SECTION DEF
DEFOGGER

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011323466

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

WARNING:

Always observe the following items for preventing accidental activation.

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

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

WARNING:

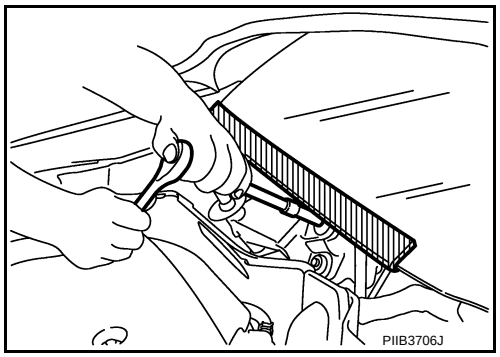
Always observe the following items for preventing accidental activation.

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

Precaution for Procedure without Cowl Top Cover

INFOID:0000000011559082

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



Precautions For Xenon Headlamp Service

INFOID:0000000011323467

WARNING:

Comply with the following warnings to prevent any serious accident.

- **Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.**
- **Never work with wet hands.**
- **Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector.**

(Turning it ON outside the lamp case may cause fire or visual impairments.)
- **Never touch the bulb glass immediately after turning it OFF. It is extremely hot.**

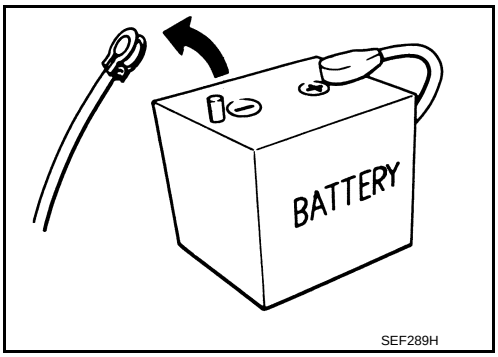
CAUTION:

Comply with the following cautions to prevent any error and malfunction.
- **Install the xenon bulb securely. (Insufficient bulb socket installation may melt the bulb, the connector, the housing, etc. by high-voltage leakage or corona discharge.)**
- **Never perform HID circuit inspection with a tester.**
- **Never touch the xenon bulb glass with hands. Never put oil and grease on it.**
- **Dispose of the used xenon bulb after packing it in thick vinyl without breaking it.**
- **Never wipe out dirt and contamination with organic solvent (thinner, gasoline, etc.).**

Precautions for Removing Battery Terminal

INFOID:0000000011323468

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



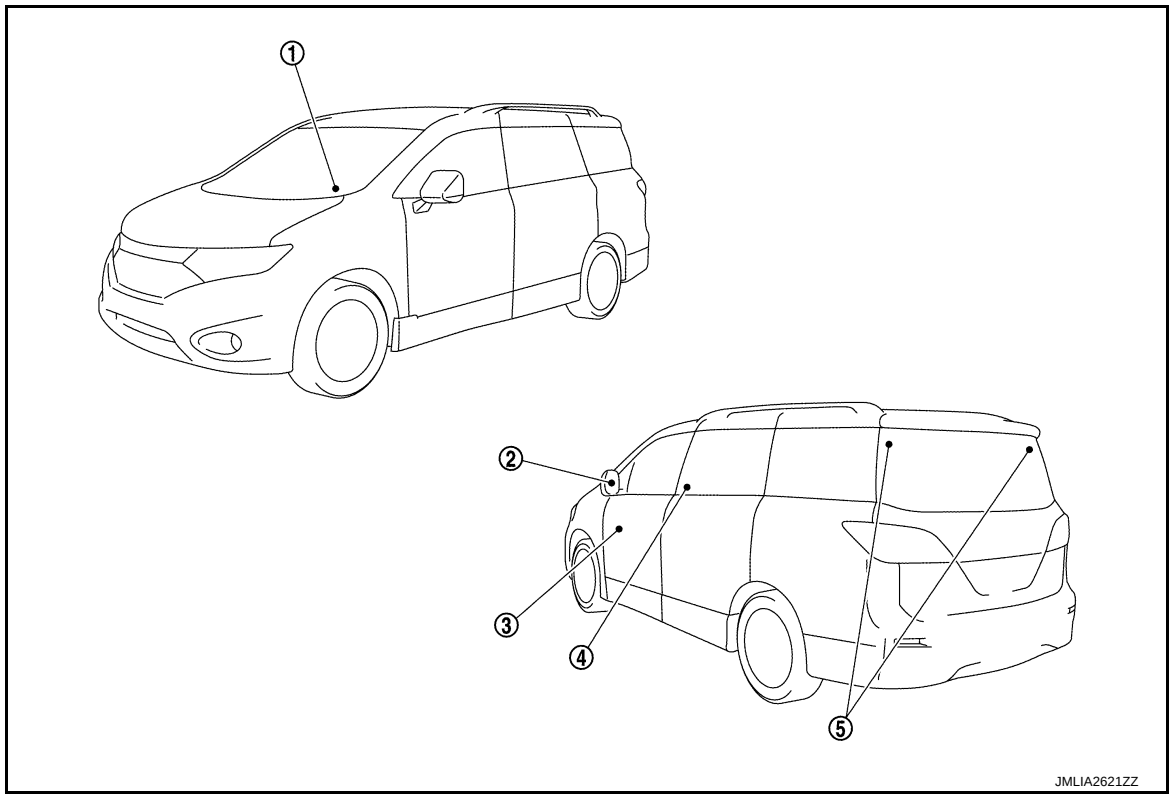
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000011323469



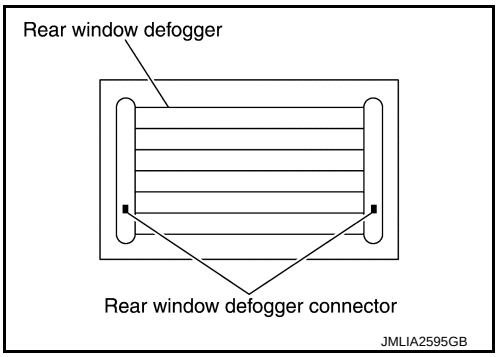
No.	Component	Function
1.	BCM	• Detects rear window defogger switch signal then turns rear window defogger relay ON. • Performs the timer control of rear window defogger and door mirror defogger*3. Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
2.	Door mirror defogger*3	Refer to DEF-6, "Door mirror defogger".
3.	Rear window defogger relay (built in fuse block J/B)	Operates the rear window defogger and door mirror defogger*3 with BCM control.
4.	• A/C auto amp.*1 • A/C amp.*2 (Rear window defogger switch)	• The rear window defogger switch is installed. • Rear window defogger and door mirror defogger*3 are operated by turning the rear window defogger switch ON. • The indicator lamp in the rear window defogger switch illuminates when the rear window defogger is operating. Refer to HAC-8, "Component Parts Location" for detailed installation location.
5.	Rear window defogger connector (Rear window defogger)	Refer to DEF-6, "Rear window defogger".

