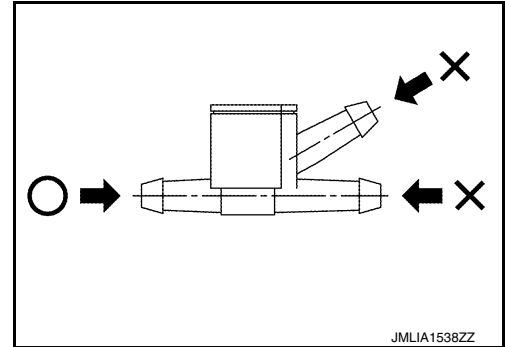
INFOID:000000012423294

## WASHER TUBE INSPECTION

Check that air can pass through the check valve splitter by blowing into the check valve splitter and that air cannot flow in the opposite direction.

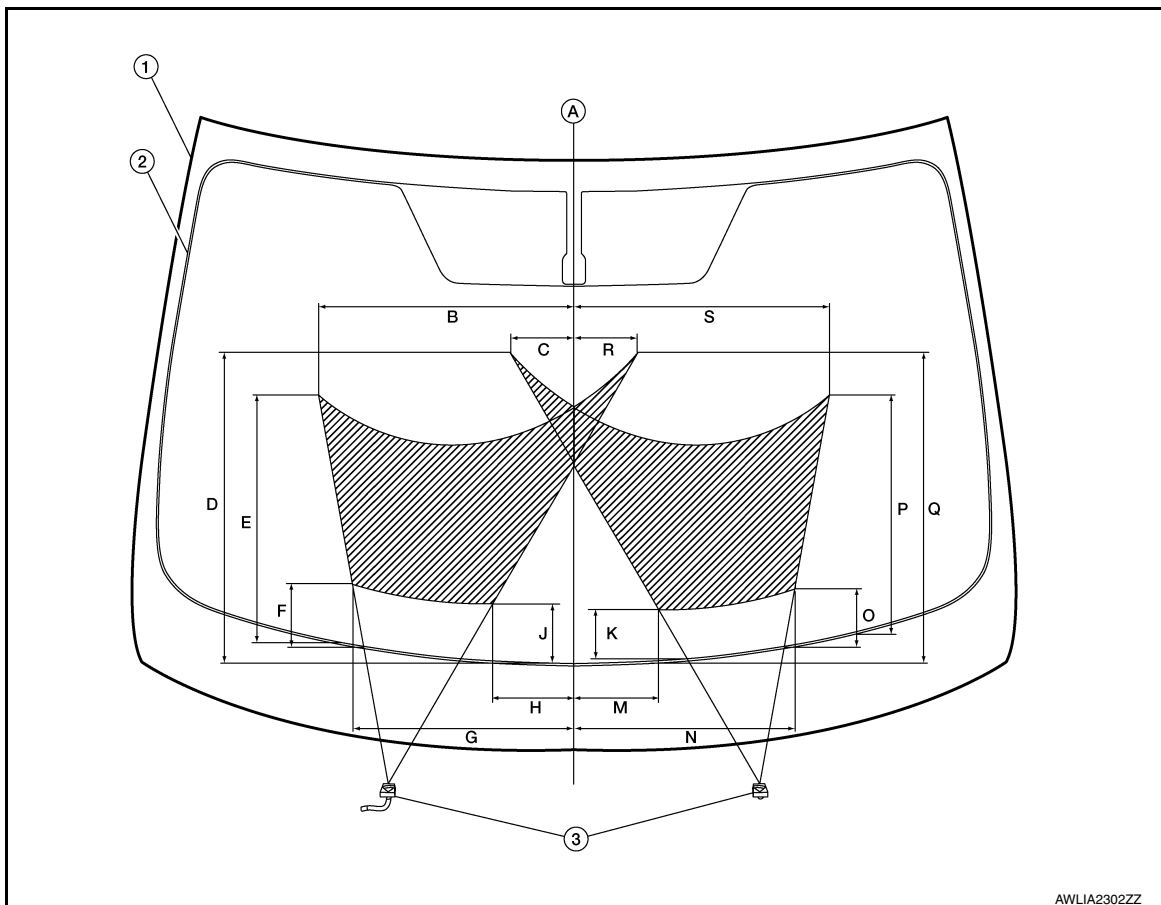
O: Air can flow

X: Air cannot flow



## ADJUSTMENT

If operating properly, spray positions should match the positions shown. If spray positions do not match, confirm the rear washer nozzle is properly seated and working properly. If the spray positions still do not match as shown, then replace the front washer nozzle. Refer to [WW-62. "Removal and Installation - Front Washer Nozzle"](#)



- 1. Windshield glass
- A. Center line
- D. 497 mm (19.57 in)

- 2. Black printed area line
- B. 409 mm (16.10 in)
- E. 398 mm (15.67 in)

- 3. Front washer nozzle (LH/RH)
- C. 103 mm (4.06 in)
- F. 100 mm (3.94 in)

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

WW

## FRONT WASHER NOZZLE AND TUBE

### < REMOVAL AND INSTALLATION >

---

G. 356 mm (14.02 in)

K. 80 mm (3.15 in)

O. 90 mm (3.54 in)

R. 103 mm (4.06 in)

H. 127 mm (5.00 in)

M. 133 mm (5.24 in)

P. 380 mm (14.96 in)

S. 409 mm (16.10 in)

J. 93 mm (3.66 in)

N. 354 mm (13.94 in)

Q. 496 mm (19.53 in)



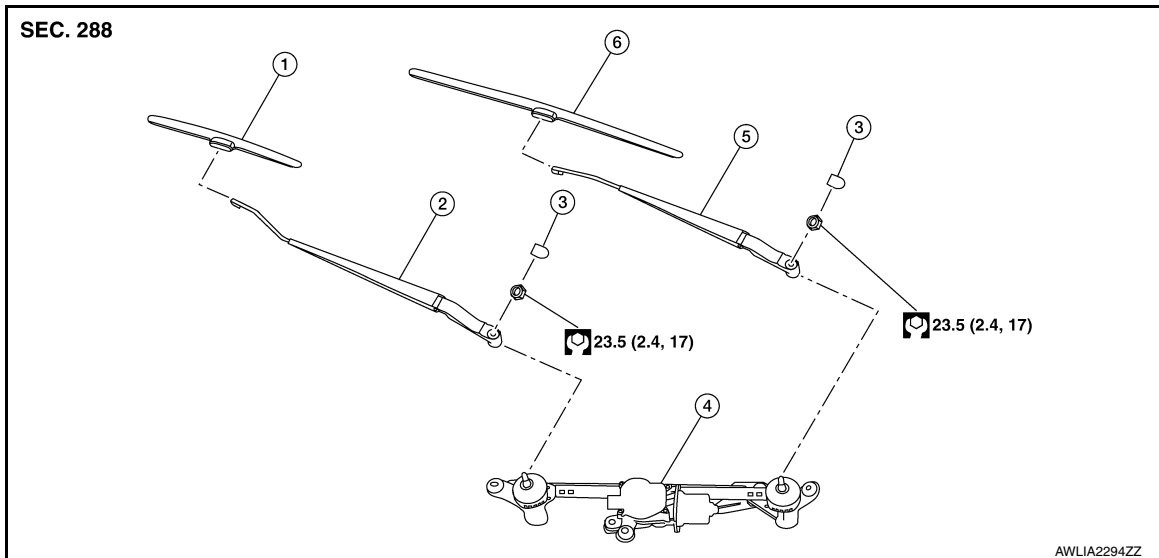
# FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

## FRONT WIPER ARM

### Exploded View

INFOID:000000012423295



- |                               |                         |                           |
|-------------------------------|-------------------------|---------------------------|
| 1. Front wiper blade (RH)     | 2. Front wiper arm (RH) | 3. Front wiper arm cover  |
| 4. Front wiper drive assembly | 5. Front wiper arm (LH) | 6. Front wiper blade (LH) |

### Removal and Installation

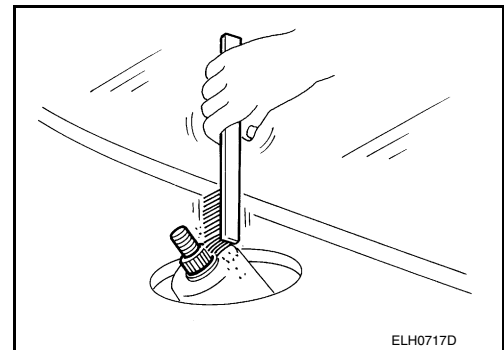
INFOID:000000012423296

#### REMOVAL

1. Move front wiper into the service position by turning the ignition switch ON, then quickly push the wiper washer switch to the mist position two times within 0.5 seconds.
2. Turn the ignition switch OFF.
3. Remove front wiper arm covers.
4. Remove nuts and remove front wiper arms.

