

SECTION DEF

DEFOGGER

CONTENTS

BASIC INSPECTION	3	Component Function Check	13
DIAGNOSIS AND REPAIR WORKFLOW	3	Diagnosis Procedure	13
Repair Work Flow	3	Component Inspection	15
SYSTEM DESCRIPTION	5	DOOR MIRROR DEFOGGER LH	16
REAR WINDOW DEFOGGER SYSTEM	5	Description	16
System Diagram	5	Component Function Check	16
System Description	5	Diagnosis Procedure	16
Component Parts Location	6	Component Inspection (With Automatic Drive Positioner)	18
Component Description	6	Component Inspection (Without Automatic Drive Positioner)	18
DIAGNOSIS SYSTEM (BCM)	8	DOOR MIRROR DEFOGGER RH	19
COMMON ITEM	8	Description	19
COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)	8	Component Function Check	19
REAR WINDOW DEFOGGER	8	Diagnosis Procedure	19
REAR WINDOW DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)	9	Component Inspection (With Automatic Drive Positioner)	21
DTC/CIRCUIT DIAGNOSIS	10	Component Inspection (Without Automatic Drive Positioner)	21
REAR WINDOW DEFOGGER SWITCH	10	ECU DIAGNOSIS INFORMATION	22
Description	10	BCM (BODY CONTROL MODULE)	22
Component Function Check (2 Control Dial System or Auto A/C)	10	Reference Value	22
Component Function Check (3 Control Dial System Without Auto A/C)	10	Terminal Layout	25
Diagnosis Procedure (2 Control Dial System or Auto A/C)	10	Physical Values	25
Diagnosis Procedure (3 Control Dial System Without Auto A/C)	11	WIRING DIAGRAM	31
REAR WINDOW DEFOGGER RELAY	12	REAR WINDOW DEFOGGER	31
Description	12	Wiring Diagram	31
Component Function Check	12	SYMPTOM DIAGNOSIS	39
Diagnosis Procedure	12	REAR WINDOW DEFOGGER SYSTEM SYMPTOMS	39
REAR WINDOW DEFOGGER SYSTEM	13	Symptom Table	39
Description	13	REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.	40

Diagnosis Procedure	40
REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH OF DOOR MIRROR DEFOGGER OPERATE.	41
Diagnosis Procedure	41
BOTH DOORS MIRROR DEFOGGER DON'T OPERATE BUT REAR WINDOW DEFOGGER OPERATES	42
Diagnosis Procedure	42
DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.	43
Diagnosis Procedure	43
PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.	44
Diagnosis Procedure	44

REAR WINDOW DEFOGGER SWITCH DOES NOT LIGHT, BUT REAR WINDOW DEFOGGER OPERATES	45
Diagnosis Procedure	45
PRECAUTION	46
PRECAUTIONS	46
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	46
Handling for Adhesive and Primer	46
REMOVAL AND INSTALLATION	47
REAR WINDOW DEFOGGER	47
Filament Check	47
Filament Repair	47

