

SECTION **DEF**  
**DEFOGGER**

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# PRECAUTIONS

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

#### Precaution for Technicians Using Medical Electric

INFOID:000000007079611

##### OPERATION PROHIBITION

###### **WARNING:**

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

##### NORMAL CHARGE PRECAUTION

###### **WARNING:**

- If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.
- As radiated electromagnetic wave generated by on board charger at normal charge operation may effect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not enter the vehicle compartment (including luggage room) during normal charge operation.

##### PRECAUTION AT TELEMATICS SYSTEM OPERATION

###### **WARNING:**

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

##### PRECAUTION AT INTELLIGENT KEY SYSTEM OPERATION

###### **WARNING:**

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

#### Point to Be Checked Before Starting Maintenance Work

INFOID:000000007079612

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

###### **NOTE:**

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

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

INFOID:000000007038023

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS

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# PRECAUTIONS

## < PRECAUTION >

system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

### **WARNING:**

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

### **WARNING:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the power switch ON, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the power switch OFF, disconnect the 12V battery, and wait at least 3 minutes before performing any service.

## Precautions for Removing Battery Terminal

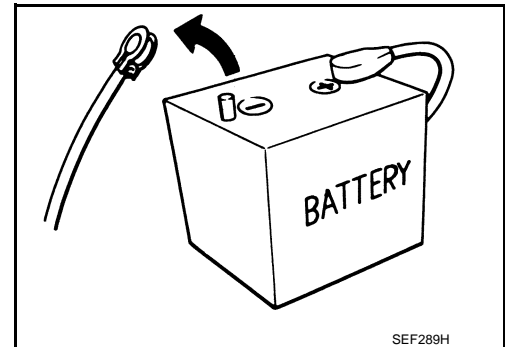
INFOID:000000007539527

- When removing the 12V battery terminal, turn OFF the power switch and wait at least 5 minutes.

### **NOTE:**

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

- Always disconnect the battery terminal within 60 minutes after turning OFF the power switch. Even when the power switch is OFF, the 12V battery automatic charge control may automatically start after a lapse of 60 minutes from power switch OFF.
- Disconnect 12V battery terminal according to the following steps.



## WORK PROCEDURE

1. Check that EVSE is not connected.

### **NOTE:**

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

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

### **NOTE:**

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

4. Remove 12V battery terminal within 60 minutes after turning the power switch OFF → ON → OFF.

### **CAUTION:**

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

### **NOTE:**

Once the power switch is turned ON → OFF, the 12V battery automatic charge control does not start for approximately 1 hour.

# PRECAUTIONS

## < PRECAUTION >

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

A

**NOTE:**

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

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

B

**NOTE:**

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

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# COMPONENT PARTS

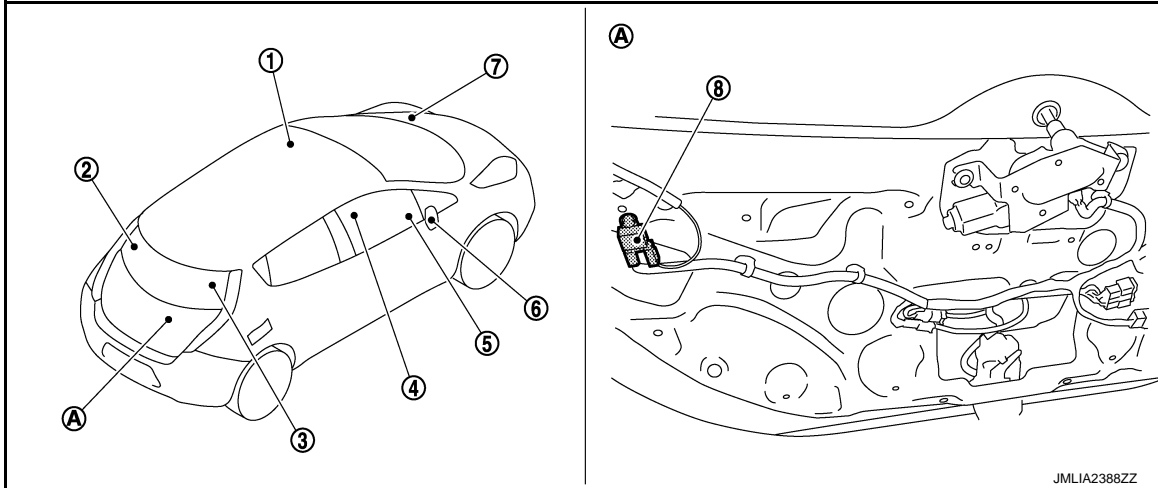
< SYSTEM DESCRIPTION >

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000007539037



A. Back door lower finisher inside

No.	Component	Function
1.	BCM	<ul style="list-style-type: none"> <li>• Detects rear window defogger switch signal and transmits rear window defogger control signal to IPDM E/R via CAN communication.</li> <li>• Performs the timer control of rear window defogger.</li> </ul> Refer to <a href="#">BCS-6, "BODY CONTROL SYSTEM : Component Parts Location"</a> for detailed installation location.
2.	Rear window defogger connector	Refer to <a href="#">DEF-7, "Rear window defogger"</a> .
3.	(Rear window defogger)	
4.	A/C auto amp. (Rear window defogger switch)	<ul style="list-style-type: none"> <li>• The rear window defogger switch is installed.</li> <li>• The rear window defogger and door mirror defogger* are operated by turning the rear window defogger switch ON.</li> <li>• The indicator lamp in the rear window defogger switch illuminates when the rear window defogger is operating.</li> </ul> Refer to <a href="#">HAC-9, "AUTOMATIC AIR CONDITIONING SYSTEM : Component Parts Location"</a> for detailed installation location.
5.	VCM	VCM receives rear window defogger control signal from IPDM E/R, and transmits rear window defogger status signal to A/C auto amp. via EV system CAN communication. Refer to <a href="#">EVC-17, "Component Parts Location"</a> for detailed installation location.
6.	Door mirror defogger*	Refer to <a href="#">DEF-7, "Door mirror defogger"</a> .
7.	IPDM E/R	<ul style="list-style-type: none"> <li>• The rear window defogger relay is installed.</li> <li>• Receives rear window defogger control signal from BCM via CAN communication.</li> <li>• Controls rear window defogger relay to operate rear window defogger and door mirror defogger*.</li> </ul> Refer to <a href="#">PCS-7, "Component Parts Location"</a> for detailed installation location.
8.	Condenser	Removes the noise that is generated when rear window defogger turns ON/OFF.

\*:Models with door mirror defogger

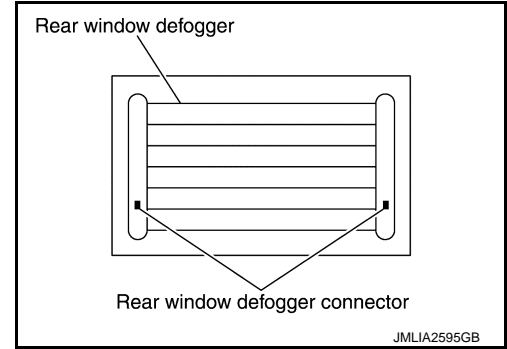
# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

### Rear window defogger

INFOID:000000008188105

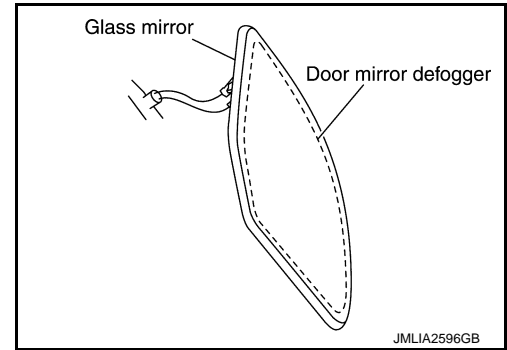
Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window from fogging up.