#### INSTALLATION

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



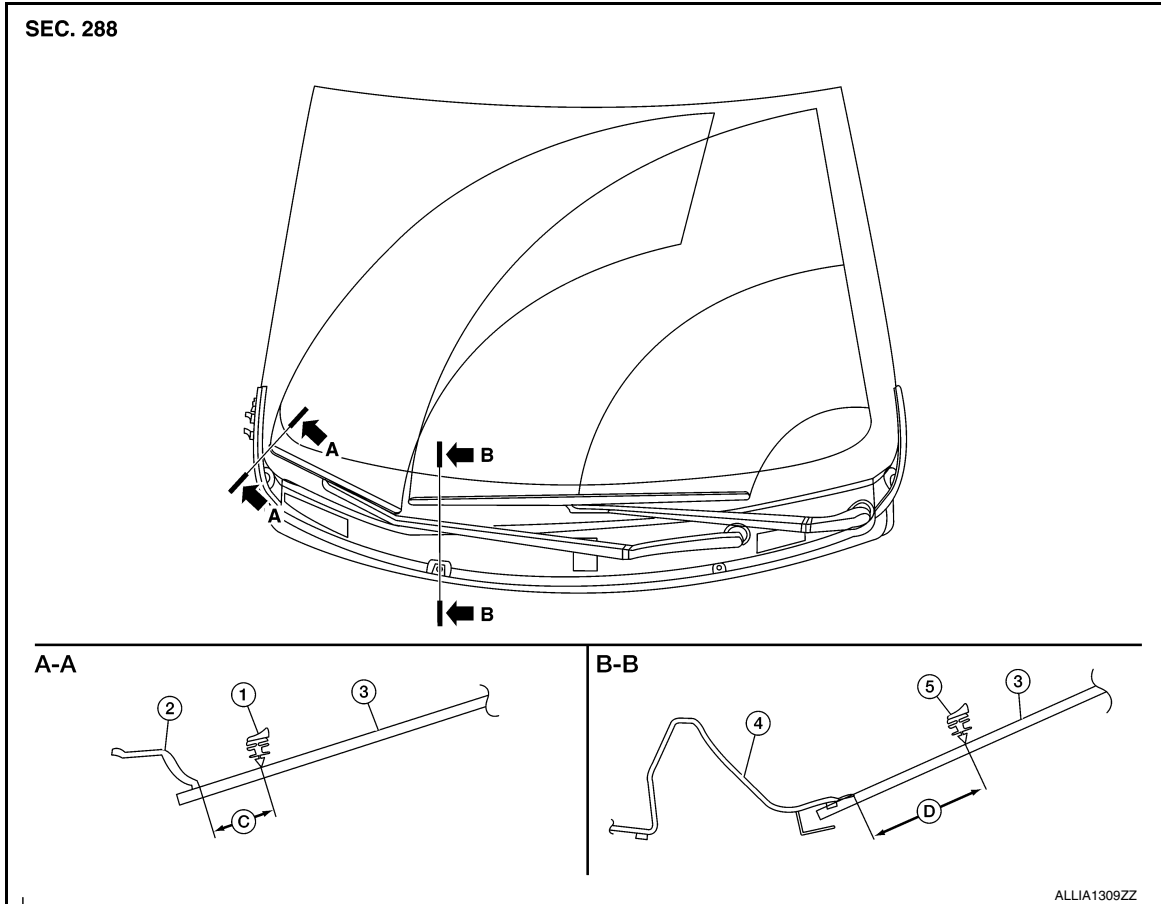
2. Move front wiper into the service position by turning the ignition switch ON, then quickly push the wiper washer switch to the mist position two times within 0.5 seconds.
3. Turn the ignition switch OFF.
4. Adjust front wiper blade position. Refer to [WW-66. "Adjustment"](#).
5. Install front wiper arm by tightening the nuts.
6. Install front wiper arm covers.
7. Check that the front wiper blades stop at the specified position.

# FRONT WIPER ARM

< REMOVAL AND INSTALLATION >

## Adjustment

INFOID:000000012423297



- |  |                      |   |
|--|----------------------|---|
| 1. Wiper blade (RH)                        | 2. Front fender (RH) | 3. Windshield glass                       |
| 4. Cowl top cover                          | 5. Wiper blade (LH)  | C. $38.2 \pm 7.5$ mm (1.50 $\pm$ 0.30 in) |
| D. $34.88 \pm 7.5$ mm (1.37 $\pm$ 0.30 in) |                      |   |

# FRONT WIPER BLADE

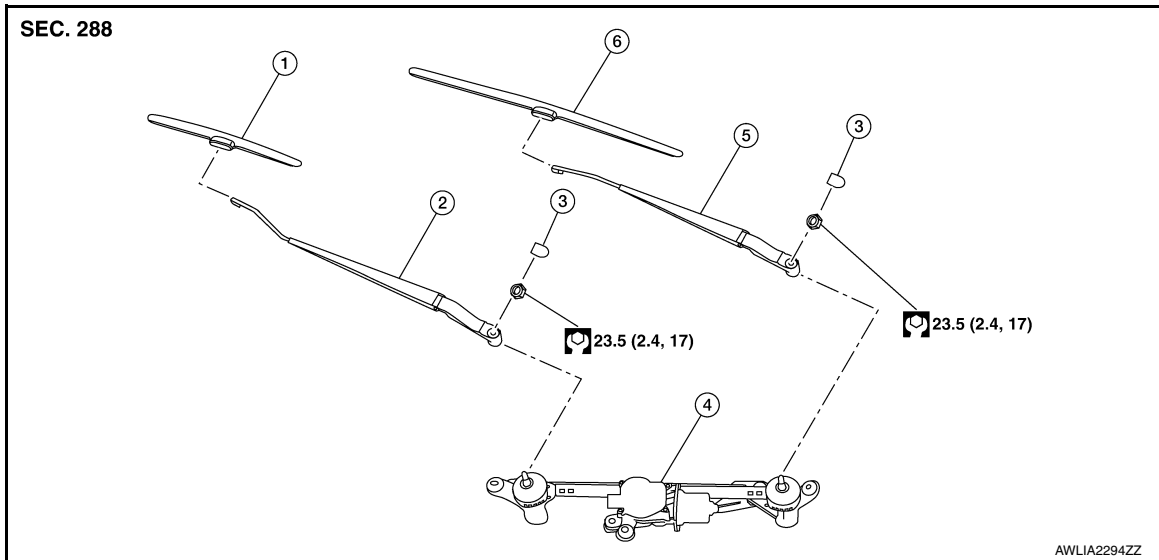
< REMOVAL AND INSTALLATION >

## FRONT WIPER BLADE

### WIPER BLADE

#### WIPER BLADE : Exploded View

INFOID:0000000012423298



- |                               |                   |                     |
|-------------------------------|-------------------|---------------------|
| 1. Wiper blade (RH)           | 2. Wiper arm (RH) | 3. Wiper arm cover  |
| 4. Front wiper drive assembly | 5. Wiper arm (LH) | 6. Wiper blade (LH) |