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

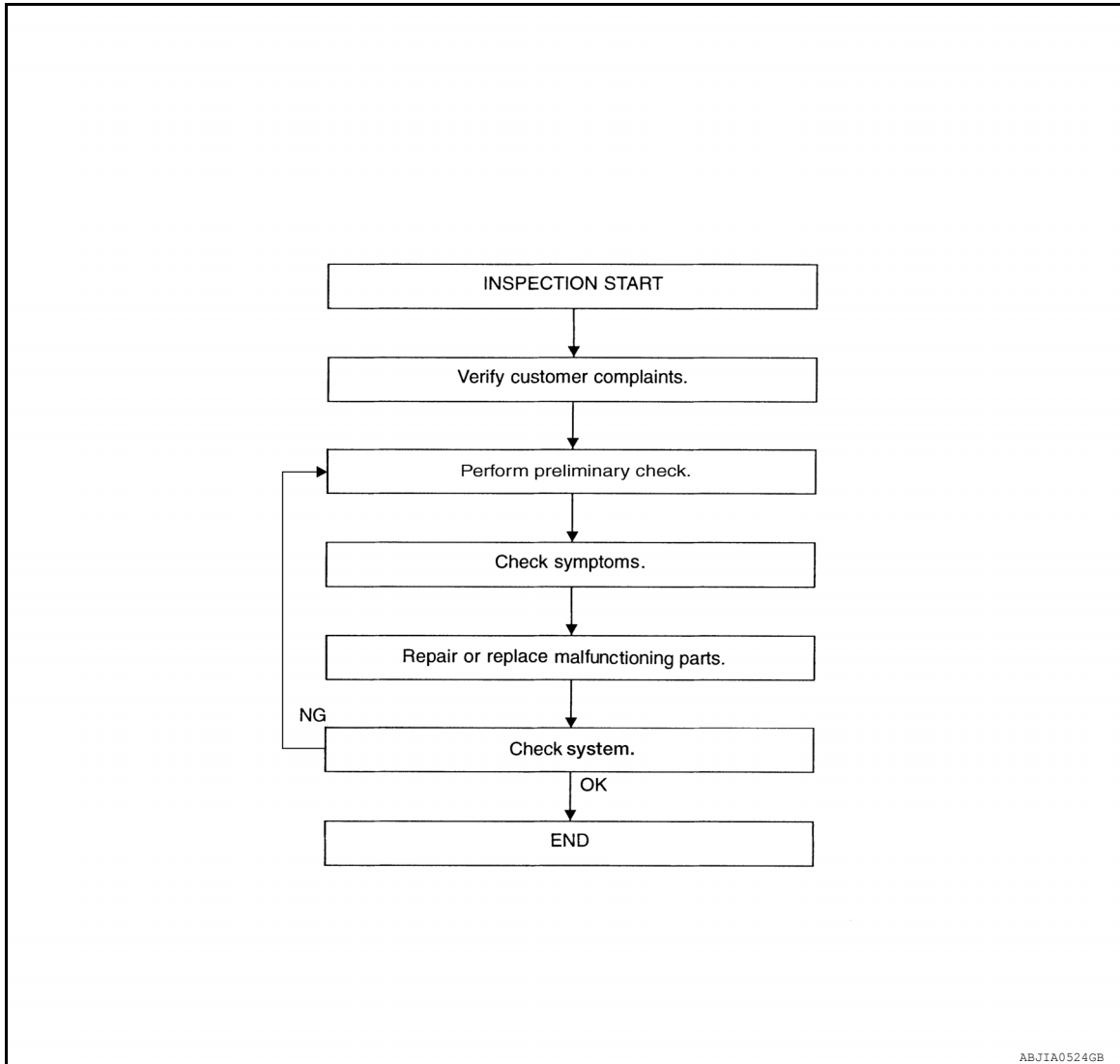
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Repair Work Flow

INFOID:000000007305012

WORK FLOW



DETAILED FLOW

1. CUSTOMER INFORMATION

Talk to the customer to obtain detailed information about the symptom.

>> GO TO 2

2. SYSTEM DESCRIPTION

Perform preliminary check. Refer to [DEF-5, "System Description"](#).

>> GO TO 3

3. SYMPTOM

Check for symptoms. Refer to [DEF-39, "Symptom Table"](#).

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

>> GO TO 4

4. MALFUNCTIONING PARTS

Repair or replace the applicable parts.

>> GO TO 5

5. SYSTEM CHECK

Operate rear window defogger switch to ensure that rear window defogger and heated mirrors operate.

Does the system operate normally?

YES >> Inspection End

NO >> Refer to [GI-39, "Intermittent Incident"](#).

REAR WINDOW DEFOGGER SYSTEM

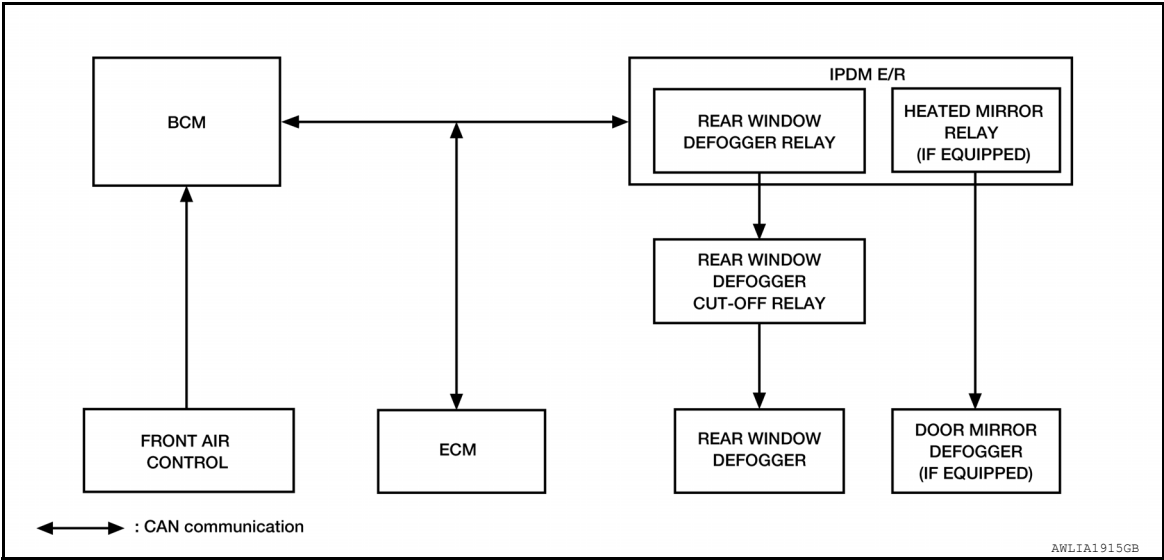
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