### Door mirror defogger

INFOID:000000008188106

Heats the heating wire with the power supply from the rear window defogger relay to prevent the door mirror from fogging up.



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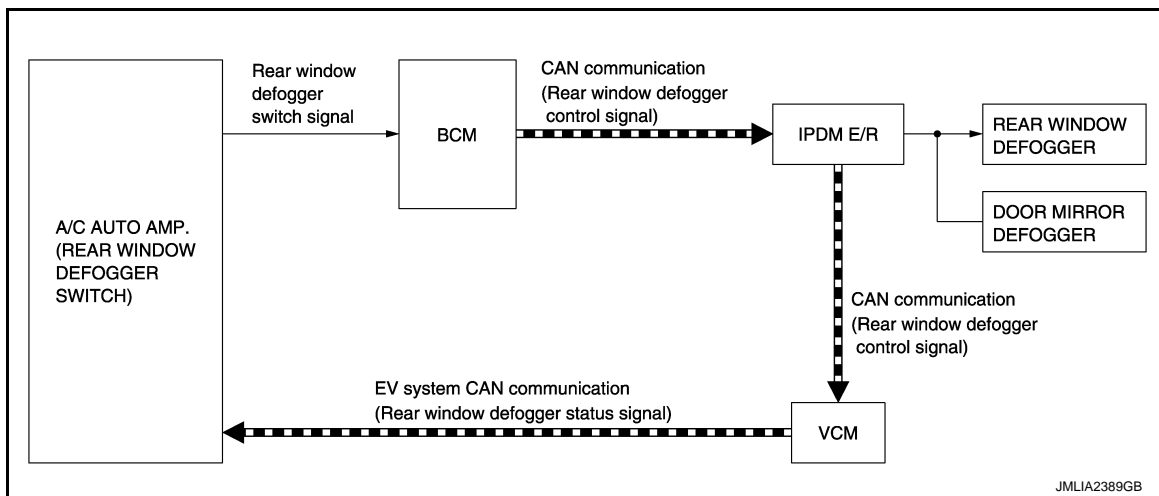
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## SYSTEM

### System Description

INFOID:000000007539038

### SYSTEM DIAGRAM



### OPERATION DESCRIPTION

- Turn rear window defogger switch ON while power switch is ON. Then A/C auto amp. transmits rear window defogger switch signal to BCM.
- BCM transmits rear window defogger control signal to IPDM E/R via CAN communication for approximately 15 minutes.
- IPDM E/R turns rear window defogger relay ON when rear window defogger control signal is received.
- When rear window defogger relay turns ON, IPDM E/R transmits rear window defogger control signal to VCM via CAN communication. VCM transmits rear window defogger status signal to A/C auto amp. via EV system CAN communication.
- When rear window defogger is activated, indicator lamp on rear window defogger switch turns ON.

### TIMER FUNCTION

- BCM transmits the rear window defogger control signal to IPDM E/R for approximately 15 minutes when the rear window defogger switch turns ON while power switch is ON. Then IPDM E/R activates rear window defogger and door mirror defogger (Models with door mirror defogger).
- The timer is cancelled if the rear window defogger switch is pressed again during timer operation. BCM stops the output of rear window defogger control signal. The same action occurs during timer operation if the power switch is turned OFF.

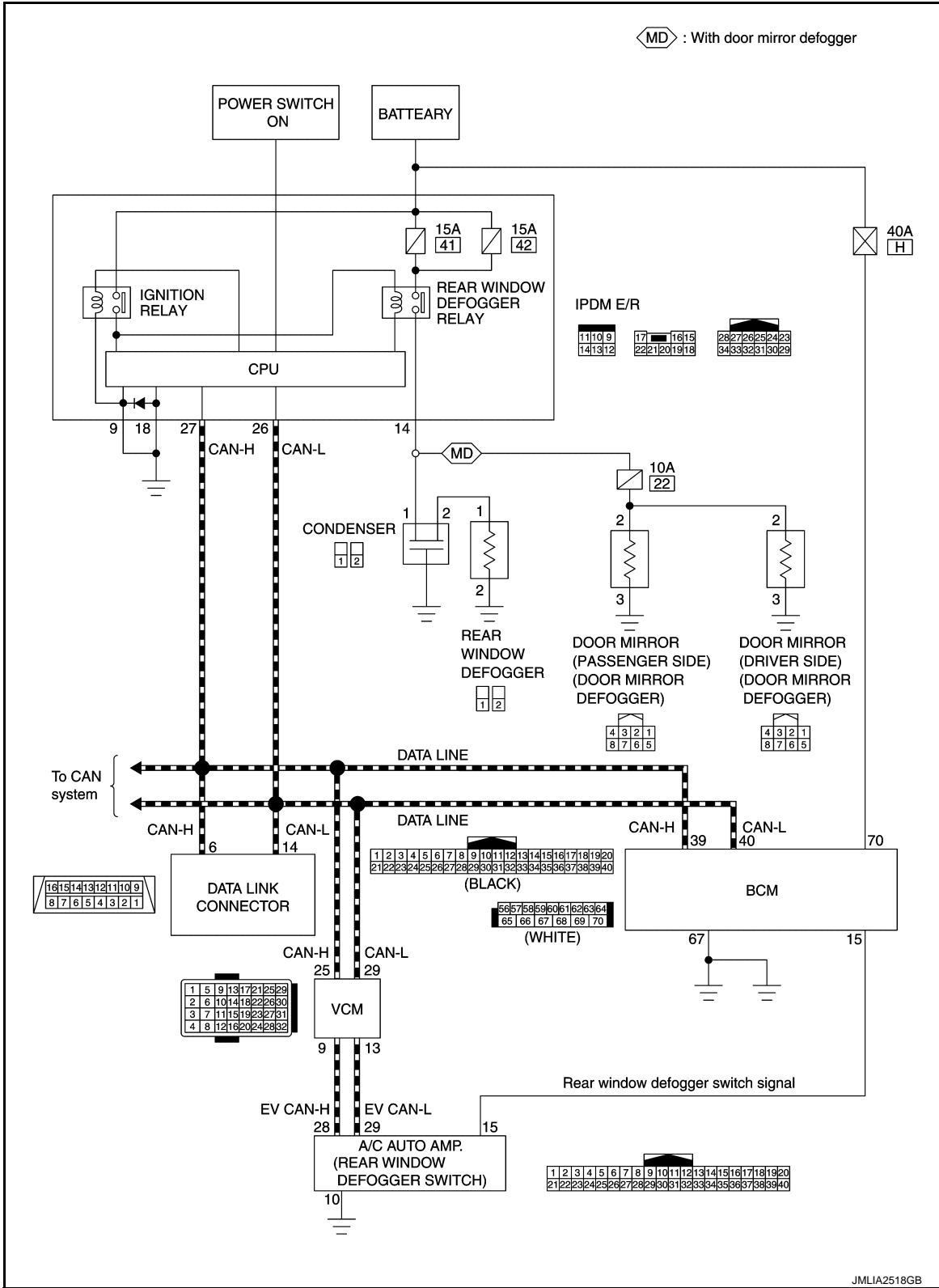


# SYSTEM

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## Circuit Diagram

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## DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

### DIAGNOSIS SYSTEM (BCM)

#### COMMON ITEM

#### COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000007539039

#### APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	<ul style="list-style-type: none"> <li>• Read and save the vehicle specification.</li> <li>• Write the vehicle specification when replacing BCM.</li> </ul>

#### SYSTEM APPLICATION

BCM can perform the following functions for each system.

#### NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

×: Applicable item

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

\*: This item is displayed, but not used.

#### FREEZE FRAME DATA (FFD)

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

# DIAGNOSIS SYSTEM (BCM)

## < SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description		
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected		A
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected		
Vehicle Condition	SLEEP>LOCK	Power supply position status of the moment a particular DTC is detected*	While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (LOCK)]	B
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (OFF)]	C
	LOCK>ACC		While turning power supply position from OFF (LOCK) to ACC	
	ACC>ON		While turning power supply position from ACC to ON	D
	RUN>ACC		While turning power supply position from READY (RUN) to ACC (Except emergency stop operation)	
	CRANK>RUN		While turning power supply position from READY (CRANK) to READY (RUN)	E
	RUN>URGENT		While turning power supply position from READY (RUN) to ACC (Emergency stop operation)	
	ACC>OFF		While turning power supply position from ACC to OFF (OFF)	F
	OFF>LOCK		While turning power supply position from OFF (OFF) to OFF (LOCK)	G
	OFF>ACC		While turning power supply position from OFF (OFF) to ACC	
	ON>CRANK		While turning power supply position from ON to READY (CRANK)	H
	OFF>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (OFF)] to low power consumption mode	
	LOCK>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (LOCK)] to low power consumption mode	I
	LOCK		Power supply position is OFF (LOCK)	
	OFF		Power supply position is OFF (OFF)	J
	ACC		Power supply position is ACC	
	ON		Power supply position is ON	K
ENGINE RUN	Power supply position is READY (RUN)			
CRANKING	Power supply position is READY (CRANK)			
IGN Counter	0 - 39	The number of times that power switch is turned ON after DTC is detected <ul style="list-style-type: none"> <li>• The number is 0 when a malfunction is detected now.</li> <li>• The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever power switch OFF → ON.</li> <li>• The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.</li> </ul>		DEF

### NOTE:

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

- OFF (OFF, LOCK): Power switch OFF
- ACC: Power switch ACC
- ON: Power switch ON
- READY (CRANK): Shifting to vehicle condition READY (Transmitting the READY signal from BCM to VCM)
- READY (RUN): Vehicle condition READY

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

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

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

## REAR WINDOW DEFOGGER

# DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

## REAR WINDOW DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)

INFOID:000000006932654

### DATA MONITOR

Monitor Item	Description
REAR DEF SW	Displays "Press (ON)/other (OFF)" status determined with the rear window defogger switch.
PUSH SW	Indicates [ON/OFF] condition of push switch.

### ACTIVE TEST

Test Item	Description
REAR DEFOGGER	Gives rear window defogger signal to the rear window defogger relay to activate it.

# DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (IPDM E/R)

### Diagnosis Description

INFOID:000000007539040

#### AUTO ACTIVE TEST

##### Description

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

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

##### Operation Procedure

###### NOTE:

Never perform auto active test in the following conditions.

- CONSULT is connected.
- Passenger door is open.

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

###### NOTE:

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

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

###### NOTE:

- When auto active test mode has to be cancelled halfway through test, turn the power switch OFF.
- When auto active test is not activated, door switch may be the cause. Check door switch. Refer to [DLK-97](#), "[Component Function Check](#)".

##### Inspection in Auto Active Test Mode

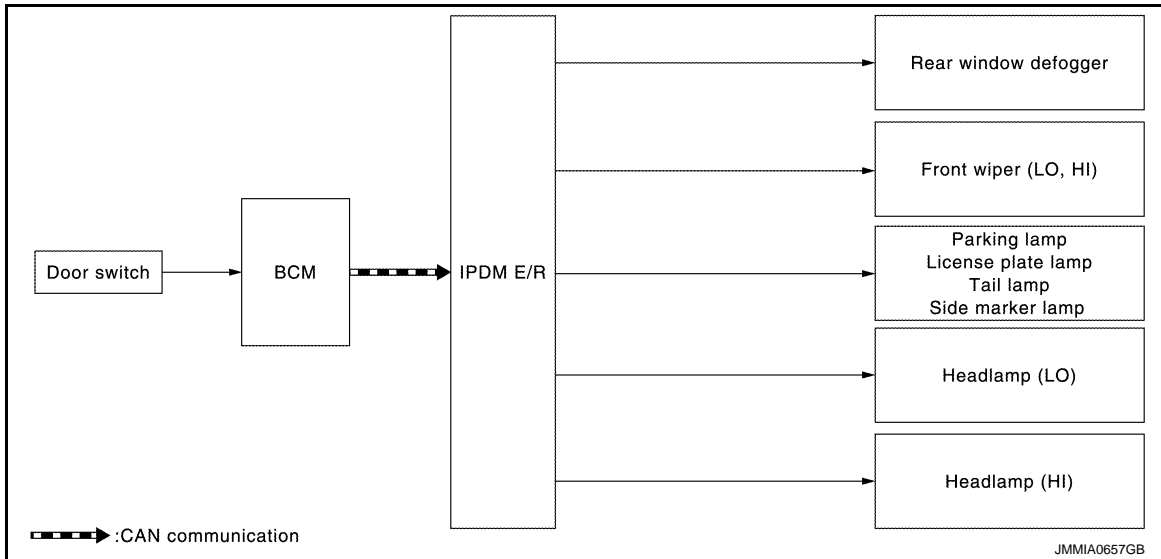
When auto active test mode is actuated, the following operation sequence is repeated 3 times.

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

# DIAGNOSIS SYSTEM (IPDM E/R)

## < SYSTEM DESCRIPTION >

Concept of auto active test



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

Diagnosis chart in auto active test mode

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

## CONSULT Function (IPDM E/R)

INFOID:000000007539041

### APPLICATION ITEM

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

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

### SELF DIAGNOSTIC RESULT

Refer to [PCS-21, "DTC Index"](#).

### DATA MONITOR

## DIAGNOSIS SYSTEM (IPDM E/R)

### < SYSTEM DESCRIPTION >

#### Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
AC COMP REQ [Off/On]	×	<b>NOTE:</b> The item is indicated, but not monitored.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the power switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the power switch judged by IPDM E/R.
INTER/NP SW [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
ST RLY CONT [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
IHBT RLY -REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
ST/INHI RLY [Off/ ST ON/INHI ON/UNKWN]		<b>NOTE:</b> The item is indicated, but not monitored.
DETENT SW [Off/On]		Displays the status of the P position signal judged by IPDM E/R.
S/L RLY -REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
S/L STATE [LOCK/UNLK/UNKWN]		<b>NOTE:</b> The item is indicated, but not monitored.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication. <b>NOTE:</b> This item is monitored only for vehicle with the daytime running light system.
OIL P SW [Open/Close]		<b>NOTE:</b> The item is indicated, but not monitored.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R. <b>NOTE:</b> This item is monitored only for vehicle with the vehicle security system.
HL WASHER REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.

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## DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

### ACTIVE TEST

Test item

Test item	Operation	Description
HORN	On	Operates horn relay for 20 ms.
REAR DEFOGGER	Off	OFF
	On	Operates the rear window defogger relay.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	<b>NOTE:</b> This item is indicated, but cannot be tested.
	2	
	3	
	4	
HEAD LAMP WASHER	On	<b>NOTE:</b> This item is indicated, but cannot be tested.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.