#### WIPER BLADE : Removal and Installation

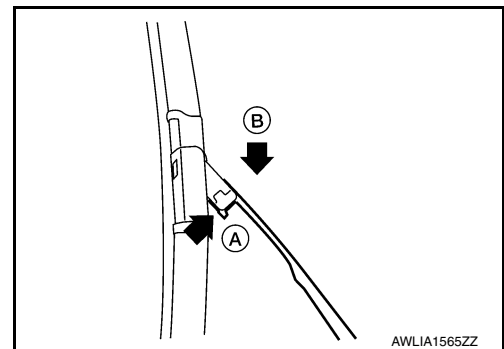
INFOID:0000000012423299

##### REMOVAL

1. Move front wiper into the service position by turning the ignition switch ON, then quickly push the wiper washer switch to the mist position two times within 0.5 seconds.
2. Turn the ignition switch OFF.
3. Lift the wiper arm and wiper blade away from the windshield glass.
4. Rotate the wiper blade and push the release tab (A), then move the wiper blade down (B) the wiper arm.

**CAUTION:**

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



5. Remove the wiper blade.

##### INSTALLATION

Installation is in the reverse order of removal.

**NOTE:**

Insert the front wiper blade onto the front wiper arm until it clicks into place.

#### WIPER BLADE REFILL

# FRONT WIPER BLADE

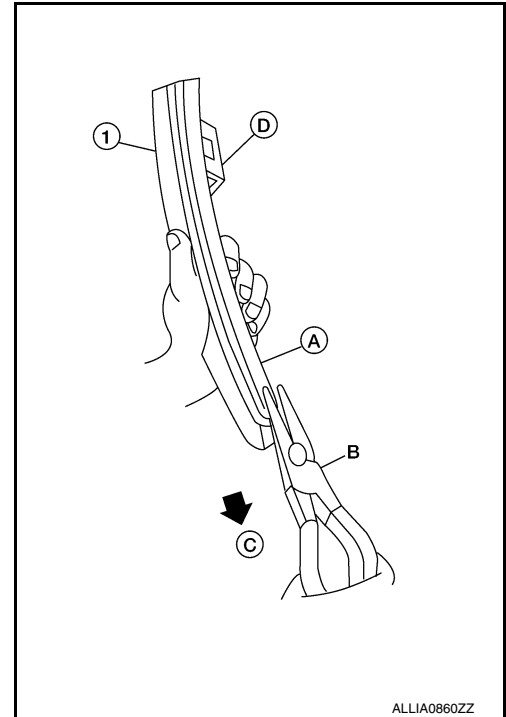
< REMOVAL AND INSTALLATION >

## WIPER BLADE REFILL : Removal and Installation

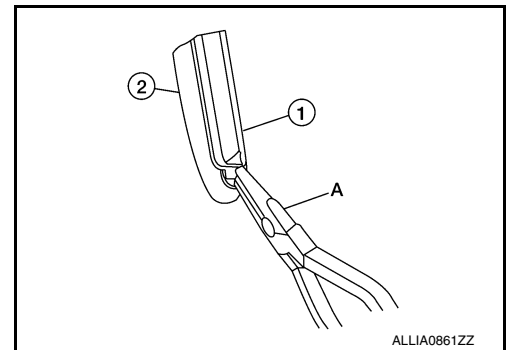
INFOID:000000012423300

### REMOVAL

1. Remove the wiper blade. Refer to [WW-67, "WIPER BLADE : Removal and Installation"](#).
2. Hold the wiper blade refill lip at the end (A) of the wiper blade (1) with a suitable tool (B) as shown, and pull it firmly in the direction (C).  
(D): U clip (part of wiper blade)

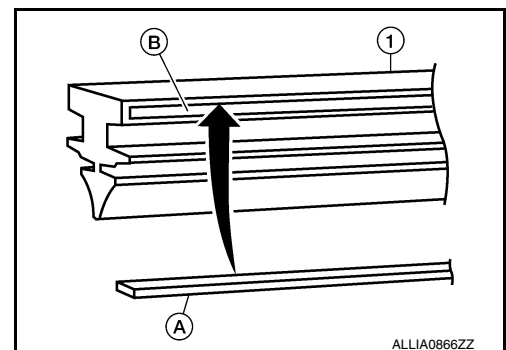


- If the wiper blade refill lip is torn due to wear, insert a suitable tool (A) into the space between the end of the wiper blade refill (1) and the wiper blade (2) and pull the wiper blade refill (1) out as shown.



### INSTALLATION

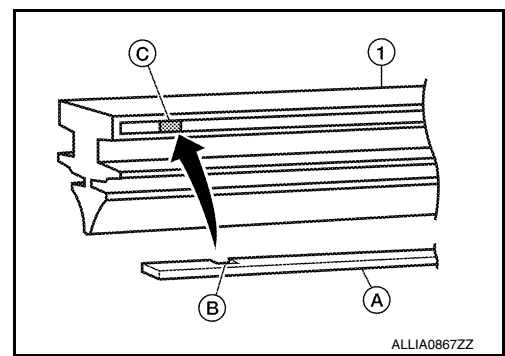
1. If the rib (A) has become detached from the wiper blade refill (1), check that the curve of the rib (A) is in the same direction as the curve of the wiper blade refill (1) and insert the rib (A) into the slit (B) in the wiper blade refill (1) as shown.



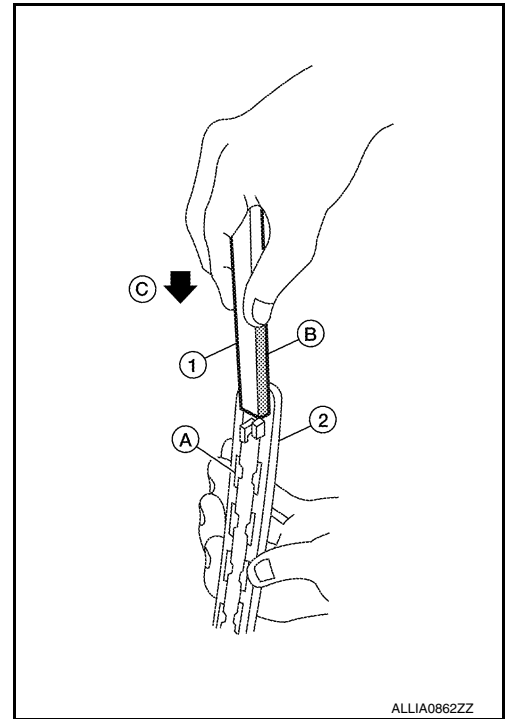
# FRONT WIPER BLADE

## < REMOVAL AND INSTALLATION >

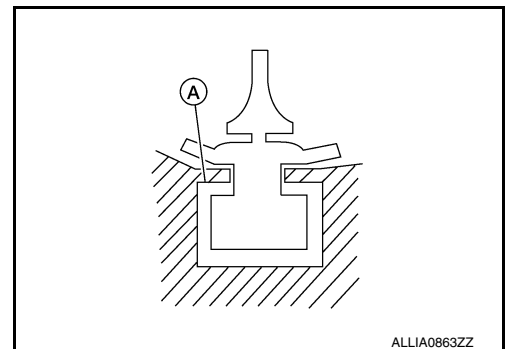
- If the rib (A) has a notch (B), insert the rib (A) into the wiper blade refill (1) so the notch (B) fits over the protrusion (C) in the wiper blade refill (1) as shown.