REAR WINDOW DEFOGGER SYSTEM

System Diagram

INFOID:000000007305013



System Description

INFOID:000000007305014

Operation Description

- When rear window defogger switch is turned ON while ignition switch is ON, the front air control (rear window defogger switch) transmits rear window defogger switch signal to BCM.
- BCM transmits rear window defogger control signal to IPDM E/R and display unit via CAN communication when rear window defogger operates.
- IPDM E/R turns rear window defogger relay and heated mirror relay ON when rear window defogger switch signal is received.
- Rear window defogger and door mirror defogger are supplied with power and operate when rear window defogger relay and heated mirror relay turn ON.
- Rear window defogger ON is displayed when signal is received.

Timer function

- BCM turns rear window defogger relay and heated mirror relay ON for approximately 15 minutes when rear window defogger switch is turned ON while ignition switch is ON. It makes rear window defogger and door mirror defogger operate.
- Timer is canceled after pressing rear window defogger switch again during timer operation. Then BCM turns rear window defogger relay and heated mirror relay OFF. The same reaction also occurs during timer operation, if the ignition switch is turned OFF.

INPUT/OUTPUT SIGNAL CHART

Switch	Input signal to BCM	BCM function	Actuator
Rear window defogger switch	Defogger switch signal	Rear window defogger and door mirror defogger control (if equipped)	Rear window defogger Door mirror defogger (if equipped)
Ignition switch	Ignition signal		

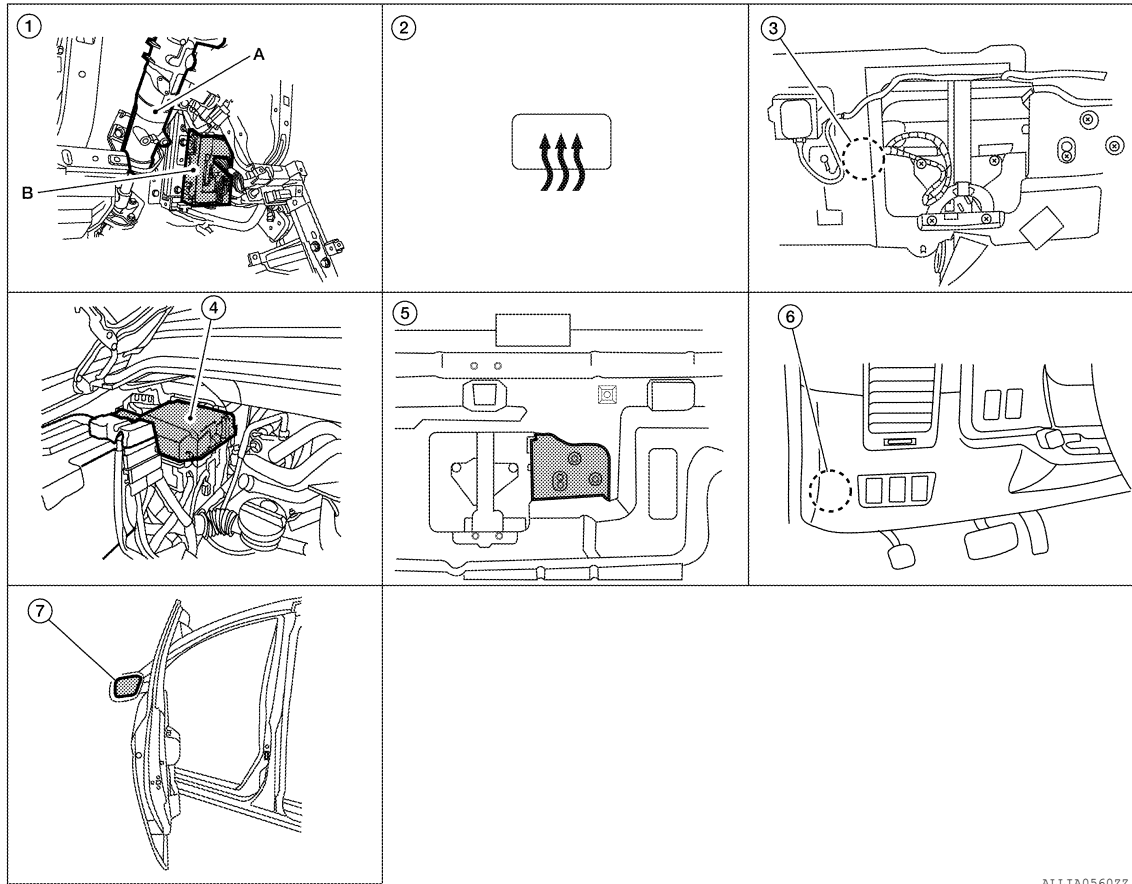
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REAR WINDOW DEFOGGER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:000000007305015