*1: With auto A/C
*2: With manual A/C
*3: For models with door mirror defogger

Rear window defogger

INFOID:0000000011323470

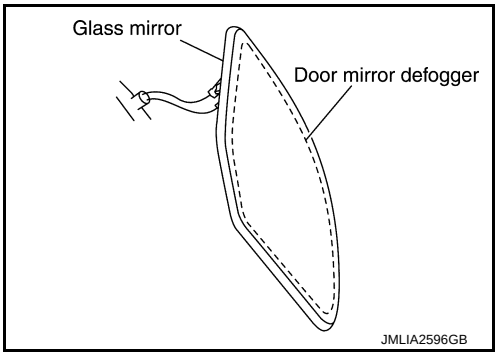
Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window from fogging up.



Door mirror defogger

INFOID:0000000011323471

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

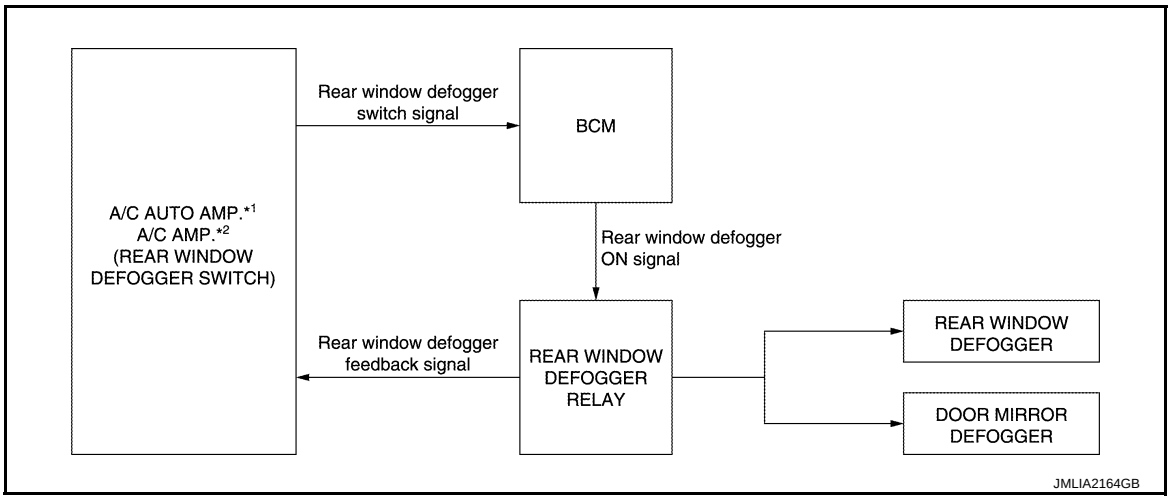


SYSTEM

System Description

INFOID:0000000011323472

SYSTEM DIAGRAM



*1: With auto A/C

*2: With manual A/C

OPERATION DESCRIPTION

- When BCM receives rear window defogger switch signal, BCM transmits rear window defogger ON signal to rear window defogger relay (integrated in fuse block J/B) for approximately 15 minutes.
- When rear window defogger relay (integrated in fuse block J/B) turns ON, power supply is supplied to rear window defogger and door mirror defogger (For models with door mirror defogger).
- When rear window defogger and door mirror defogger (For models with door mirror defogger) are operated, rear window defogger feedback signal is transmitted to A/C auto amp.*1 or A/C amp.*2, and then indicator lamp of rear window defogger switch is turned ON.

*1: With auto A/C

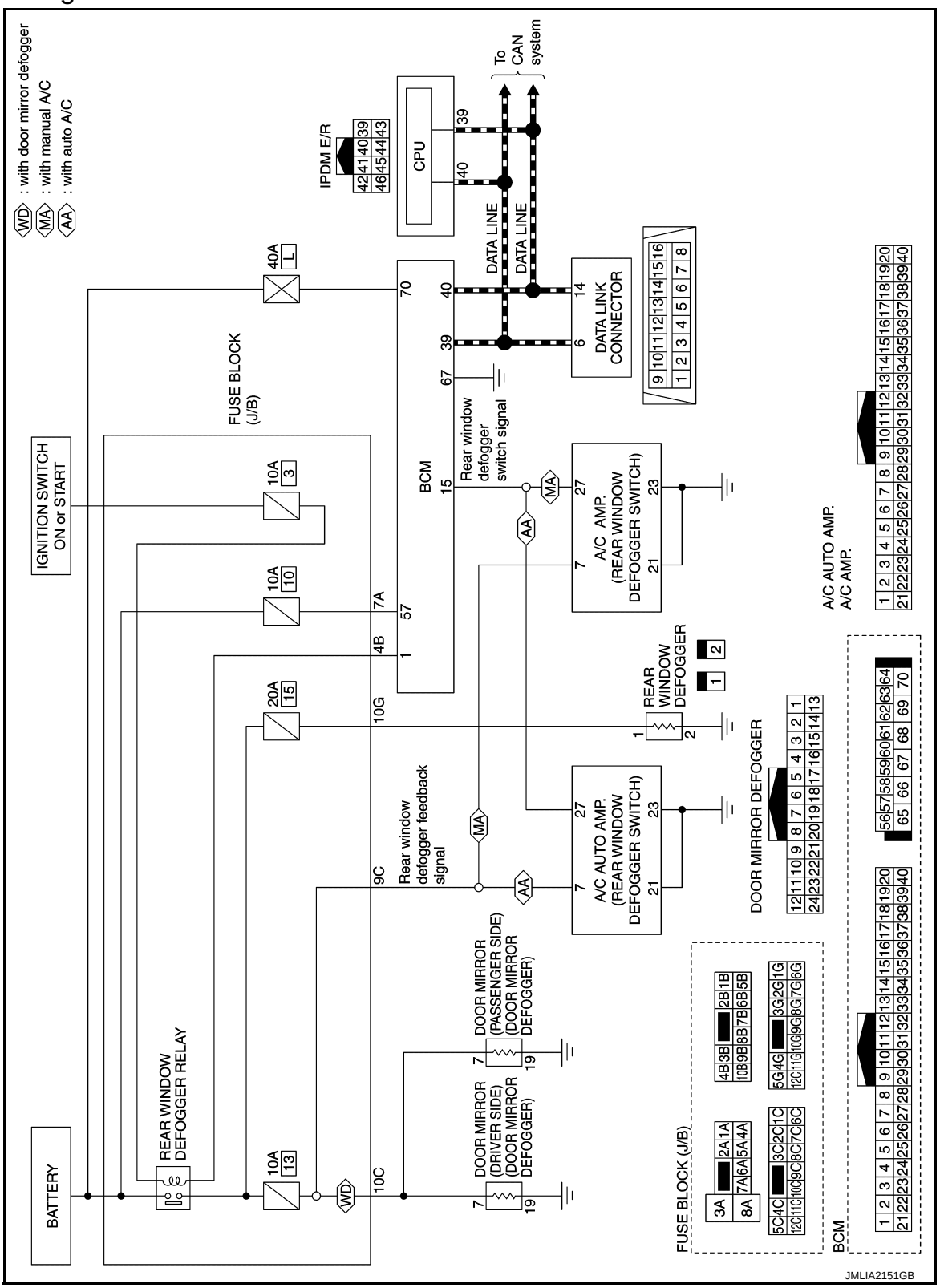
*2: With manual A/C

TIMER FUNCTION

- BCM transmits rear window defogger ON signal to rear window defogger relay (integrated in fuse block J/B) for approximately 15 minutes when rear window defogger switch is turned ON while ignition switch is ON.
- Timer is cancelled when rear window defogger switch is pressed again during timer operation. BCM stops the output of rear window defogger ON signal. The same reaction also occurs during timer operation when ignition switch is turned OFF.