2. Insert the wiper blade refill (1) tip into the end of the wiper blade (2) in the direction (C). Push the wiper blade refill (1) in while pressing it into the end of the wiper blade (2) as shown. After the wiper blade refill is fully inserted, remove the holder (B). (A): Tab (part of wiper blade) (2)



- Make sure to slide the refill into the wiper blade so that the wiper blade refill is held by the tabs (A) on the wiper blade as shown.



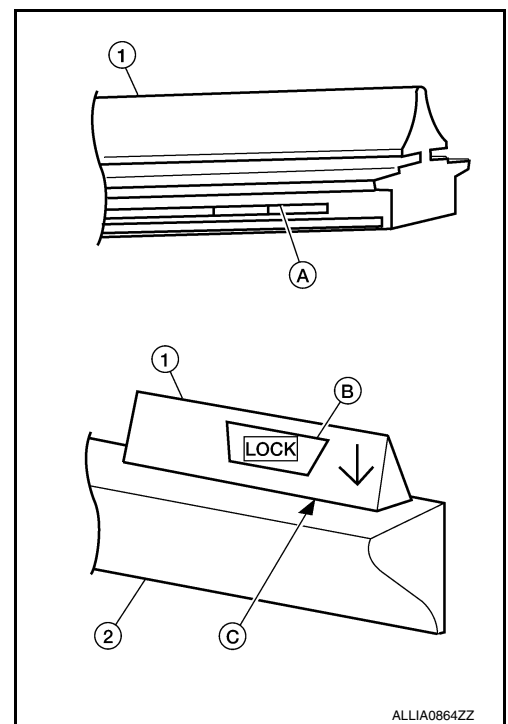
A  
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P

WW

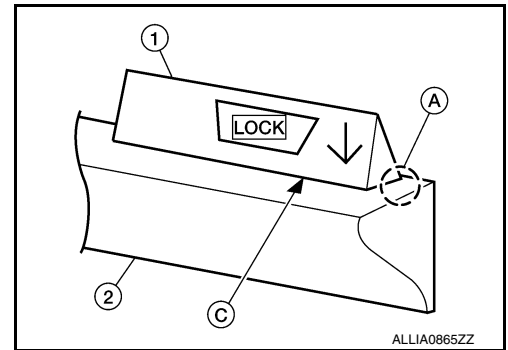
## FRONT WIPER BLADE

### < REMOVAL AND INSTALLATION >

3. Push the wiper blade refill (1) until the tabs on the wiper blade (2) fit into the stoppers (A) in the end of the wiper blade refill (1). Make sure the LOCK mark (B) on the wiper blade refill (1) is aligned with the lock point symbol (C) on the wiper blade (2) as shown.



4. Before installing the wiper blade, make sure that the wiper blade refill (1) end is fully covered by the wiper blade (2) in area (A) and locked at point (C).



5. Install the wiper blade. Refer to [WW-67. "WIPER BLADE : Removal and Installation"](#).

# FRONT WIPER DRIVE ASSEMBLY

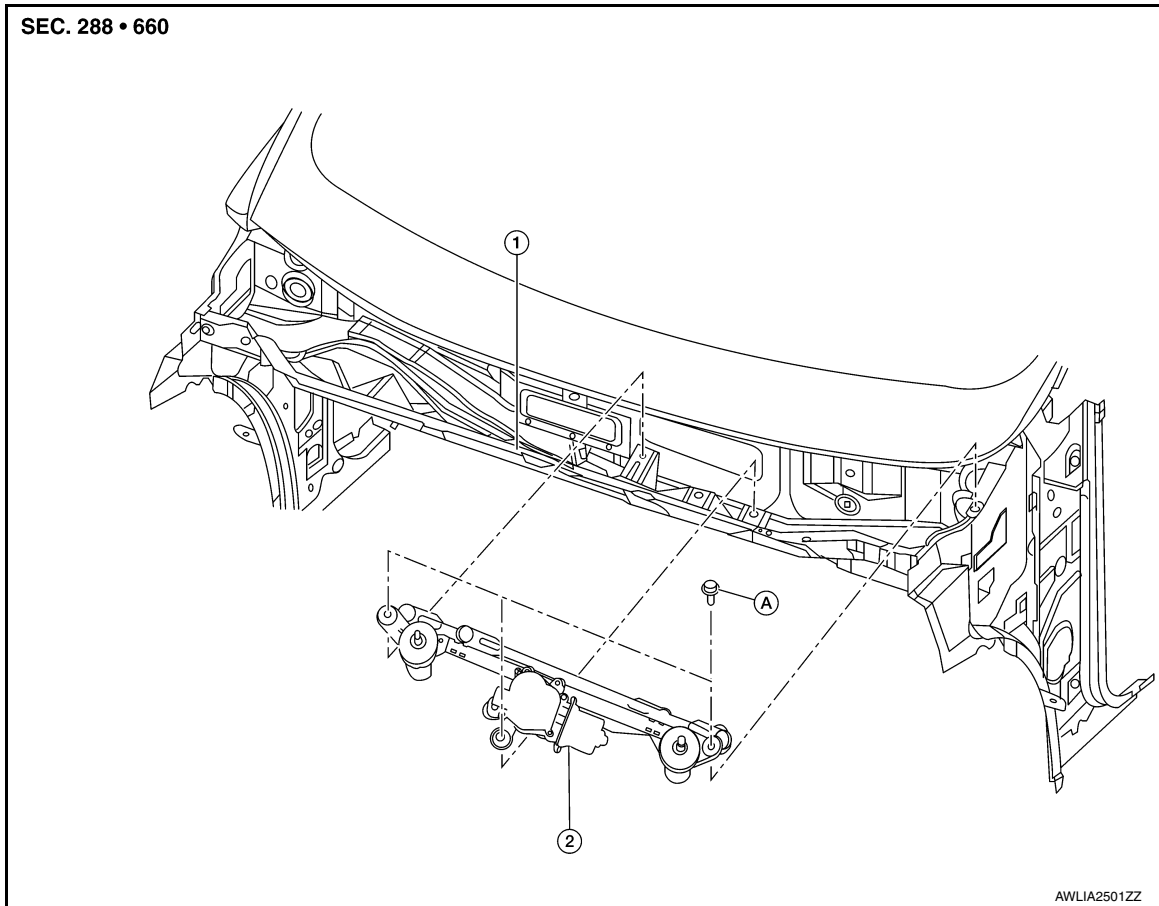
< REMOVAL AND INSTALLATION >

## FRONT WIPER DRIVE ASSEMBLY

Exploded View

INFOID:000000012423301

REMOVAL



1. Cowl top

2. Front wiper drive assembly

A. Refer to INSTALLATION

## Removal and Installation

INFOID:000000012423302

WW

### REMOVAL

1. Remove cowl top cover. Refer to [EXT-26, "Removal and Installation"](#).
2. Disconnect harness connector from front wiper motor.
3. Remove bolts and front wiper drive assembly.

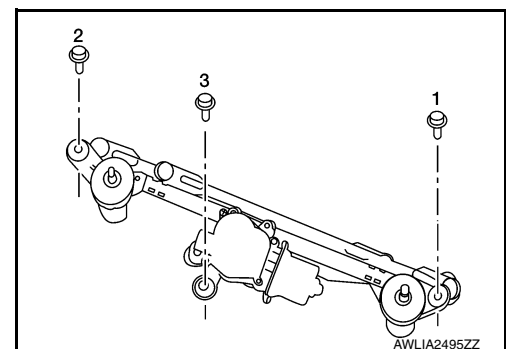
### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

Tighten the bolts to specification in the sequence shown.