# BCM, IPDM E/R

< ECU DIAGNOSIS INFORMATION >

## ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:000000006932657

ECU	Reference
BCM	<a href="#">BCS-33. "Reference Value"</a>
	<a href="#">BCS-53. "Fail-safe"</a>
	<a href="#">BCS-54. "DTC Inspection Priority Chart"</a>
	<a href="#">BCS-55. "DTC Index"</a>
IPDM E/R	<a href="#">PCS-16. "Reference Value"</a>
	<a href="#">PCS-20. "Fail-Safe"</a>
	<a href="#">PCS-21. "DTC Index"</a>

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DEF

# REAR WINDOW DEFOGGER SYSTEM

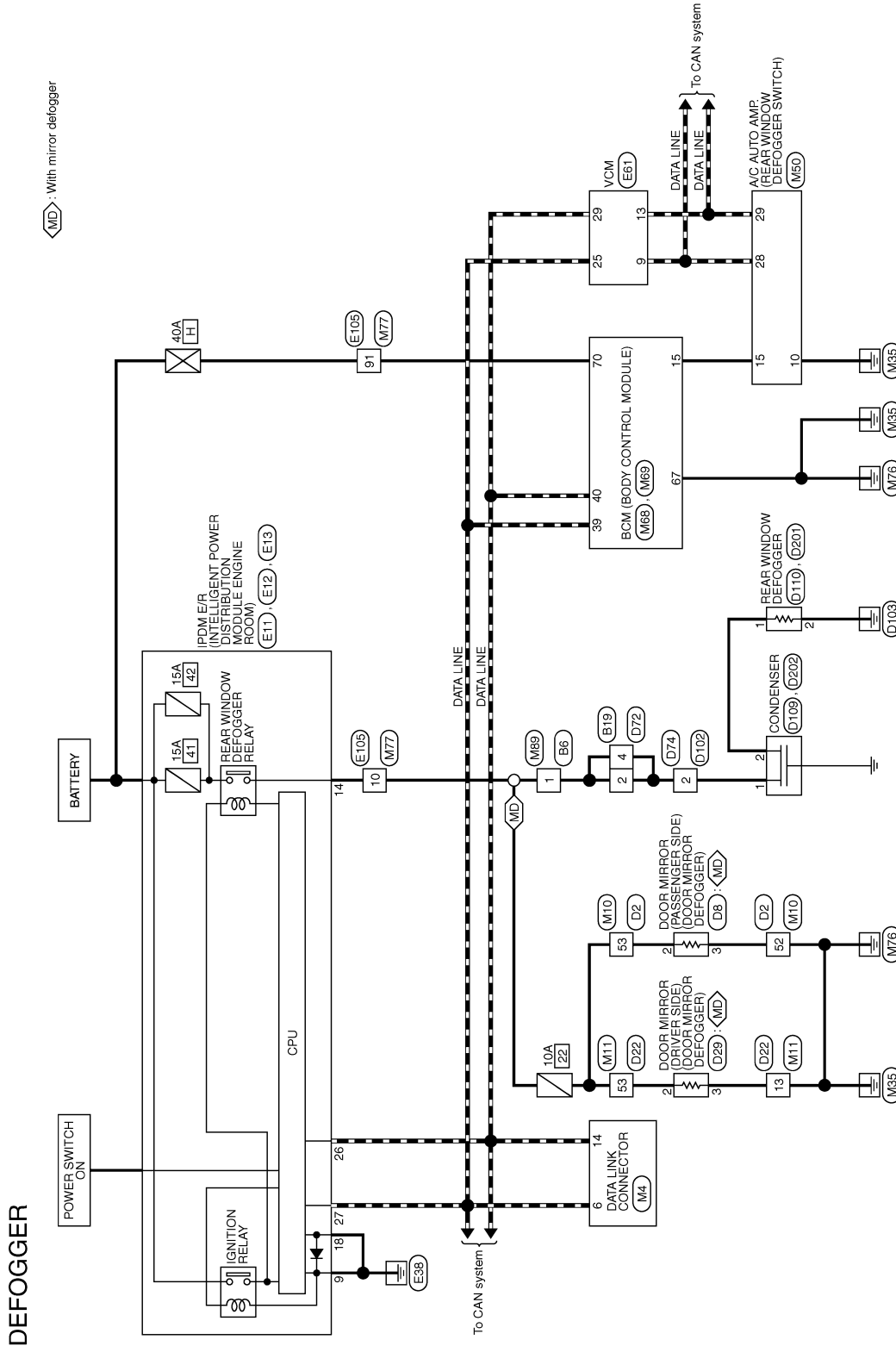
< WIRING DIAGRAM >

## WIRING DIAGRAM

### REAR WINDOW DEFOGGER SYSTEM

Wiring Diagram

INFOID:000000007063995



# REAR WINDOW DEFOGGER SYSTEM

< WIRING DIAGRAM >

## DEFOGGER

Connector No.	B6
Connector Name	WIRE TO WIRE
Connector Type	MD2MW-LC



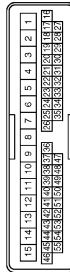
Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-

Connector No.	B19
Connector Name	WIRE TO WIRE
Connector Type	MD2MW-LC



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

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	TH0PW-CS15



Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	-
2	R	-

3	Y	-
4	V	-
10	BR	-
11	T	-
12	B	-
13	W	-
14	SB	-
15	R	-
24	Y	-
25	BR	-
26	SHIELD	-
36	B	-
37	P	-
38	Y	-
39	LG	-
44	V	-
45	W	-
46	EG	-
52	B	-
53	P	-

Connector No.	DB
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH08MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	-
2	P	-
3	B	-
7	EG	-
8	W	-

Connector No.	D22
Connector Name	WIRE TO WIRE
Connector Type	TH0PW-CS15



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	V	-
3	SB	-
4	V	-
7	B	-
8	BR	-
9	LG	-
10	Y	-
11	W	-
12	SB	-
13	B	-
14	V	-
15	R	-
24	R	-
25	G	-
26	SHIELD	-
37	LG	-
38	V	-
39	P	-
40	Y	-
41	GR	-
42	V	-
43	L	-
44	L	-
45	LG	-
46	BR	-
47	G	-
48	L	-
49	R	-
50	BR	-
53	P	-

Connector No.	D29
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH08MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	-
2	P	-
3	B	-
7	G	-
8	Y	-

Connector No.	D72
Connector Name	WIRE TO WIRE
Connector Type	MD4PW-LC



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	-
2	R	-
4	R	-

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# REAR WINDOW DEFOGGER SYSTEM

< WIRING DIAGRAM >

## DEFOGGER

Connector No.	D74
Connector Name	WIRE TO WIRE
Connector Type	MD4W-LC



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

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	MD4MW-LC



1	2	4
3	4	

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
2	R	-

Connector No.	D109
Connector Name	CONDENSER
Connector Type	PD1FE-A



1
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Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-

Connector No.	D110
Connector Name	REAR WINDOW DEFOGGER
Connector Type	PD1FB-A



2
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Terminal No.	Color of Wire	Signal Name [Specification]
2	B	-

Connector No.	D201
Connector Name	REAR WINDOW DEFOGGER
Connector Type	PD1FB-A



1
---

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-

Connector No.	D202
Connector Name	CONDENSER
Connector Type	PD1FB-A



2
---

Terminal No.	Color of Wire	Signal Name [Specification]
2	B	-

Connector No.	E11
Connector Name	ENGINE R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	MD8FE-LC