Circuit Diagram

INFOID:0000000011323473



DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000011559080

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

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

NOTE:

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

FREEZE FRAME DATA (FFD)

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

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

NOTE:

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

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

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

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

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

REAR WINDOW DEFOGGER

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

INFOID:0000000011323475

DATA MONITOR

NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor Item	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	Rear window defogger operates when ON on CONSULT screen is touched.

ECU DIAGNOSIS INFORMATION

BCM

List of ECU Reference

INFOID:0000000011323476

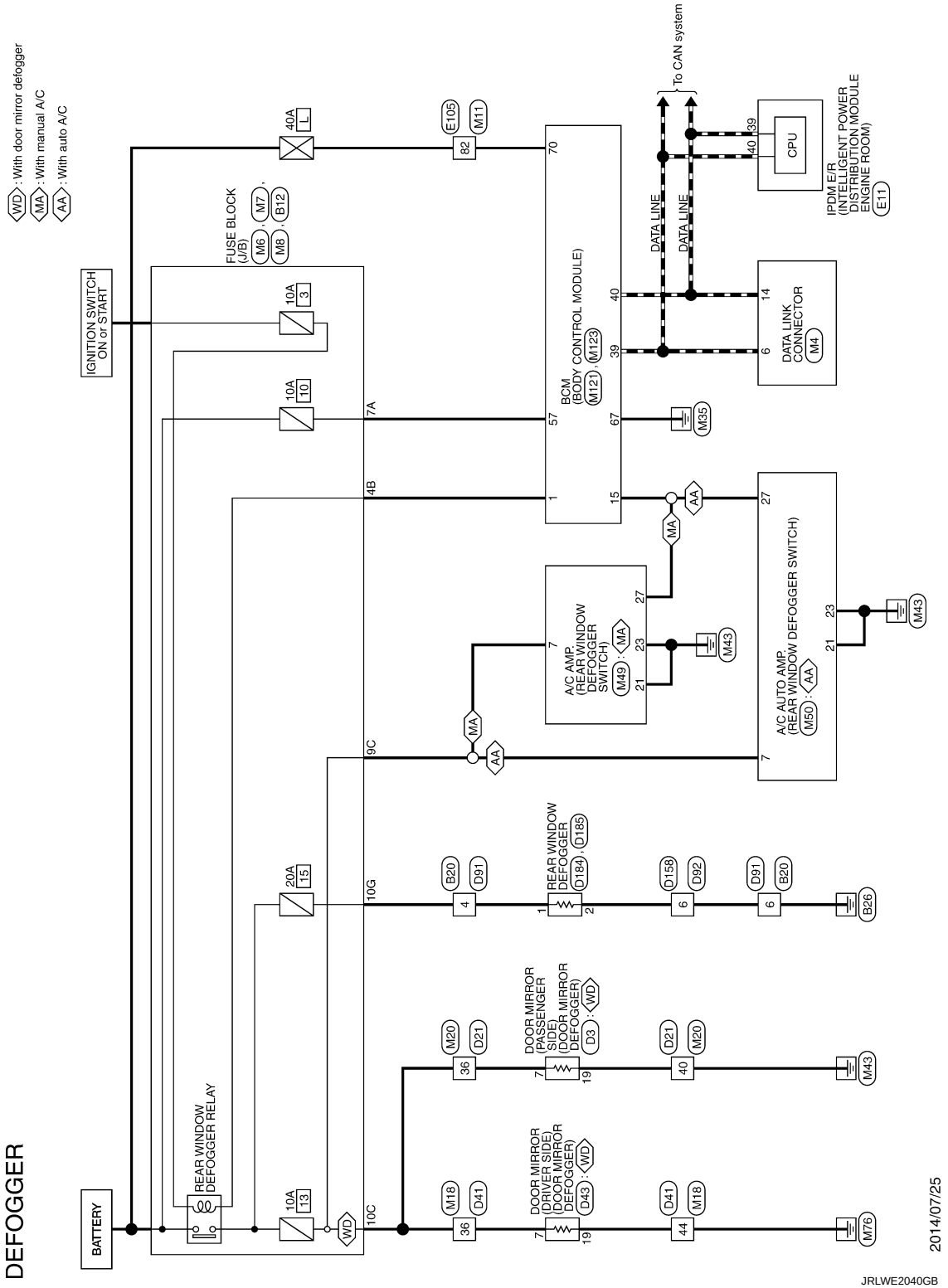
ECU	Reference
BCM	BCS-40, "Reference Value"
	BCS-62, "Fail-safe"
	BCS-62, "DTC Inspection Priority Chart"
	BCS-63, "DTC Index"