**Bolts** : 4.5 N·m (0.46 kg·m, 40 in·lb)



# FRONT WIPER MOTOR

< REMOVAL AND INSTALLATION >

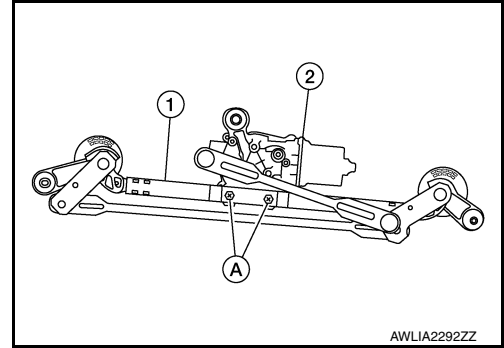
## FRONT WIPER MOTOR

### Removal and Installation

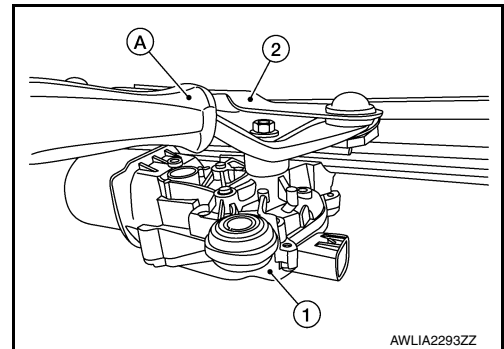
INFOID:000000012423303

#### REMOVAL

1. Remove the front drive assembly. Refer to [WW-71. "Removal and Installation"](#).
2. Remove the bolts (A) from the front wiper drive assembly (1) and the front wiper motor (2).



3. Separate the wiper motor (1) from the front wiper drive (2) using suitable tool (A).



4. Remove the front wiper motor.

#### INSTALLATION

Installation is in the reverse order of removal.



# WIPER AND WASHER SWITCH

< REMOVAL AND INSTALLATION >

## WIPER AND WASHER SWITCH

### Removal and Installation

INFOID:000000012423304

The wiper and washer switch is serviced as a part of the combination switch. Refer to [BCS-77. "Removal and Installation"](#).

A  
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WW

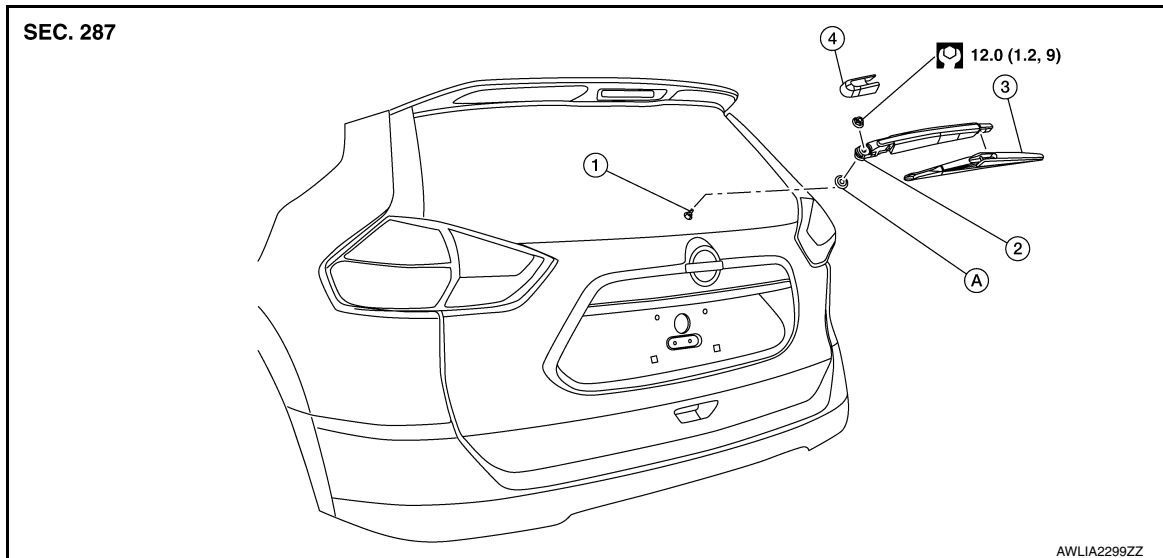
# REAR WIPER ARM

< REMOVAL AND INSTALLATION >

## REAR WIPER ARM

Exploded View

INFOID:000000012423305



- |                         |                   |                     |
|-------------------------|-------------------|---------------------|
| 1. Rear wiper motor     | 2. Rear wiper arm | 3. Rear wiper blade |
| 4. Rear wiper arm cover | A. Seal           |                     |

## Removal and Installation

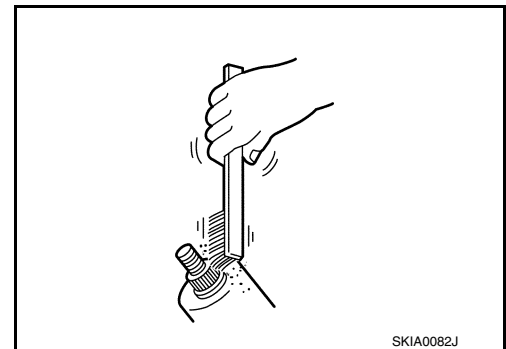
INFOID:000000012423306

### REMOVAL

1. Check that the rear wiper arm is in the auto stop position.
2. Remove the rear wiper arm cover.
3. Remove the rear wiper arm nut from the rear wiper arm.
4. Remove the rear wiper arm.

### INSTALLATION

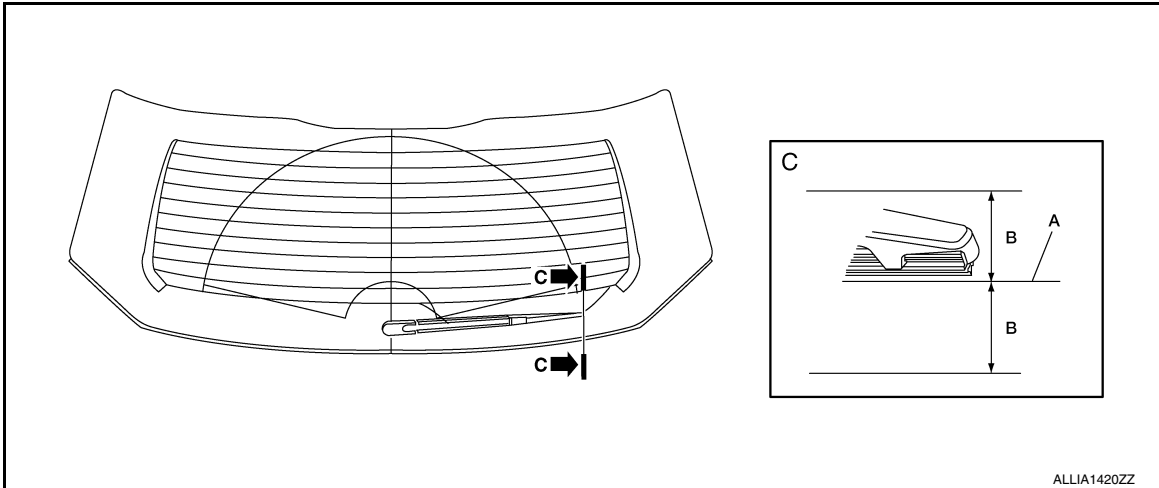
1. Clean the rear wiper arm mount as shown, to prevent the possibility of rear wiper arm looseness.



2. Check that the rear wiper motor is in the auto stop position.
3. Install the rear wiper arm by positioning the rear wiper blade on the rear window defogger wire (A) then tighten the rear wiper arm nut to specification.