11	10	9
14	13	12

Terminal No.	Color of Wire	Signal Name [Specification]
9	B	-
14	R	-

Connector No.	E12
Connector Name	ENGINE R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	MS8FBR-CS



17	16	15
22	21	20
19	18	

Terminal No.	Color of Wire	Signal Name [Specification]
18	B/W	-
19	W	-
20	V	-

Connector No.	E13
Connector Name	ENGINE R INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH12FW-NH



28	27	26	25	24	23
34	33	32	31	30	29

Terminal No.	Color of Wire	Signal Name [Specification]
25	R	-

26	P
27	L
28	G
32	SB
34	W

Connector No.	E81
Connector Name	VCM
Connector Type	RH24FY-R28-R-RH



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

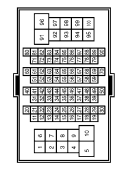
Terminal No.	Color of Wire	Signal Name [Specification]
1	G	POWER ON POWER SUPPLY
4	B/R	GROUND
5	SB	A/C RELAY
6	R	BATTERY POWER SUPPLY
7	W	SSOFF RELAY
8	B/R	GROUND
9	L	EV SYSTEM CAN-H
13	G	EV SYSTEM CAN-L
15	O	ASGD BRAKE SWITCH SIGNAL
18	SB	STOP LAMP SW SIGNAL
21	R	POWER ON POWER SUPPLY
23	P	HIGH VOLTAGE CABLE INTERLOCK
25	L	CAN-H
26	Y	WATER PUMP 2 SIGNAL
28	W	WATER PUMP 1 SIGNAL
29	P	CAN-L

# REAR WINDOW DEFOGGER SYSTEM

< WIRING DIAGRAM >

## DEFOGGER

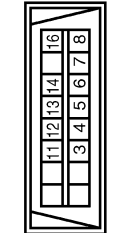
Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS1F-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	-
2	R	-
3	GR	-
4	LG	-
6	W	-
7	V	-
8	P	-
9	G	-
10	R	-
11	O	-
12	W	-
13	B	-
14	Y	-
15	BR	-
16	LG	-
17	L	-
19	G	-
20	V	-
21	P	-
22	LG	-
23	GR	-
24	L	-
25	R	-
26	SB	-
27	B	-
28	BR	-
30	W	-
31	V	-
32	LG	-
33	O	-
34	L	-
35	BR	-
38	SB	-
39	GR	-
40	Y	-
41	R	-
42	W	-
43	SB	-

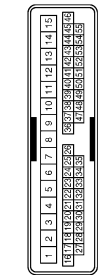
44	GR	-
45	G	-
46	P	-
47	LG	-
48	V	-
49	G	-
50	L	-
51	W	-
54	P	-
55	O	-
56	Y	-
57	P	-
58	LG	-
60	LG	-
61	GR	-
62	BR	-
63	O	-
64	R	-
65	Y	-
66	G	-
67	V	-
68	W	-
69	SB	-
71	Y	-
72	L	-
73	R	-
74	L	-
75	V	-
76	P	-
80	O	-
81	L	-
82	SB	-
83	G	-
84	BR	-
85	LG	-
86	GR	-
88	B	-
89	W	-
90	SHIELD	-
91	Y	-
92	BR	-
93	W	-
94	R	-
95	V	-
96	P	-
97	G	-
98	SB	-
99	O	-

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FN



Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	GR	-
8	G	-
11	SB	-
12	G	-
13	L	-
14	P	-
16	Y	-

Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	G	-
3	LG	-
4	V	-
10	BR	-
11	Y	-
12	B	-
13	W	-
14	SB	-
15	L	-
24	Y	-

25	BR	-
26	SHIELD	-
36	B	-
37	P	-
38	Y	-
39	LG	-
44	L	-
45	LG	-
46	BR	-
52	B	-
53	V	-

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# REAR WINDOW DEFOGGER SYSTEM

< WIRING DIAGRAM >

## DEFOGGER

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	-
2	L	-
3	G	-
4	V	-
7	BR	-
8	Y	-
9	LG	-
10	Y	-
11	W	-
12	SB	-
13	B	-
14	L	-
15	R	-
24	R	-
25	G	-
26	SHIELD	-
37	LG	-
38	V	-
39	P	-
40	Y	-
41	B	-
42	P	-
43	L	-
44	L	-
45	LG	-
46	BR	-
47	W	-
48	GR	-
49	R	-
50	BR	-
53	V	-

Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Type	TH40FW-NH

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	REC
2	R	MODE4
3	P	MODE3
4	Y	MODE2
5	V	MODE1
6	BR	MX4
7	SB	MX3
8	LG	MX2
9	L	MX1
10	B	GND
12	GR	BLOWER PWM
13	V	W/PUMP PWM
14	L	COMP TX
15	W	RR DEF SW O/P
16	LG	HEATED STEERING WHEEL SWITCH SIGNAL
17	R	W/PUMP F/B
18	W	COMP RX
19	W	LIGHT+
20	B	LIGHT-
21	G	FRESH
22	LG	HEATED STEERING WHEEL RELAY CONTROL SIGNAL
23	SB	SEAT HEAT RELAY
27	W	SV OUT
28	L	EV CAN-H
29	G	EV CAN-L
30	R	SENS GND
31	W	BATT
32	Y	IGN I
33	LG	INCAR SENS
34	G	INTAKE SENS
35	P	SUN SENS
36	GR	AMB SENS
37	BR	WATER SENS
38	SB	INT F/B
40	SB	PTC LIN

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

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

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	BR	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
7	GR	KEY CYL UNLK SW
8	R	KEY CYL LOCK SW
9	BR	STOP LAMP SW 1
12	Y	DOOR LK & UNLK SW LOCK
13	BR	DOOR LK & UNLK SW UNLOCK
14	G	OPTICAL SENS
15	W	REAR WINDOW DEF SW
16	R	DIMMER
17	Y	OPTICAL SENS PWR SPLY
18	V	SENS/RECEV GND
21	P	NATS ANTENNA AMP.
23	R	SECURITY IND LAMP CONT
24	SB	DONGLE LINK
25	LG	NATS ANTENNA AMP.
29	P	HAZARD SW
30	L	BK DOOR OPENER SW
31	W	DR DOOR UNLK SENS
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R	COMBI SW OUTPUT 2
36	P	COMBI SW OUTPUT 1
37	W	P POSITION
38	SB	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

Connector No.	M69
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA08FW-THA6-SA

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

Terminal No.	Color of Wire	Signal Name [Specification]
56	P	INT ROOM LAMP PWR SPLY
57	P	BAT FUSE
59	LG	PASS DOOR UNLK OUTPUT
60	V	TURN SIG LH OUTPUT
61	W	TURN SIG RH OUTPUT
63	BR	INT ROOM LAMP CONT
65	V	ALL DOOR LOCK OUTPUT
66	G	DR DOOR UNLK OUTPUT
67	B	GND
68	L	PW PWR SPLY (ON)
69	P	PW PWR SPLY (BAT)
70	Y	BAT (F/L)

JCLWA5502GB

# REAR WINDOW DEFOGGER SYSTEM

< WIRING DIAGRAM >

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Terminal No.	Color of Wire	Signal Name [Specification]
44	GR	
45	P	
46	R	
47	W	
48	L	
49	G	
50	L	
51	L	
54	W	
55	G	
56	BR	
57	P	
58	R	
60	Y	
61	GR	
62	SB	
63	Y	
64	G	
65	V	
66	P	
67	Y	
68	P	
69	BR	
71	Y	
72	L	
73	G	
74	L	
75	V	
76	R	
80	W	
81	L	
82	SB	
83	R	
84	BR	
85	R	
86	GR	
88	R	
89	W	
90	SHIELD	
91	Y	
92	BR	
93	W	
94	P	
95	V	
96	P	
97	G	
98	R	
99	LG	