ALLIA05602Z

1. A. Steering column
B. BCM M18, M20 (view with instrument panel removed)
2. Front air control
M49, M50 (with auto A/C)
M176, M177 (with manual 3 control dial system)
M180, M181 (with manual 2 control dial system)
3. Rear window defogger connectors
B78, B81
4. IPDM E/R (rear window defogger relay and heated mirror relay) E120, E122, E124
5. Rear power drop glass motor (def cut-off switch) B80
6. Rear window defogger cut-off relay
M187
7. Door mirror (door mirror defogger) (if equipped)
LH D4 (with automatic drive positioner)
LH D6 (without automatic drive positioner)
RH D107 (with automatic drive positioner)
RH D106 (without automatic drive positioner)

Component Description

INFOID:0000000007305016

BCM	- Operates the rear window defogger with the operation of rear window defogger switch. - Performs the timer control of rear window defogger.
Rear window defogger relay	Operates the rear window defogger with the control signal from BCM.
Front air control (rear window defogger switch)	- The rear window defogger switch is turned ON. - Turns the indicator lamp ON when detecting the operation of rear window defogger.
Rear window defogger	Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window from fogging up.

REAR WINDOW DEFOGGER SYSTEM

< SYSTEM DESCRIPTION >

Heated mirror relay (if equipped)	Operates the door mirror defogger with the control signal from IPDM E/R. Controlled simultaneously with the rear window defogger relay.
Door mirror defogger (if equipped)	Heats the heating wire with the power supply from the heated mirror relay to prevent the door mirror from fogging up.

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DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000007802700

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Direct Diagnostic Mode	Description
Ecu Identification	The BCM part number is displayed.
Self Diagnostic Result	The BCM self diagnostic results are displayed.
Data Monitor	The BCM input/output data is displayed in real time.
Active Test	The BCM activates outputs to test components.
Work support	The settings for BCM functions can be changed.
Configuration	- The vehicle specification can be read and saved. - The vehicle specification can be written when replacing BCM.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SYSTEM APPLICATION

BCM can perform the following functions.

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

REAR WINDOW DEFOGGER

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

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

INFOID:000000007802701

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
ACC ON SW [On/Off]	Indicates condition of ignition switch ACC position.
REAR DEF SW [On/Off]	Indicates condition of rear window defogger switch.

ACTIVE TEST

Test Item	Description
REAR DEFOGGER	This test is able to check rear window defogger operation [Off/On].

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REAR WINDOW DEFOGGER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH

Description

INFOID:000000007305019

- The rear window defogger is operated by turning the rear window defogger switch ON.
- Turns the indicator lamp in the rear window defogger switch ON when operating the rear window defogger.

Component Function Check (2 Control Dial System or Auto A/C)

INFOID:000000007305020

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

Check that the indicator lamp of rear window defogger illuminates with rear window defogger switch ON.

Is the inspection result normal?