# REAR WIPER ARM

## < REMOVAL AND INSTALLATION >



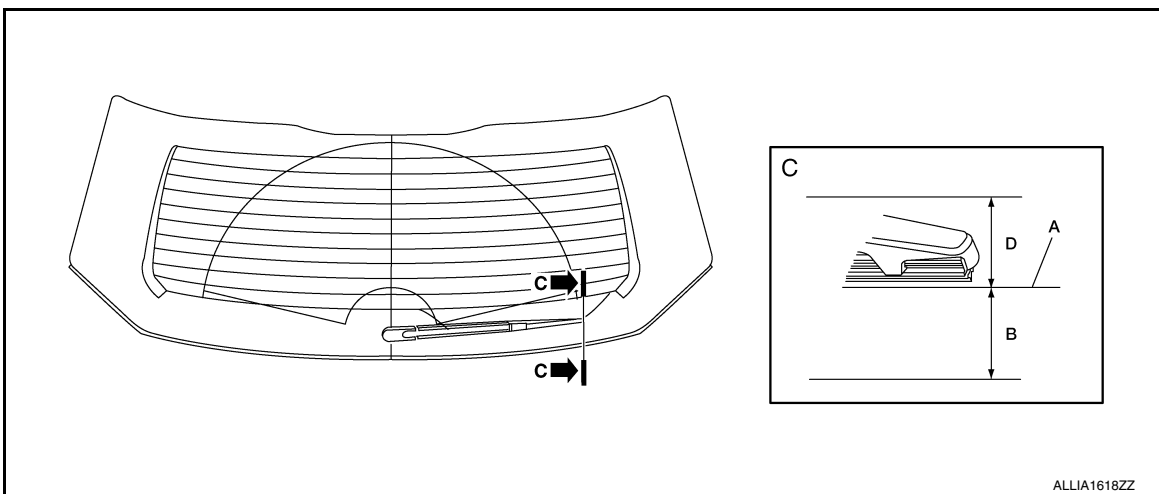
A. Rear window defogger wire

**B** :  $\pm 7.5 \text{ mm}$  ( $\pm .30 \text{ in}$ )

4. Instal the rear wiper arm cover.
5. Check that the rear wiper blade stops at the specified position. Refer to [WW-75, "Inspection"](#).

### Inspection

INFOID:000000012423307



A. Rear window defogger wire

**D** :  $20.0 \text{ mm}$  ( $0.79 \text{ in}$ )

**B** :  $7.5 \text{ mm}$  ( $0.30 \text{ in}$ )

Auto stop position is on top of the rear window defogger wire (A).

A  
B  
C  
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P

WW

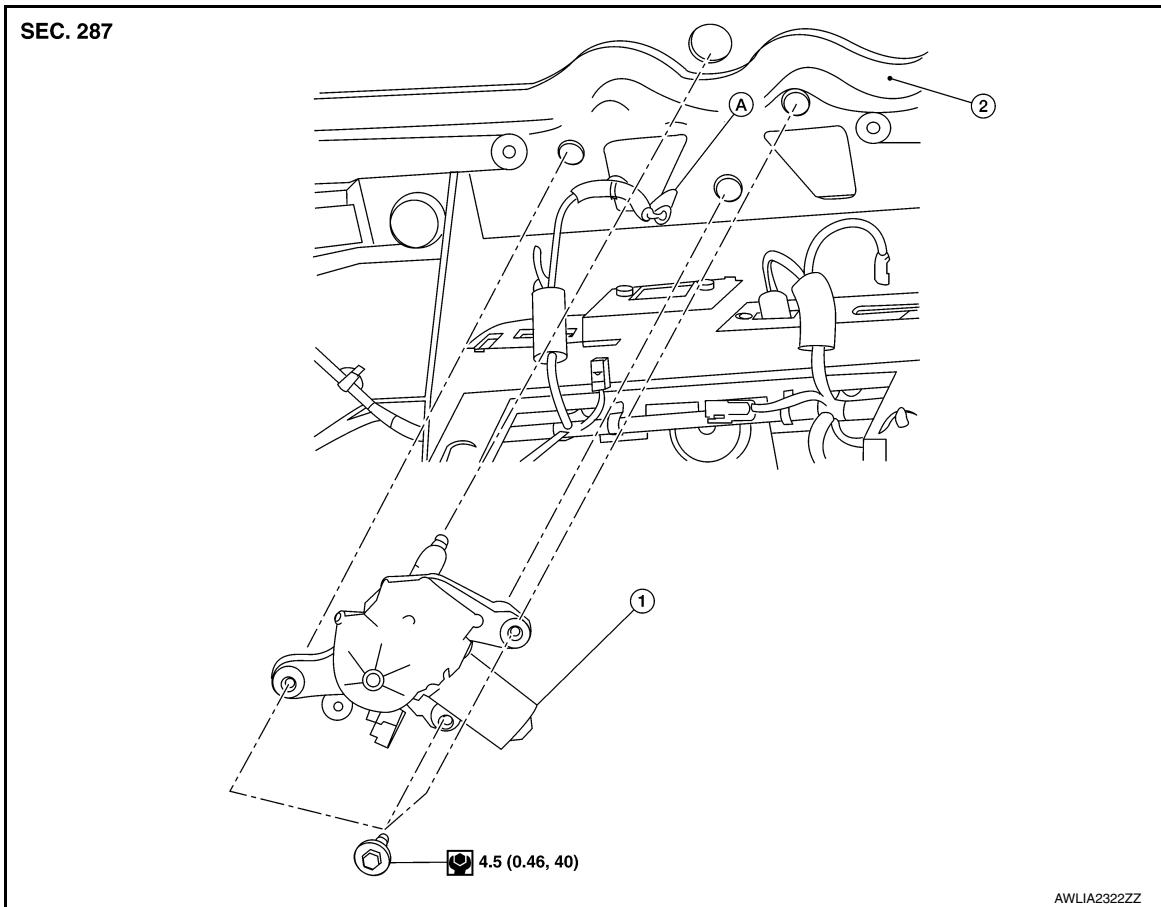
# REAR WIPER MOTOR

< REMOVAL AND INSTALLATION >

## REAR WIPER MOTOR

Exploded View

INFOID:000000012423308



1. Rear wiper motor

2. Back door

A. Rear wiper motor harness

## Removal and Installation

INFOID:000000012423309

### REMOVAL

1. Remove rear wiper arm. Refer to [WW-74, "Removal and Installation"](#).
2. Remove back door finisher. Refer to [INT-38, "Removal and Installation"](#).
3. Disconnect the harness connector from the rear wiper motor.
4. Remove bolts and the rear wiper motor.

### INSTALLATION

Install in the reverse order of removal.