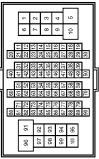
Connector No.	M89
Connector Name	WIRE TO WIRE
Connector Type	MOFPV-LC



Terminal No.	1
Color of Wire	L
Signal Name [Specification]	

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	
2	V	
3	GR	
4	LG	
6	W	
7	V	
8	P	
9	SB	
10	L	
11	LG	
12	W	
13	R	
14	Y	
15	R	
16	G	
17	BR	
19	G	
20	G	
21	P	
22	LG	
23	GR	
24	L	
25	Y	
26	G	
27	L	
28	V	
30	W	
31	SB	
32	LG	
33	V	
34	L	
35	SB	
38	LG	
39	GR	
40	Y	
41	R	
42	W	
43	SB	

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	THBOPV-CS1.6-TM4



Terminal No.	1
Color of Wire	GR
Signal Name [Specification]	

JCLWA5503GB

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORK FLOW

#### Work Flow

INFOID:000000006932658

#### DETAILED FLOW

#### 1.OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred) as much as possible when the customer brings the vehicle in.

>> GO TO 2.

#### 2.CHECK FOR DTC

Perform self diagnosis with CONSULT

Is any DTC detected?

YES-1 >> BCM: Refer to [BCS-55, "DTC Index"](#).

YES-2 >> IPDM E/R: Refer to [PCS-21, "DTC Index"](#).

YES-3 >> VCM: Refer to [EVC-84, "DTC Index"](#).

YES-4 >> A/C auto amp.: Refer to [HAC-40, "DTC Index"](#).

NO >> GO TO 3.

#### 3.REPRODUCE THE MALFUNCTION INFORMATION

Check the malfunction on the vehicle that the customer describes.

Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 4.

#### 4.IDENTIFY THE MALFUNCTIONING SYSTEM WITH "SYMPTOM DIAGNOSIS"

Use "Symptom diagnosis" from the symptom inspection result in step 3. Then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 5.

#### 5.IDENTIFY MALFUNCTIONING PARTS WITH "DTC/CIRCUIT DIAGNOSIS"

Perform the diagnosis with "Component diagnosis" of the applicable system.

>> GO TO 6.

#### 6.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 7.

#### 7.FINAL CHECK

Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 3.

Are all malfunctions corrected?

YES >> INSPECTION END

NO >> GO TO 4.



# REAR WINDOW DEFOGGER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

## DTC/CIRCUIT DIAGNOSIS

### REAR WINDOW DEFOGGER SWITCH

#### Component Function Check

INFOID:000000006932660

#### 1. CHECK REAR WINDOW DEFOGGER SWITCH OPERATION

Ⓜ With CONSULT

1. Select "REAR DEFOGGER" of "BCM" using CONSULT.
2. Select "REAR DEF SW" in "DATA MONITOR" mode.
3. Check "REAR DEF SW" indication under the following conditions.

Monitor item	Condition		Status
REAR DEF SW	Rear window defogger switch	Being Pressed	On
		Not Pressed	Off

Is the inspection result normal?

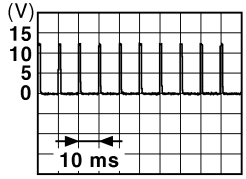
- YES >> Rear window defogger switch is OK.  
 NO >> Refer to [DEF-25, "Diagnosis Procedure"](#).

#### Diagnosis Procedure

INFOID:000000006932661

#### 1. CHECK REAR WINDOW DEFOGGER SWITCH OPERATION

1. Turn power switch OFF.
2. Disconnect A/C auto amp. connector.
3. Turn power switch ON.
4. Check signal between A/C auto amp. harness connector and ground using oscilloscope.

A/C auto amp. (+)		(-)	Voltage (V) (Approx.)
Connector	Terminal		
M68	15	Ground	 <p style="text-align: right;">JPMA0012GB</p>

Is the inspection result normal?

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

#### 2. CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

1. Turn power switch OFF.
2. Disconnect BCM connector.
3. Check continuity between BCM harness connector and A/C auto amp. harness connector.

BCM		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M68	15	M50	15	Existed

4. Check continuity between BCM harness connector and ground.

# REAR WINDOW DEFOGGER SWITCH

## < DTC/CIRCUIT DIAGNOSIS >

BCM		Ground	Continuity
Connector	Terminal		
M68	15	Ground	Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-77, "Removal and Installation"](#).

NO >> Repair or replace harness.

### 3. CHECK REAR WINDOW DEFOGGER SWITCH GROUND CIRCUIT

1. Disconnect A/C auto amp. connector.
2. Check continuity between A/C auto amp. harness connector and ground.

A/C auto amp.		Ground	Continuity
Connector	Terminal		
M50	10	Ground	Existed

Is the inspection result normal?

YES >> Replace A/C auto amp.

NO >> Repair or replace harness.

# REAR WINDOW DEFOGGER RELAY

< DTC/CIRCUIT DIAGNOSIS >

## REAR WINDOW DEFOGGER RELAY

### Component Function Check

INFOID:000000006932663

#### 1.CHECK FUNCTION

Ⓜ With CONSULT

1. Select "REAR DEFOGGER" in "ACTIVE TEST" of "IPDM E/R" using CONSULT.
2. Touch "On".
3. Check that the rear window heating wire is getting warmer.

Is the inspection result normal?

- YES >> Rear window defogger relay function is OK.  
NO >> Refer to [DEF-27. "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000006932664

#### 1.CHECK FUSE

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

Location	Fuse No.	Capacity
IPDM E/R	#41	15A
	#42	

Is the inspection result normal?

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

#### 2.CHECK IPDM E/R OUTPUT SIGNAL

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

(+) IPDM E/R		(-)	Condition	Voltage (V) (Approx.)	
Connector	Terminal			ON	OFF
E11	14	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace IPDM E/R.

#### 3.CHECK INTERMITTENT INCIDENT

Refer to [GI-51. "Intermittent Incident"](#).

>> INSPECTION END

# REAR WINDOW DEFOGGER

< DTC/CIRCUIT DIAGNOSIS >

## REAR WINDOW DEFOGGER

### Component Function Check

INFOID:000000006932666

#### 1.CHECK FUNCTION

Ⓟ With CONSULT

1. Select "REAR DEFOGGER" in "ACTIVE TEST" of "IPDM E/R" using CONSULT.
2. Touch "On".
3. Check that the rear window heating wire is getting warmer.

Is the inspection result normal?

- YES >> Rear window defogger is OK.  
NO >> Refer to [DEF-28, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000006932667

#### 1.CHECK REAR WINDOW DEFOGGER POWER SUPPLY CIRCUIT

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

(+)		(-)	Condition	Voltage (V) (Approx.)	
Connector	Terminal				
D201	1	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

- YES >> GO TO 2.  
NO >> GO TO 4.

#### 2.CHECK REAR WINDOW DEFOGGER GROUND CIRCUIT

1. Turn power switch OFF.
2. Check continuity between rear window defogger harness connector and ground.

Rear window defogger		Ground	Continuity
Connector	Terminal		
D110	2		Existed

Is the inspection result normal?

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

#### 3.CHECK FILAMENT

Refer to [DEF-39, "Inspection and Repair"](#).

Is the inspection result normal?

- YES >> GO TO 7.  
NO >> Repair filament.