- YES >> Rear window defogger switch function is OK.
NO >> Refer to [DEF-10, "Diagnosis Procedure \(2 Control Dial System or Auto A/C\)".](#)

Component Function Check (3 Control Dial System Without Auto A/C)

INFOID:000000007305021

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

Check that the indicator lamp of rear window defogger illuminates with rear window defogger switch ON.

Is the inspection result normal?

- YES >> Rear window defogger switch function is OK.
NO >> Refer to [DEF-11, "Diagnosis Procedure \(3 Control Dial System Without Auto A/C\)".](#)

Diagnosis Procedure (2 Control Dial System or Auto A/C)

INFOID:000000007305022

Regarding Wiring Diagram information, refer to [DEF-31, "Wiring Diagram".](#)

1. CHECK FRONT AIR CONTROL (REAR WINDOW DEFOGGER SWITCH) CIRCUIT

Operate the rear window defogger switch.

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and front air control.
3. Check continuity between BCM connector (A) and front air control connector (B).

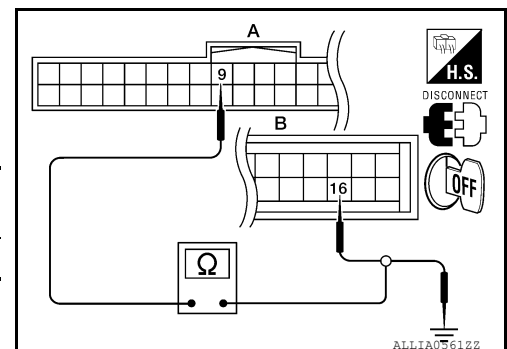
BCM connector	Terminal	Front air control connector	Terminal	Continuity
M18 (A)	9	M49 or M180 (B)	16	Yes

4. Check continuity between BCM connector (A) and ground.

BCM connector	Terminal	Ground	Continuity
M18 (A)	9		No

Is the inspection result normal?

- YES >> Replace front air control. Refer to [VTL-8, "Removal and Installation".](#)
NO >> Repair or replace harness.



REAR WINDOW DEFOGGER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

Diagnosis Procedure (3 Control Dial System Without Auto A/C)

INFOID:000000007305023

Regarding Wiring Diagram information, refer to [DEF-31. "Wiring Diagram"](#).

1. CHECK FRONT AIR CONTROL (REAR WINDOW DEFOGGER SWITCH) CIRCUIT

Operate the rear window defogger switch.

Is the inspection result normal?

YES >> Inspection End.

NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and front air control.
3. Check continuity between BCM connector (A) and front air control connector (B).

BCM connector	Terminal	Front air control connector	Terminal	Continuity
M18 (A)	9	M176 (B)	11	Yes

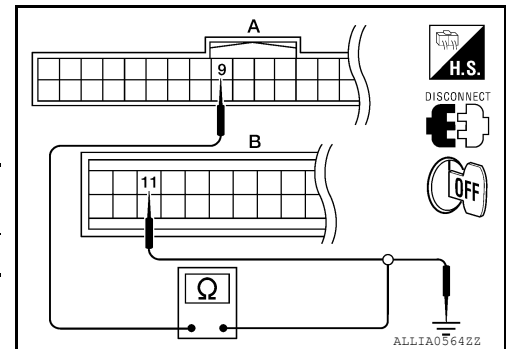
4. Check continuity between BCM connector (A) and ground.

BCM connector	Terminal	Ground	Continuity
M18 (A)	9		No

Is the inspection result normal?

YES >> Replace front air control. Refer to [VTL-8. "Removal and Installation"](#).

NO >> Repair or replace harness.



REAR WINDOW DEFOGGER RELAY

< DTC/CIRCUIT DIAGNOSIS >

REAR WINDOW DEFOGGER RELAY

Description

INFOID:000000007305024

Power is supplied to the rear window defogger with BCM control.

Component Function Check

INFOID:000000007305025

1. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

Check that an operation noise of rear window defogger relay (located in IPDM E/R) can be heard when turning the rear window defogger switch ON.

Is the inspection result normal?

- YES >> Rear window defogger relay power supply circuit is OK.
NO >> Refer to [DEF-12, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007305026

Regarding Wiring Diagram information, refer to [DEF-31, "Wiring Diagram"](#).

1. CHECK FUSES

Check if any of the following fuses in the IPDM E/R are blown.