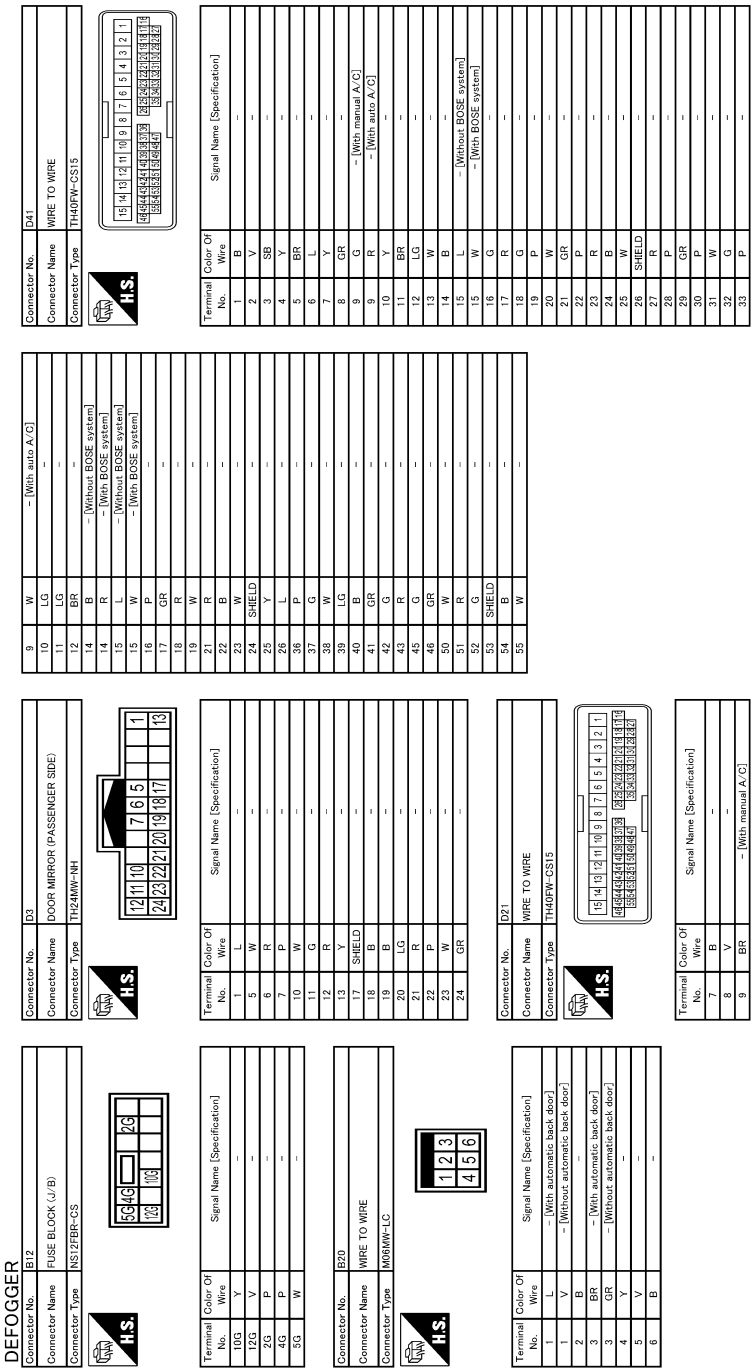
WIRING DIAGRAM

REAR WINDOW DEFOGGER SYSTEM

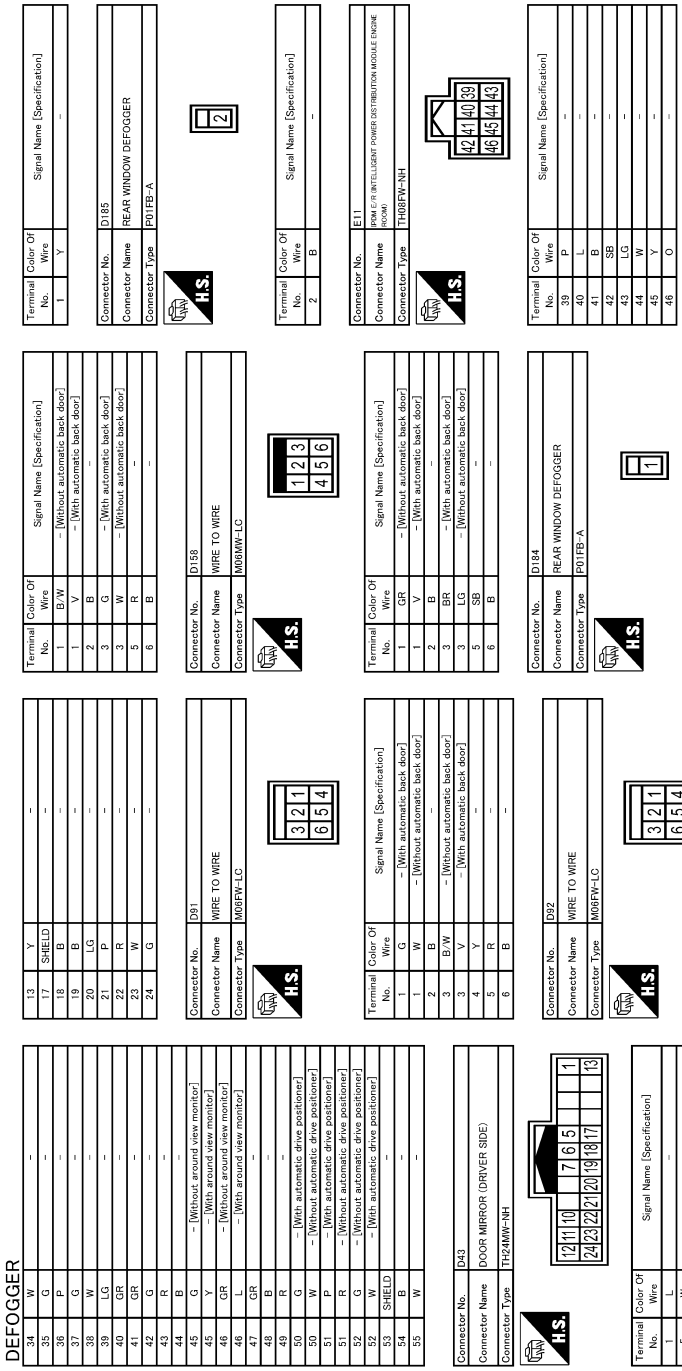
Wiring Diagram

INFOID:0000000011323477

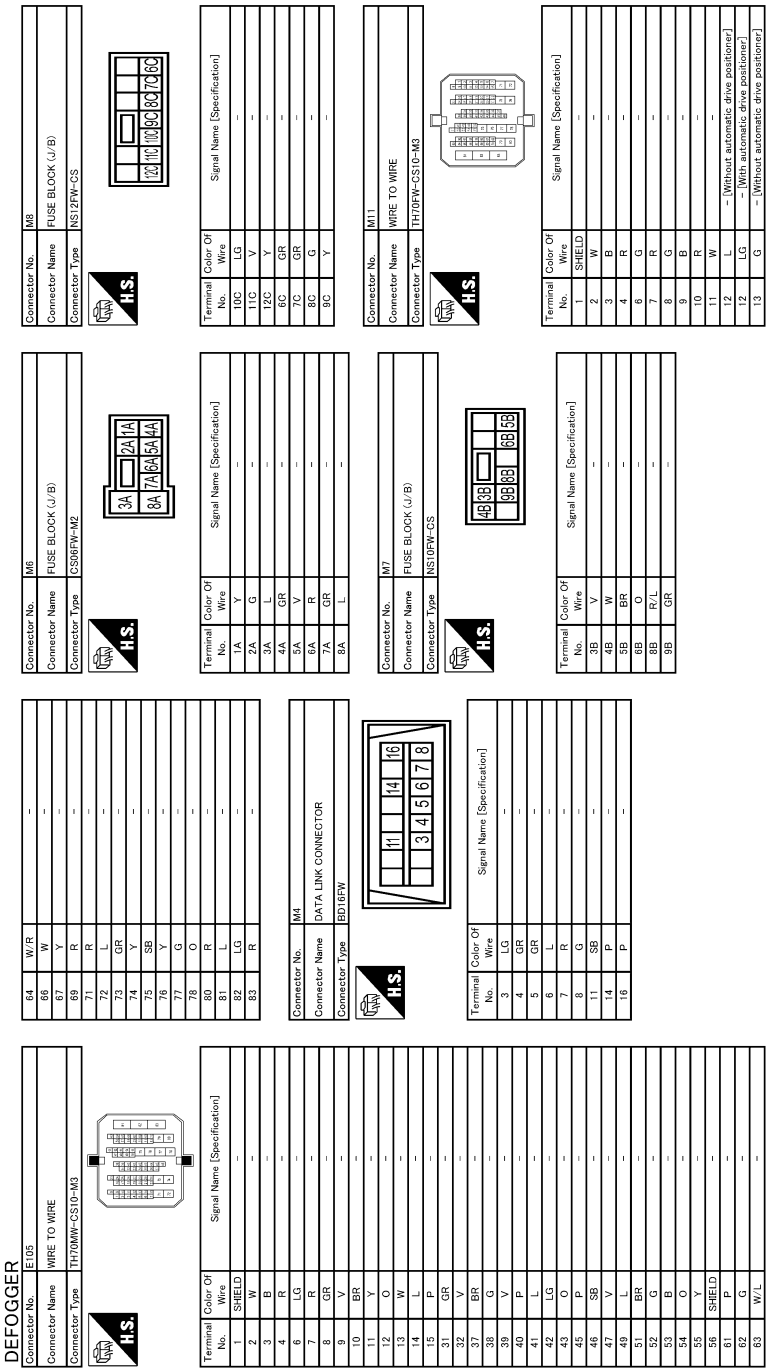




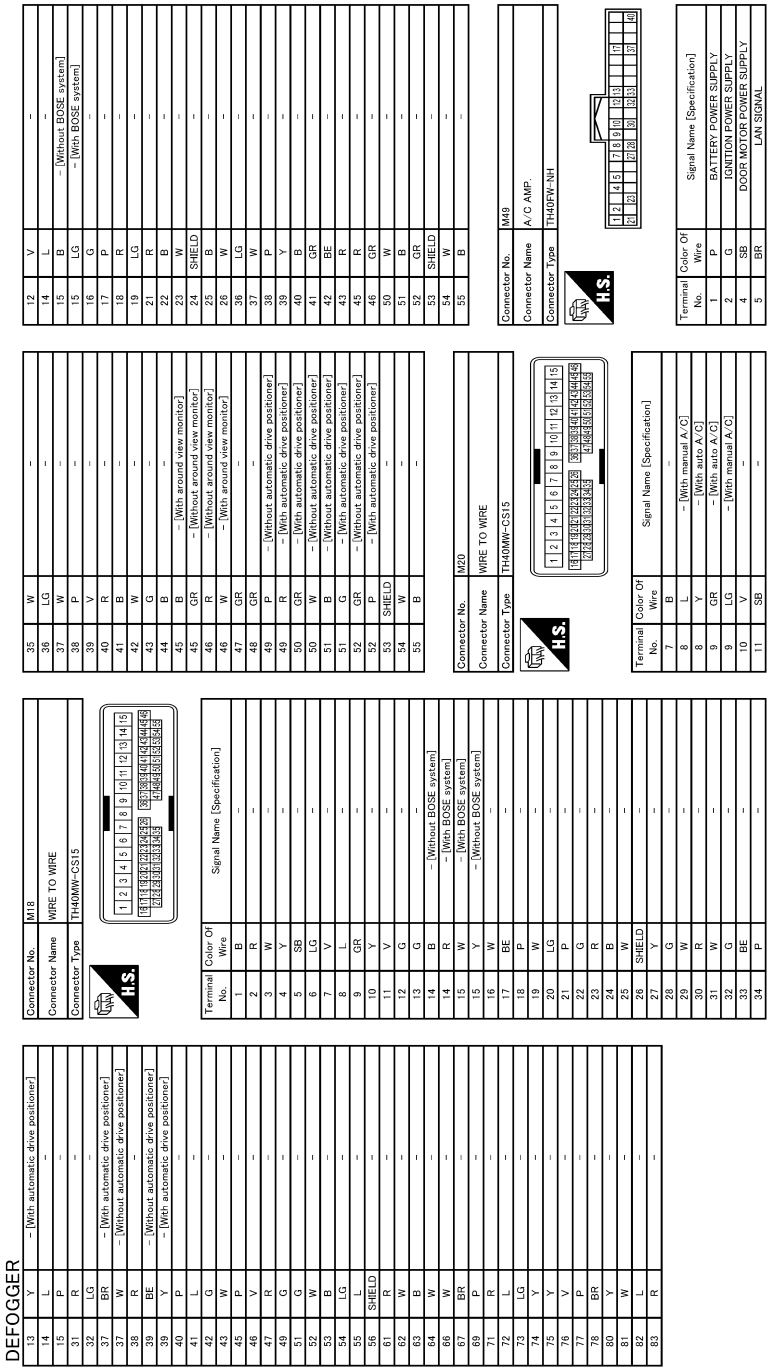
JRLWE2041GB



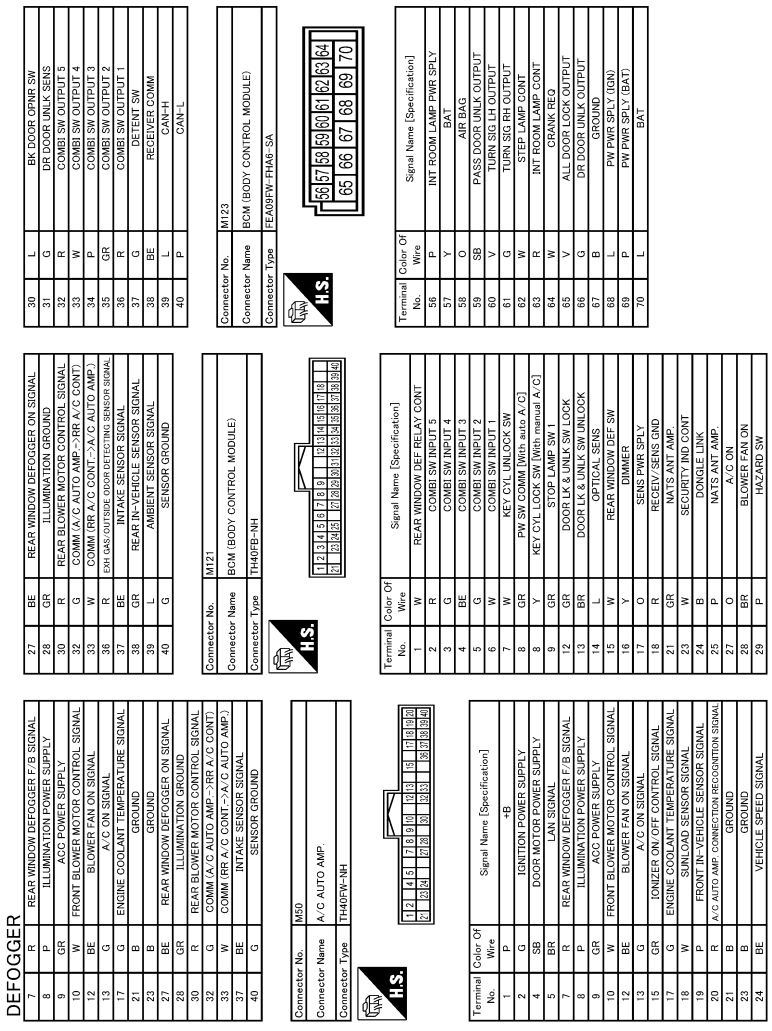
JRLWE2042GB



JRLWE2043GB



JRLWE2044GB



JRLWE2045GB

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000011323478

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 >> BCM: Refer to BCS-63, "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 “COMPONENT 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.