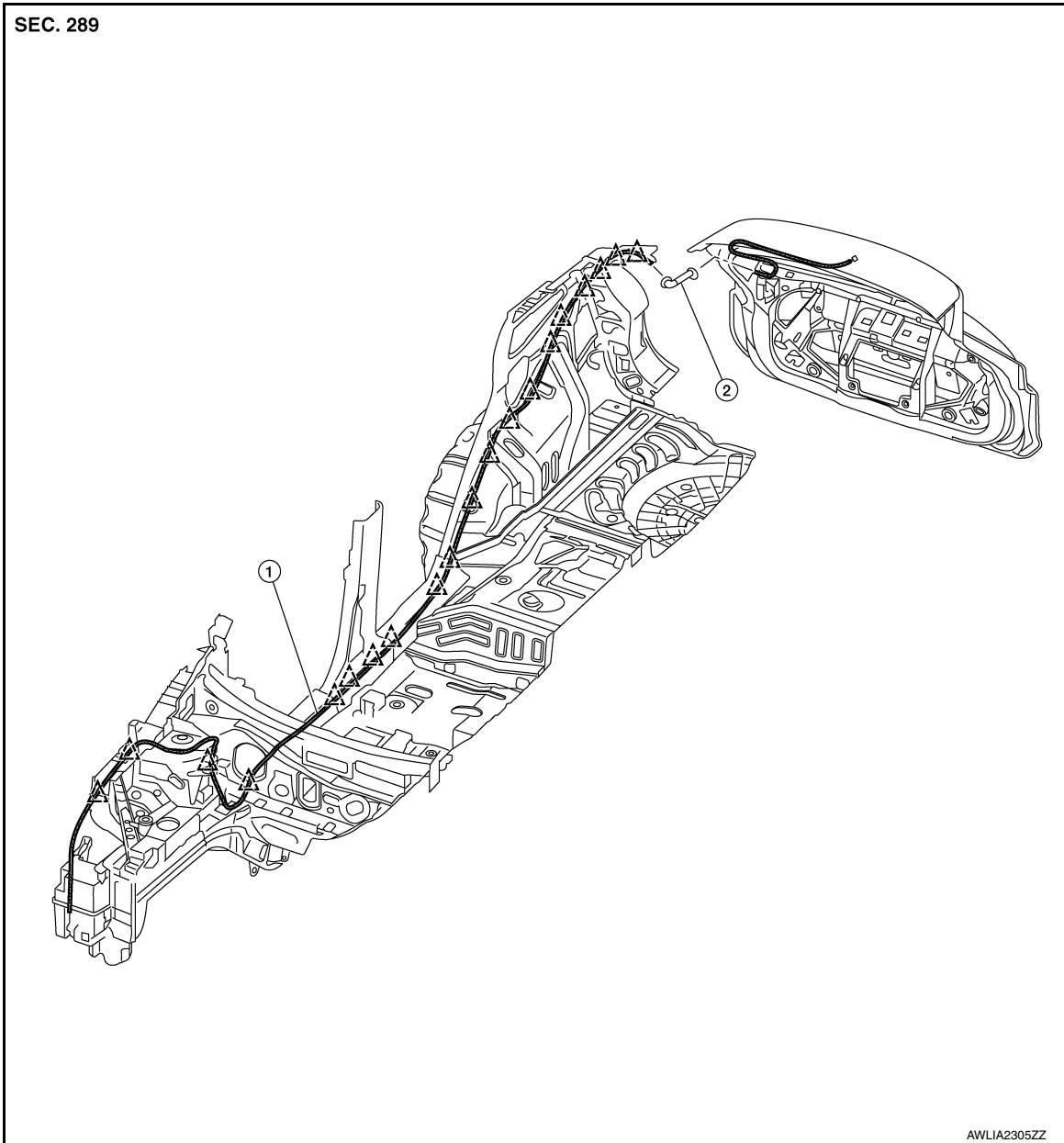
# REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## REAR WASHER NOZZLE AND TUBE


Exploded View

INFOID:000000012423310



1. Rear washer tube

2. Rear grommet

 Clip

### Removal and Installation - Rear Washer Nozzle

INFOID:000000012423311

#### REMOVAL

1. Remove rear access panel. Refer to [INT-38, "Exploded View"](#).

A  
B  
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P

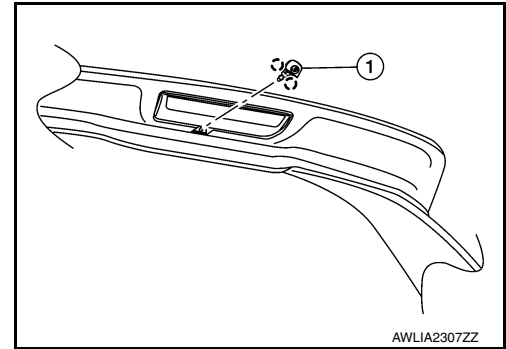
WW

## REAR WASHER NOZZLE AND TUBE

### < REMOVAL AND INSTALLATION >

2. Release pawls and remove rear washer nozzle (1).

○: Pawl



### INSTALLATION

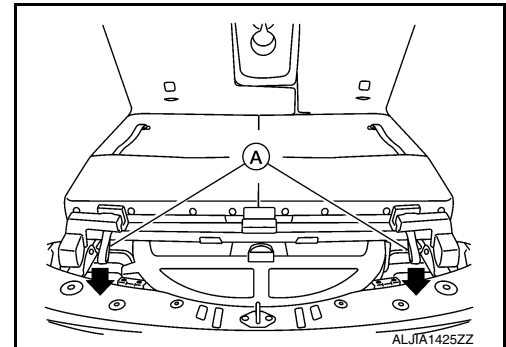
Installation in the reverse order of removal.

### Removal and Installation - Rear Washer Tube

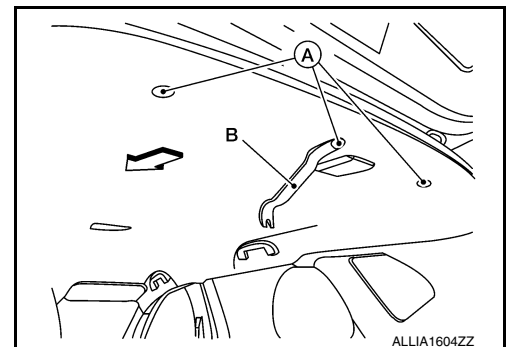
INFOID:000000012423312

### REMOVAL

1. Remove front over fender (RH). Refer to [EXT-31, "FRONT OVER FENDER : Removal and Installation"](#).
2. Remove wind deflector (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
3. Remove engine side cover (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
4. Partially remove front fender protector (RH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
5. Release seat latches by pulling straps (A) rearward, then lift seat from seat strikers (LH/RH).



6. Remove dash side finisher (RH). Refer to [INT-24, "DASH SIDE FINISHER : Removal and Installation"](#).
7. Remove center pillar lower finisher (RH). Refer to [INT-22, "CENTER PILLAR LOWER FINISHER : Removal and Installation"](#).
8. Remove luggage side upper finisher (LH/RH). Refer to [INT-38, "Exploded View"](#).
9. Remove headlining clips (A) using suitable tool (B) and partially lower headlining (rear).



10. Disconnect rear washer tube from washer tank and rear washer nozzle.
11. Release clips and remove rear washer tube.

### INSTALLATION

Installation is in the reverse order of removal.

# REAR WASHER NOZZLE AND TUBE

< REMOVAL AND INSTALLATION >

## Inspection and Adjustment

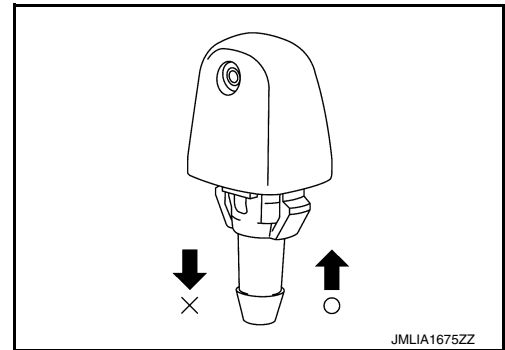
INFOID:000000012423313

### INSPECTION

Check that air can pass through the nozzle by blowing into the nozzle and that air cannot flow in the opposite direction.