#### 4.CHECK REAR WINDOW DEFOGGER POWER SUPPLY CIRCUIT 1

1. Turn power switch OFF.
2. Disconnect condenser connector.
3. Check continuity between condenser harness connector and rear window defogger harness connector.

# REAR WINDOW DEFOGGER

## < DTC/CIRCUIT DIAGNOSIS >

Condenser		Rear window defogger		Continuity
Connector	Terminal	Connector	Terminal	
D202	2	D201	1	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

### 5.CHECK REAR WINDOW DEFOGGER POWER SUPPLY CIRCUIT 2

1. Disconnect IPDM E/R connectors.
2. Check continuity between IPDM E/R harness connector and condenser harness connector.

IPDM E/R		Condenser		Continuity
Connector	Terminal	Connector	Terminal	
E11	14	D109	1	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

### 6.CHECK CONDENSER

Refer to [DEF-29, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace condenser.

### 7.CHECK INTERMITTENT INCIDENT

Refer to [GI-51, "Intermittent Incident"](#).

>> INSPECTION END

## Component Inspection

INFOID:000000006932668

### 1.CHECK CONDENSER

1. Turn power switch OFF.
2. Disconnect condenser connector.
3. Check continuity between condenser terminals.

Condenser		Continuity
Terminal	Terminal	
1	2	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace condenser.

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DEF

# DOOR MIRROR DEFOGGER

< DTC/CIRCUIT DIAGNOSIS >

## DOOR MIRROR DEFOGGER

### Component Function Check

INFOID:000000007539042

#### 1.CHECK DOOR MIRROR DEFOGGER

1. Select "REAR DEFOGGER" in "ACTIVE TEST" of "IPDM E/R" using CONSULT.
2. Touch "ON".
3. Check that both side door mirror glasses are getting warmer.

Is the inspection result normal?

- YES >> Door mirror defogger is OK.  
NO >> Refer to [DEF-30, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000007539043

#### 1.CHECK FUSE

1. Turn power switch OFF.
2. Check the following fuse.

Fuse No.	Capacity
#22	10A

Is the inspection result normal?

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

#### 2.CHECK DOOR MIRROR DEFOGGER CIRCUIT

1. Disconnect IPDM E/R connector and door mirror (driver side) connector.
2. Check continuity between IPDM E/R harness connector and door mirror (driver side) harness connector.

IPDM E/R		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
E11	14	D29	2	Existed

Is the inspection result normal?

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

#### 3.CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-51, "Intermittent Incident"](#).

>> INSPECTION END

# DRIVER SIDE DOOR MIRROR DEFOGGER

< DTC/CIRCUIT DIAGNOSIS >

## DRIVER SIDE DOOR MIRROR DEFOGGER

### Component Function Check

INFOID:000000007539044

#### 1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

1. Select "REAR DEFOGGER" in "ACTIVE TEST" of "IPDM E/R" using CONSULT.
2. Touch "ON".
3. Check that the driver side door mirror glass is getting warmer.

Is the inspection result normal?

- YES >> Driver side door mirror defogger is OK.  
NO >> Refer to [DEF-31. "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000007539045

#### 1.CHECK DOOR MIRROR DEFOGGER CIRCUIT

1. Turn power switch OFF.
2. Disconnect IPDM E/R connector and door mirror (driver side) connector.
3. Check continuity between IPDM E/R harness connector and door mirror (driver side) harness connector.

IPDM E/R		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
E11	14	D29	2	Existed

Is the inspection result normal?

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

#### 2.CHECK GROUND CIRCUIT

Check continuity between door mirror (driver side) harness connector and ground.

Door mirror (driver side)		Ground	Continuity
Connector	Terminal		
D29	3		Existed

Is the inspection result normal?

- YES >> Replace glass mirror (driver side).  
NO >> Repair or replace harness.

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DEF

# PASSENGER SIDE DOOR MIRROR DEFOGGER

< DTC/CIRCUIT DIAGNOSIS >

## PASSENGER SIDE DOOR MIRROR DEFOGGER

### Component Function Check

INFOID:000000007539046

#### 1.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

1. Select "REAR DEFOGGER" in "ACTIVE TEST" of "IPDM E/R" using CONSULT.
2. Touch "ON".
3. Check that the passenger side door mirror glass is getting warmer.

Is the inspection result normal?

- YES >> Passenger side door mirror defogger is OK.  
NO >> Refer to [DEF-32, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000007539047

#### 1.CHECK DOOR MIRROR DEFOGGER CIRCUIT

1. Turn power switch OFF.
2. Disconnect IPDM E/R connector and door mirror (passenger side) connector.
3. Check continuity between IPDM E/R harness connector and door mirror (passenger side) harness connector.

IPDM E/R		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
E11	14	D8	2	Existed

Is the inspection result normal?

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

#### 2.CHECK GROUND CIRCUIT

Check continuity between door mirror (passenger side) harness connector and ground.

Door mirror (passenger side)		Ground	Continuity
Connector	Terminal		
D8	3		Existed

Is the inspection result normal?

- YES >> Replace glass mirror (passenger side).  
NO >> Repair or replace harness.



# REAR WINDOW DEFOGGER DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS

### REAR WINDOW DEFOGGER DOES NOT OPERATE

#### Description

INFOID:000000007539402

For models without door mirror defogger.

#### Diagnosis Procedure

INFOID:000000007539403

#### 1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.

Refer to [DEF-25. "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

#### 2. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.

Refer to [DEF-27. "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace the malfunctioning parts.

#### 3. CHECK REAR WINDOW DEFOGGER

Check rear window defogger.

Refer to [DEF-28. "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace the malfunctioning parts.

#### 4. CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-51. "Intermittent Incident"](#).

NO >> GO TO 1.

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# REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE

< SYMPTOM DIAGNOSIS >

## REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE

### Description

INFOID:000000007539404

For models with door mirror defogger.

### Diagnosis Procedure

INFOID:000000007539405

#### 1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.

Refer to [DEF-25, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

#### 2. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.

Refer to [DEF-27, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace the malfunctioning parts.

#### 3. CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).

NO >> GO TO 1.

# REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH DOOR MIRROR DEFOGGERS OPERATE

< SYMPTOM DIAGNOSIS >

## REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH DOOR MIRROR DEFOGGERS OPERATE

### Description

INFOID:000000007539406

For models with door mirror defogger.

### Diagnosis Procedure

INFOID:000000007539407

#### 1.CHECK REAR WINDOW DEFOGGER

Check rear window defogger.

Refer to [DEF-28. "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

#### 2.CONFIRM THE OPERATION

Confirm the operation again

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-51. "Intermittent Incident"](#).

NO >> GO TO 1.

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# DOOR MIRROR DEFOGGER DOES NOT OPERATE BUT REAR WINDOW DEFOGGER OPERATES

< SYMPTOM DIAGNOSIS >

## DOOR MIRROR DEFOGGER DOES NOT OPERATE BUT REAR WINDOW DEFOGGER OPERATES

### BOTH SIDES

#### BOTH SIDES : Description

INFOID:000000007539408

Both door mirror defoggers do not operate.

#### BOTH SIDES : Diagnosis Procedure

INFOID:000000007539409

#### 1.CHECK DOOR MIRROR DEFOGGER

Check door mirror defogger.

Refer to [DEF-30, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

#### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).

NO >> GO TO 1.

### DRIVER SIDE

#### DRIVER SIDE : Description

INFOID:000000007539410

Driver side door mirror defogger does not operate but passenger side door mirror defogger operates.

#### DRIVER SIDE : Diagnosis Procedure

INFOID:000000007539411

#### 1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

Check driver side door mirror defogger.