DTC/CIRCUIT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH WITH AUTO A/C

WITH AUTO A/C : Component Function Check

INFOID:0000000011323479

1.CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

1. Perform (“REAR DEF SW”) in BCM - REAR DEFOGGER “DATA MONITOR” mode by using CONSULT.
2. Operate rear window defogger switch and check Monitor Status on CONSULT screen.

Monitor Item	Condition		Monitor Status
REAR DEF SW	Rear window defogger switch	Pressed	On
		Released	Off

Is the inspection result normal?

YES >> Rear window defogger switch function is OK.
NO >> Refer to DEF-20, "WITH AUTO A/C : Diagnosis Procedure".

WITH AUTO A/C : Diagnosis Procedure

INFOID:0000000011323480

1.CHECK AUTO A/C

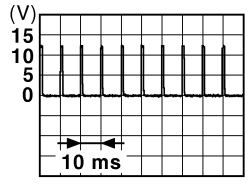
Check the operating condition of auto A/C

Does auto A/C operate normally?

YES >> GO TO 2.
NO >> Perform auto A/C diagnosis. Refer to HAC-73, "Work Flow".

2.CHECK BCM OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect A/C auto amp. connector.
3. Check voltage between A/C auto amp. harness connector and ground by oscilloscope.

(+)		(-)	Voltage (Approx.)
A/C auto amp.			
Connector	Terminal		
M50	27	Ground	

JPMIA0012GB

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 3.

3.CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

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

BCM		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M121	15	M50	27	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M121	15		Not existed

Is the inspection result normal?

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

4. REPLACE A/C AUTO AMP.

1. Turn ignition switch OFF.
2. Replace A/C auto amp.
3. Turn ignition switch ON.
4. Operate rear window defogger switch and check the operating condition.

Is the inspection result normal?

YES >> INSPECTION END.
NO >> GO TO 5.

5. CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

Is the inspection result normal?

>> INSPECTION END

WITH MANUAL A/C

WITH MANUAL A/C : Component Function Check

INFOID:0000000011323481

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

1. Perform (“REAR DEF SW”) in BCM - REAR DEFOGGER “DATA MONITOR” mode by using CONSULT.
2. Operate rear window defogger switch and check Monitor Status on CONSULT screen.

Monitor Item	Condition		Monitor Status
REAR DEF SW	Rear window defogger switch	Pressed	On
		Released	Off

Is the inspection result normal?

YES >> Rear window defogger switch function is OK.
NO >> Refer to DEF-21, "WITH MANUAL A/C : Diagnosis Procedure".

WITH MANUAL A/C : Diagnosis Procedure

INFOID:0000000011323482

1. CHECK MANUAL A/C

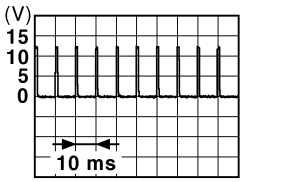
Check the operating condition of manual A/C

Does manual A/C operate normally?

YES >> GO TO 2.
NO >> Perform manual A/C diagnosis. Refer to HAC-191, "Work Flow".

2. CHECK BCM OUTPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect A/C amp. connector.
3. Check voltage between A/C amp. harness connector and ground by oscilloscope.

(+)		(-)	Voltage (Approx.)
A/C amp.			
Connector	Terminal		
M49	27	Ground	 JPMIA0012GB

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 3.

3.CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

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

BCM		A/C amp.		Continuity
Connector	Terminal	Connector	Terminal	
M121	15	M49	27	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M121	15		Not existed

Is the inspection result normal?

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

4.REPLACE A/C AMP.

1. Turn ignition switch OFF.
2. Replace A/C amp.
3. Turn ignition switch ON.
4. Operate rear window defogger switch and check the operating condition.

Is the inspection result normal?

YES >> INSPECTION END.
NO >> GO TO 5.

5.CHECK INTERMITTENT INCIDENT

Refer to GI-42, "Intermittent Incident".

Is the inspection result normal?

>> INSPECTION END

REAR WINDOW DEFOGGER RELAY

Component Function Check

INFOID:0000000011323483

1.CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

1. Perform BCM Active Test (“REAR DEFOGGER”) with 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 power supply circuit function is OK.
NO >> Refer to DEF-23, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011323484

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10A fuse [No.3, located in fuse block (J/B)].

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 REAR WINDOW DEFOGGER CIRCUIT 1

1. Turn ignition switch ON.
2. Check voltage between BCM harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M121	1	Ground	Rear window defogger switch	ON	0
				OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.
Fixed at 0 V>>GO TO 3.
Fixed at 9 – 16 V >>Replace BCM. Refer to BCS-98, "Removal and Installation".

3.CHECK REAR WINDOW DEFOGGER CIRCUIT 2

1. Turn ignition switch OFF.
2. Disconnect BCM connector and fuse block (J/B).
3. Check continuity between BCM harness connector and fuse block (J/B) harness connector.

BCM		Fuse block (J/B)		Continuity
Connector	Terminal	Connector	Terminal	
M121	1	M7	4B	Existed

Is the inspection result normal?

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

4.CHECK REAR WINDOW DEFOGGER RELAY 1

Check rear window defogger relay.
Refer to DEF-24, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace rear window defogger relay.

5.CHECK FUSE BLOCK (J/B)

1. Install the rear window defogger relay.
2. Turn ignition switch ON.
3. Check voltage between fuse block (J/B) connector (fuse block side) and ground.

(+)		(–)	Voltage (V) (Approx.)
Fuse block (J/B)			
Connector	Terminal		
M7	4B	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace fuse block (J/B).

6.CHECK REAR WINDOW DEFOGGER RELAY 2

Check rear window defogger relay.
Refer to DEF-24, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace rear window defogger relay.

7.CHECK INTERMITTENT INCIDENT

Check intermittent incident.
Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

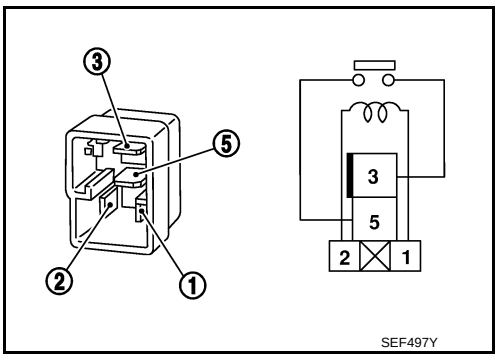
Component Inspection

INFOID:0000000011323485

1.CHECK REAR WINDOW DEFOGGER RELAY

1. Turn ignition switch OFF.
2. Disconnect rear window defogger relay.
3. Check rear window defogger relay.

Rear window defogger relay		Condition	Continuity
Terminal			
3	5	12 V direct current supply between terminals 1 and 2	Existed
		No current supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace rear window defogger relay.

REAR WINDOW DEFOGGER

Component Function Check

INFOID:0000000011323486

1.CHECK REAR WINDOW DEFOGGER

1. Perform Active Test (“REAR DEFOGGER”) with 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-25, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011323487

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 20A fuse [No.15, located in fuse block (J/B)].

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 POWER SUPPLY CIRCUIT

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

(+)		(-)	Condition		Voltage (V) (Approx.)
Rear window defogger					
Connector	Terminal				
D184	1	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 4.