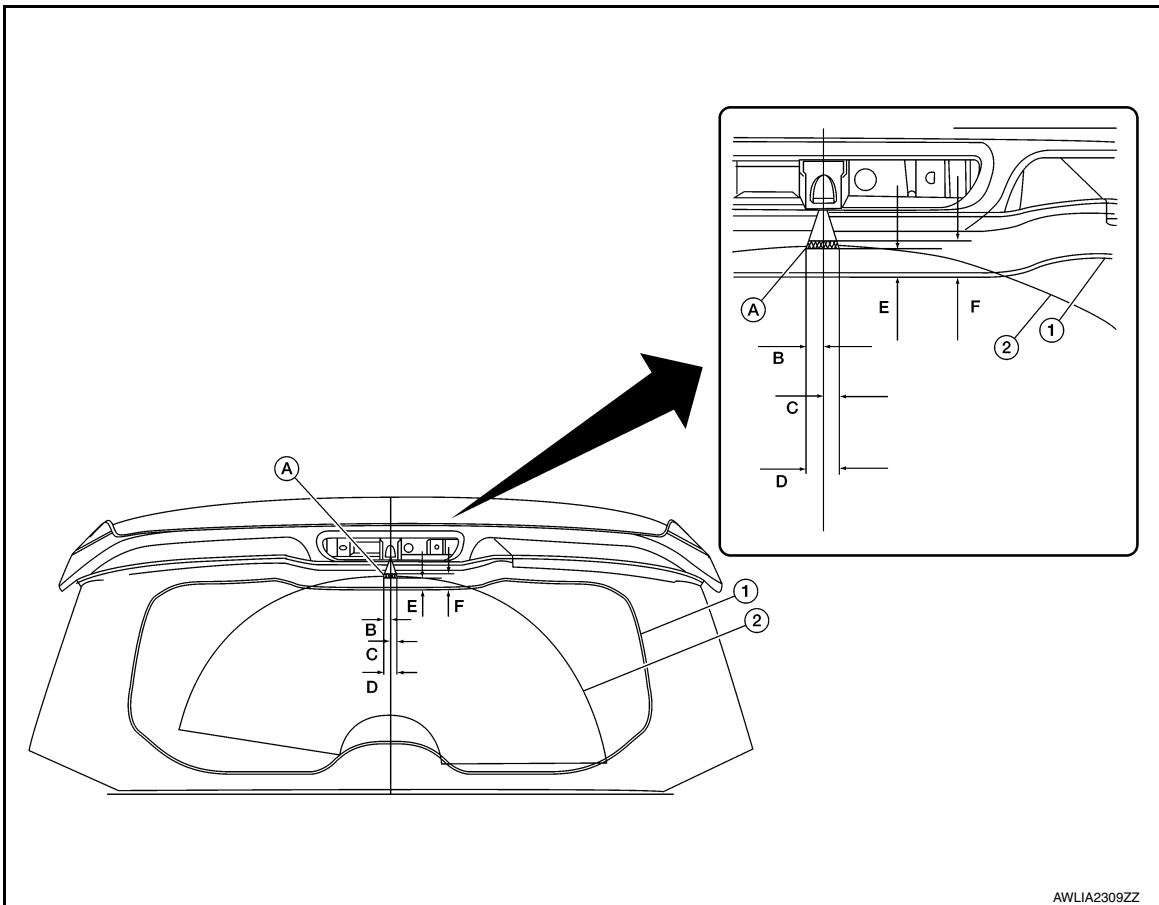
O: Air can go

X: Air cannot go



### ADJUSTMENT

If operating properly, spray positions should match the positions shown. If spray positions do not match, confirm the rear washer nozzle is properly seated and working properly. If the spray positions still do not match as shown, then replace the rear washer nozzle. Refer to [WW-77, "Removal and Installation - Rear Washer Nozzle"](#)



- |                     |                     |                      |
|---------------------|---------------------|----------------------|
| 1. Black print      | 2. Wiping area      | A. Spray target area |
| B. 12.8 mm (0.5 in) | C. 12.8 mm (0.5 in) | D. 25.7 mm (1.0 in)  |
| E. 15.5 mm (0.6 in) | F. 20.6 mm (0.8 in) |                      |

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

WW

# FRONT WIPER DRIVE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

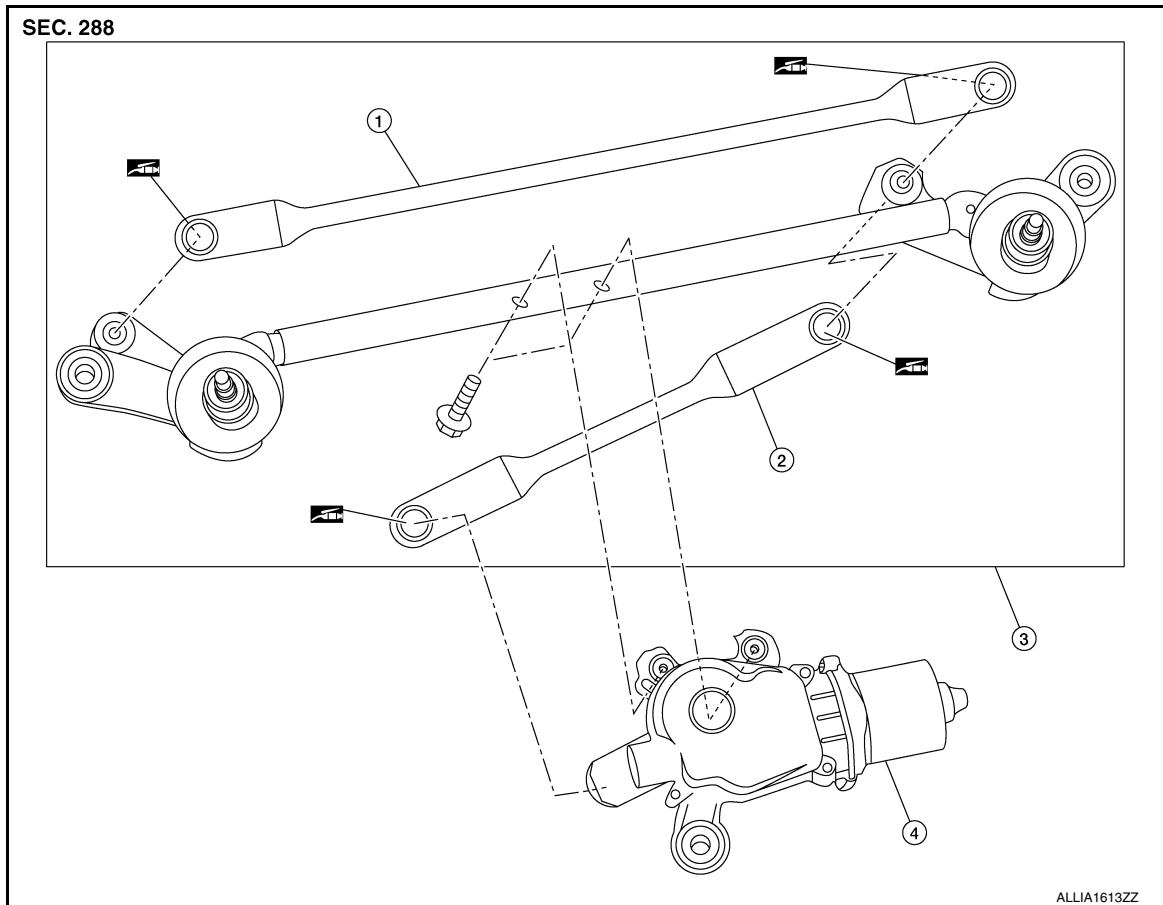
## UNIT DISASSEMBLY AND ASSEMBLY

### FRONT WIPER DRIVE ASSEMBLY

Exploded View

INFOID:000000012423314

DISASSEMBLY VIEW



1. Front wiper linkage 1
2. Front wiper linkage 2
3. Front wiper drive
4. Front wiper motor

### Disassembly and Assembly

INFOID:000000012423315

#### DISASSEMBLY

1. Remove front wiper motor. Refer to [WW-72, "Removal and Installation"](#).
2. Remove front wiper linkage 1 and 2 from the front wiper drive.

**CAUTION:**

**Do not bend the linkage or damage the plastic part of the ball joint when removing the front wiper linkage.**

#### ASSEMBLY

1. Install front wiper motor to front wiper drive.
2. Install front wiper linkage 1 to the front wiper motor and the front wiper drive.
3. Install front wiper linkage 2 to the front wiper drive.

**CAUTION:**

- Do not drop front wiper motor or cause it to come into contact with other parts.
- Apply multi-purpose grease or an equivalent grease if necessary.



# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications

INFOID:0000000012423316

### WINDSHIELD WASHER FLUID

Windshield washer fluid capacity (with washer tank inlet)	5.2 ℓ (5 1/2 US qt, 4 5/8 Imp qt)
Windshield washer fluid specification	Refer to <a href="#">MA-11. "Fluids and Lubricants"</a> .

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WW