Refer to [DEF-31, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

#### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).

NO >> GO TO 1.

### PASSENGER SIDE

#### PASSENGER SIDE : Description

INFOID:000000007539412

Passenger side door mirror defogger does not operate but driver side door mirror defogger operates.

#### PASSENGER SIDE : Diagnosis Procedure

INFOID:000000007539413

#### 1.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER.

Check passenger side door mirror defogger.

Refer to [DEF-32, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

# DOOR MIRROR DEFOGGER DOES NOT OPERATE BUT REAR WINDOW DEFOGGER OPERATES

< SYMPTOM DIAGNOSIS >

---

## 2.CONFIRM THE OPERATION

---

Confirm the operation again.

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-51. "Intermittent Incident"](#).
- NO >> GO TO 1.

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# REAR WINDOW DEFOGGER SWITCH DOES NOT LIGHT, BUT REAR WINDOW DEFOGGER OPERATES

< SYMPTOM DIAGNOSIS >

---

## REAR WINDOW DEFOGGER SWITCH DOES NOT LIGHT, BUT REAR WINDOW DEFOGGER OPERATES

### Diagnosis Procedure

INFOID:000000007539414

#### 1. REPLACE A/C AUTO AMP. (REAR WINDOW DEFOGGER SWITCH)

---

Replace A/C auto amp. (Rear window defogger switch).

>> GO TO 2.

#### 2. CONFIRM THE OPERATION

---

Confirm the operation again.

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).
- NO >> GO TO 1.

# FILAMENT

< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

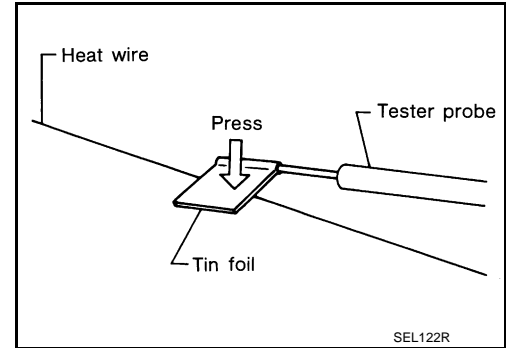
### FILAMENT

#### Inspection and Repair

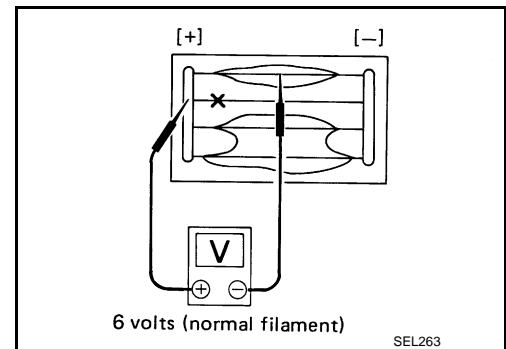
INFOID:000000006932672

#### INSPECTION

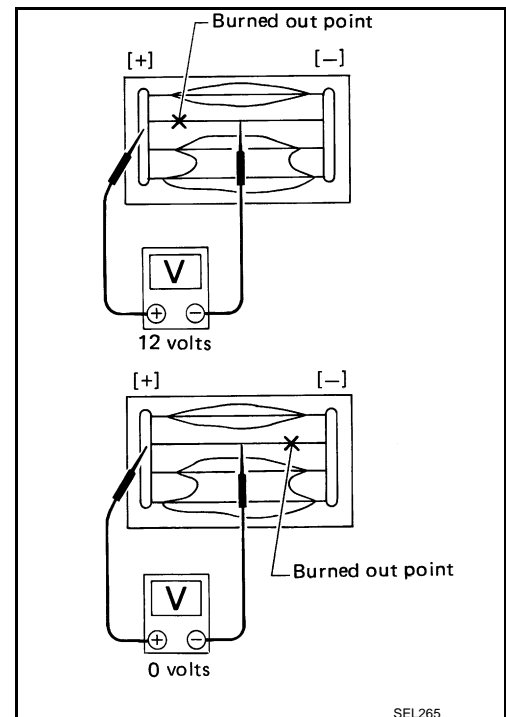
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



2. Attach probe circuit tester (in Volt range) to middle portion of each filament.



3. If a filament is burned out, circuit tester registers 0 or battery voltage.
4. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.



#### REPAIR

##### REPAIR EQUIPMENT

- Conductive silver composition (Dupont No. 4817 or equivalent)

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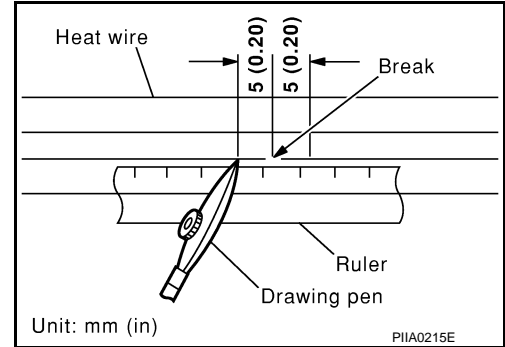
# FILAMENT

## < REMOVAL AND INSTALLATION >

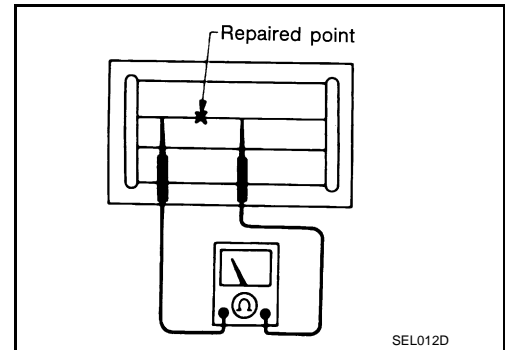
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

### REPAIRING PROCEDURE

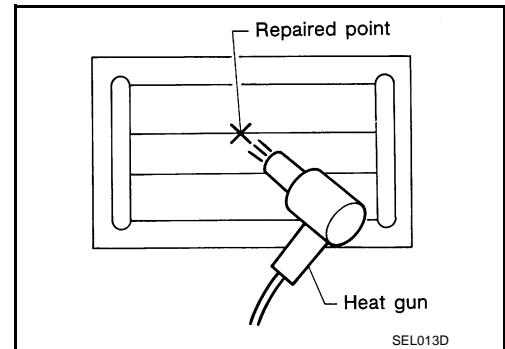
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen. Shake silver composition container before use.
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited. Do not touch repaired area while test is being conducted.



5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet. If a heat gun is not available, let the repaired area dry for 24 hours.





# CONDENSER

< REMOVAL AND INSTALLATION >

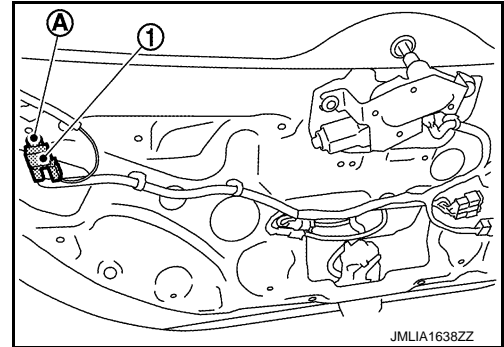
## CONDENSER

### Removal and Installation

INFOID:000000006932674

#### REMOVAL

1. Remove the back door lower finisher.  
Refer to [INT-43, "BACK DOOR LOWER FINISHER : Removal and Installation"](#)
2. Remove bolt (A), and then remove condenser (1) from the vehicle body.



#### INSTALLATION

Install in the reverse order of removal.

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