3.CHECK GROUND CIRCUIT

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

Rear window defogger		Ground	Continuity
Connector	Terminal		
D185	2		Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness or connector between rear window defogger and ground.

4.CHECK REAR WINDOW DEFOGGER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect fuse block (J/B) harness connector.
3. Check continuity between fuse block (J/B) harness connector and rear window defogger harness connector.

Fuse block (J/B)		Rear window defogger		Continuity
Connector	Terminal	Connector	Terminal	
B12	10G	D184	1	Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness or connector between fuse block (J/B) and rear window defogger.

5.CHECK FUSE BLOCK (J/B)

1. Turn ignition switch ON.
2. Check voltage between fuse block (J/B) connector (fuse block side) and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
Fuse block (J/B)					
Connector	Terminal				
B12	10G	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace fuse block (J/B).

6.CHECK FILAMENT

Check the filament for damage or blown.
Refer to DEF-39, "Inspection and Repair".

Is the inspection result normal?

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

7.CHECK INTERMITTENT INCIDENT

Check intermittent incident.
Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

DOOR MIRROR DEFOGGER

Component Function Check

INFOID:0000000011323488

1.CHECK DOOR MIRROR DEFOGGER

1. Perform Active Test (“REAR DEFOGGER”) with CONSULT.
2. Touch “ON”.
3. Check that both side door mirror glasses are getting warmer.

Is the inspection result normal?

YES >> Door mirror defoggers are OK.
NO >> Refer to DEF-27, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011323489

1.CHECK DOOR MIRROR DEFOGGER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect door mirror (both sides) connectors.
3. Turn ignition switch ON.
4. Check voltage between door mirror (driver side) connector and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
Door mirror (driver side)					
Connector	Terminal				
D43	7	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

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

2.CHECK FUSE BLOCK (J/B)

1. Turn ignition switch OFF.
2. Disconnect fuse block (J/B) harness connector.
3. Turn ignition switch ON.
4. Check voltage between fuse block (J/B) connector (fuse block side) and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
Fuse block (J/B)					
Connector	Terminal				
M8	10C	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> Repair or replace harness or connector between fuse block (J/B) and door mirror (driver side).
NO >> Replace fuse block (J/B).

3.CHECK INTERMITTENT INCIDENT

Check intermittent incident.
Refer to GI-42, "Intermittent Incident".

Is the inspection result normal?

>> INSPECTION END

DRIVER SIDE DOOR MIRROR DEFOGGER

Component Function Check

INFOID:0000000011323490

1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

1. Perform Active Test (“REAR DEFOGGER”) with 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-28, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011323491

1.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect door mirror (driver side) connector.
3. Turn ignition switch ON.
4. Check voltage between door mirror (driver side) harness connector and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
Door mirror (driver side)					
Connector	Terminal				
D43	7	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness or connector between fuse block (J/B) and door mirror (driver side).

2.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between door mirror (driver side) harness connector and ground.

Door mirror (driver side)		Ground	Continuity
Connector	Terminal		
D43	19		Existed

Is the inspection result normal?

YES >> Replace glass mirror (driver side).
NO >> Repair or replace harness or connector between door mirror (driver side) and ground.

PASSENGER SIDE DOOR MIRROR DEFOGGER

Component Function Check

INFOID:0000000011323492

1.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

1. Perform Active Test (“REAR DEFOGGER”) with 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-29, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011323493

1.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect door mirror (passenger side) connector.
3. Turn ignition switch ON.
4. Check voltage between door mirror (passenger side) harness connector and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
Door mirror (Passenger side)					
Connector	Terminal				
D3	7	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace harness or connector between fuse block (J/B) and door mirror (passenger side).

2.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between door mirror (passenger side) harness connector and ground.

Door mirror (passenger side)		Ground	Continuity
Connector	Terminal		
D3	19		Existed

Is the inspection result normal?

YES >> Replace glass mirror (passenger side).
NO >> Repair or replace harness or connector between door mirror (passenger side) and ground.

REAR WINDOW DEFOGGER FEEDBACK SIGNAL WITH AUTO A/C

WITH AUTO A/C : Component Function Check

INFOID:0000000011323494

1.CHECK REAR WINDOW DEFOGGER FEEDBACK SIGNAL

Check that the indicator lamp of rear window defogger switch is illuminated when turning the rear window defogger switch ON.

Is the inspection result normal?

YES >> Rear window defogger feedback signal is OK.
NO >> Refer to DEF-30, "WITH AUTO A/C : Diagnosis Procedure".

WITH AUTO A/C : Diagnosis Procedure

INFOID:0000000011323495

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10A fuse [No.13, located in fuse block (J/B)]

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 REAR WINDOW DEFOGGER FEEDBACK SIGNAL

1. Disconnect A/C auto amp. connector.
2. Turn ignition switch ON.
3. Check voltage between A/C auto amp. harness connector and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
A/C auto amp.					
Connector	Terminal				
M50	7	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> Replace A/C auto amp.
NO >> GO TO 3.

3.CHECK REAR WINDOW DEFOGGER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect fuse block (J/B) connector.
3. Check continuity between fuse block (J/B) harness connector and A/C auto amp. harness connector.

Fuse block (J/B)		A/C auto amp.		Continuity
Connector	Terminal	Connector	Terminal	
M8	9C	M50	7	Existed

4. Check continuity between fuse block (J/B) and ground.

Fuse block (J/B)		Ground	Continuity
Connector	Terminal		
M8	9C		Not existed

Is the inspection result normal?

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

4.CHECK FUSE BLOCK (J/B)

1. Turn ignition switch ON.
2. Check voltage between fuse block (J/B) connector (fuse block side) and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
Fuse block (J/B)					
Connector	Terminal				
M8	9C	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace fuse block (J/B).

5.CHECK INTERMITTENT INCIDENT

Check intermittent incident.
Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

WITH MANUAL A/C

WITH MANUAL A/C : Component Function Check

INFOID:0000000011323496

1.CHECK REAR WINDOW DEFOGGER FEEDBACK SIGNAL

Check that the indicator lamp of rear window defogger switch is illuminated when turning the rear window defogger switch ON.

Is the inspection result normal?

YES >> Rear window defogger feedback signal is OK.
NO >> Refer to DEF-31, "WITH MANUAL A/C : Diagnosis Procedure".

WITH MANUAL A/C : Diagnosis Procedure

INFOID:0000000011323497

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 10A fuse [No.13, located in fuse block (J/B)]

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 REAR WINDOW DEFOGGER FEEDBACK SIGNAL

1. Disconnect A/C amp. connector.
2. Turn ignition switch ON.
3. Check voltage between A/C amp. harness connector and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
A/C amp.					
Connector	Terminal				
M49	7	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> Replace A/C amp.
NO >> GO TO 3.

3.CHECK REAR WINDOW DEFOGGER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect fuse block (J/B) connector.

3. Check continuity between fuse block (J/B) harness connector and A/C amp. harness connector.

Fuse block (J/B)		A/C amp.		Continuity
Connector	Terminal	Connector	Terminal	
M8	9C	M49	7	Existed

4. Check continuity between fuse block (J/B) and ground.

Fuse block (J/B)		Ground	Continuity
Connector	Terminal		
M8	9C		Not existed

Is the inspection result normal?

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

4. CHECK FUSE BLOCK (J/B)

1. Turn ignition switch ON.
2. Check voltage between fuse block (J/B) connector (fuse block side) and ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
Fuse block (J/B)					
Connector	Terminal				
M8	9C	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace fuse block (J/B).

5. CHECK INTERMITTENT INCIDENT

Check intermittent incident.
Refer to GI-42, "Intermittent Incident".

>> INSPECTION END

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER DOES NOT OPERATE

Description

INFOID:0000000011323498

For models without door mirror defogger.

Diagnosis Procedure

INFOID:0000000011323499

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.
Refer to DEF-20, "WITH AUTO A/C : Component Function Check" (with auto A/C) or DEF-21, "WITH MANUAL A/C : Component Function Check" (with manual A/C).

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-23, "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-25, "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-42, "Intermittent Incident".
NO >> GO TO 1.

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGERS DO NOT OPERATE

Description

INFOID:0000000011323500

For models with door mirror defogger.

Diagnosis Procedure

INFOID:0000000011323501

1.CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.
Refer to DEF-20, "WITH AUTO A/C : Component Function Check" (with auto A/C) or DEF-21, "WITH MANUAL A/C : Component Function Check" (with manual A/C).

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-23, "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-25, "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-42, "Intermittent Incident".
NO >> GO TO 1.

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

Description

INFOID:0000000011323502

For models with door mirror defogger.

Diagnosis Procedure

INFOID:0000000011323503

1.CHECK REAR WINDOW DEFOGGER

Check rear window defogger.
Refer to DEF-25, "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-42, "Intermittent Incident".
NO >> GO TO 1.

DOOR MIRROR DEFOGGER DOES NOT OPERATE

BOTH SIDES

BOTH SIDES : Description

INFOID:0000000011323504

Driver side and passenger side door mirror defoggers do not operate.

BOTH SIDES : Diagnosis Procedure

INFOID:0000000011323505

1.CHECK DOOR MIRROR DEFOGGER

Check door mirror defogger.
Refer to DEF-27, "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-42, "Intermittent Incident".
NO >> GO TO 1.

DRIVER SIDE

DRIVER SIDE : Description

INFOID:0000000011323506

Driver side door mirror defogger does not operate.

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000011323507

1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

Check driver side door mirror 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-42, "Intermittent Incident".
NO >> GO TO 1.

PASSENGER SIDE

PASSENGER SIDE : Description

INFOID:0000000011323508

Passenger side door mirror defogger does not operate.

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000011323509

1.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER.

Check passenger side door mirror defogger.
Refer to DEF-29, "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-42, "Intermittent Incident".
NO >> GO TO 1.

REAR WINDOW DEFOGGER INDICATOR DOES NOT ILLUMINATE

Diagnosis Procedure

INFOID:0000000011323510

1.CHECK REAR WINDOW DEFOGGER FEEDBACK SIGNAL

Check rear window defogger feedback signal.
Refer to DEF-30, "WITH AUTO A/C : Component Function Check" (With auto A/C) or DEF-31, "WITH MANUAL A/C : Component Function Check" (With manual A/C).

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-42, "Intermittent Incident".
NO >> GO TO 1.

REMOVAL AND INSTALLATION

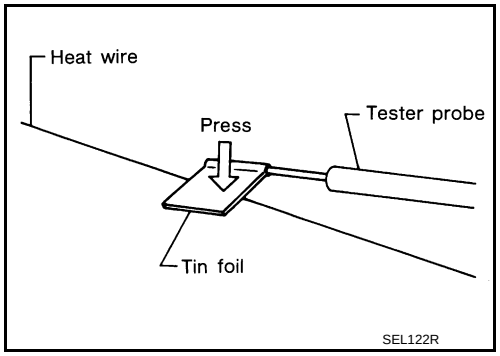
FILAMENT

Inspection and Repair

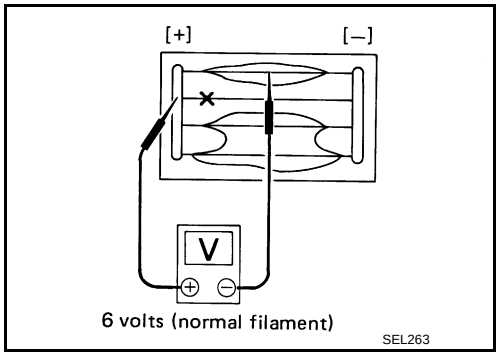
INFOID:0000000011323511

INSPECTION

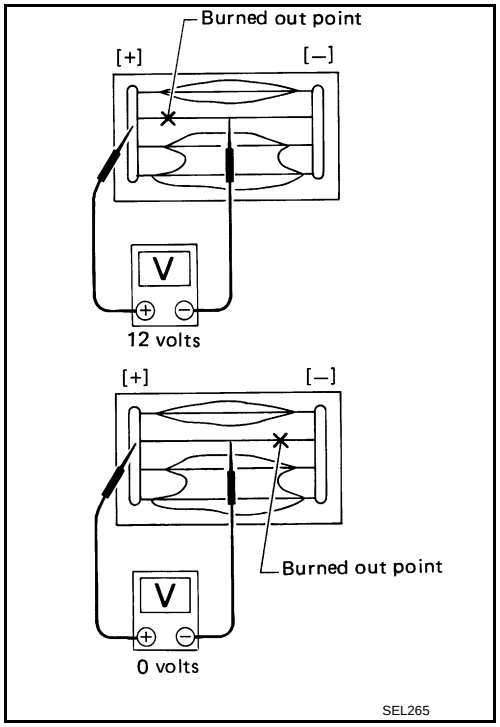
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



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

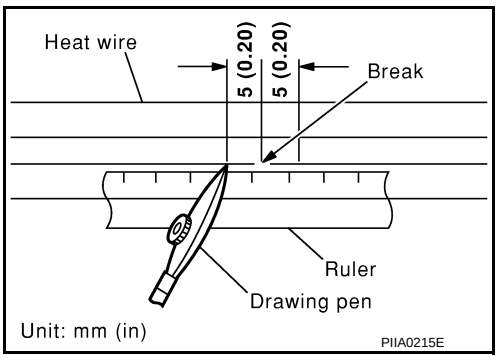
REPAIR EQUIPMENT

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

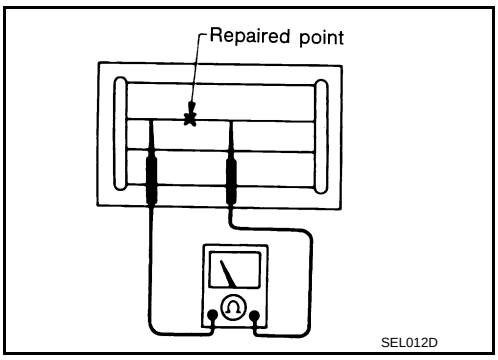
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

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.