COMPONENT PARTS	AMPERE	FUSE NO.
IPDM E/R	15A	46
IPDM E/R	15A	47

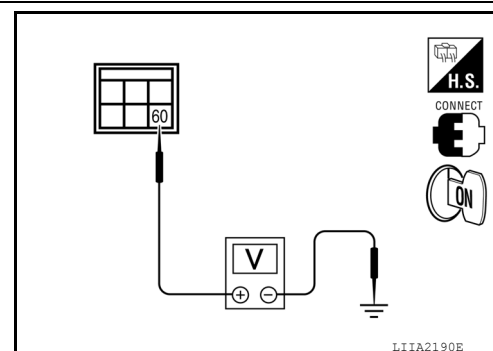
Is the inspection result normal?

- YES >> GO TO 2
NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

- Turn ignition switch ON.
- Check voltage between IPDM E/R connector and ground.

Terminals		Condition of rear window defogger switch	Voltage (V) (Approx.)
(+)	(-)		
IPDM E/R connector	Terminal		
E124	60	ON	Battery voltage
		OFF	0



Is the inspection result normal?

- YES >> GO TO 3
NO >> Replace IPDM E/R. Refer to [PCS-29, "Removal and Installation of IPDM E/R"](#).

3. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit
 - IPDM E/R
- NO >> Repair or replace the malfunctioning parts.

REAR WINDOW DEFOGGER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

REAR WINDOW DEFOGGER SYSTEM

Description

INFOID:000000007305027

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

Component Function Check

INFOID:000000007305028

1. CHECK REAR WINDOW DEFOGGER

Check that the heating wire of rear window defogger is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

YES >> Rear window defogger is OK.

NO >> Refer to [DEF-13. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007305029

Regarding Wiring Diagram information, refer to [DEF-31. "Wiring Diagram"](#).

1. CHECK FUSES

Check if any of the following fuses in IPDM E/R are blown.

COMPONENT PARTS	AMPERE	FUSE NO.
IPDM E/R	15A	46
	15A	47

Is the inspection result normal?

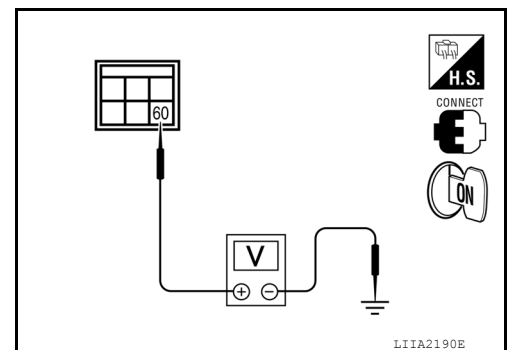
YES >> GO TO 2

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

- Turn ignition switch ON.
- Check voltage between IPDM E/R connector and ground.

Terminals			Condition of rear window defogger switch	Voltage (V) (Approx.)
(+)		(−)		
IPDM E/R connector	Terminal			
E124	60	Ground	ON	Battery voltage
			OFF	0



Is the inspection result normal?

YES >> GO TO 3

NO >> Replace IPDM E/R. Refer to [PCS-29. "Removal and Installation of IPDM E/R"](#).

3. CHECK REAR WINDOW DEFOGGER POWER CIRCUIT HARNESS CONTINUITY

REAR WINDOW DEFOGGER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R and rear window defogger cut-off relay.
3. Check continuity between IPDM E/R connector E124 (B) terminal 60 and rear window defogger cut-off relay connector M187 (A) terminals 2 and 3.

IPDM E/R connector	Terminal	Rear window defogger cut-off relay connector	Terminal	Continuity
B: E124	60	A: M187	2	Yes
			3	

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

4. INSPECTION OF REAR POWER WINDOW DEFOGGER CUT-OFF RELAY

Check continuity between rear window defogger cut-off relay terminals 3 and 5.

Condition	Continuity
12V direct current supply between terminals 1 and 2	Yes
No current supply	No

Is the inspection result normal?

YES >> GO TO 5

NO >> Replace rear window defogger cut-out relay.

5. CHECK REAR WINDOW DEFOGGER CUT-OFF RELAY GROUND CIRCUIT

1. Place rear power drop glass in the closed (UP) position.
2. Check continuity between rear window defogger cut-off relay connector M187 terminal 1 and ground.

1 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 7

NO >> GO TO 6

6. CHECK REAR POWER DROP GLASS MOTOR (DEF CUT-OFF SWITCH)

1. Disconnect rear power drop glass motor (def cut-off switch).
2. Check continuity between rear power drop glass motor (def cut-off switch) terminals 2 and 3.

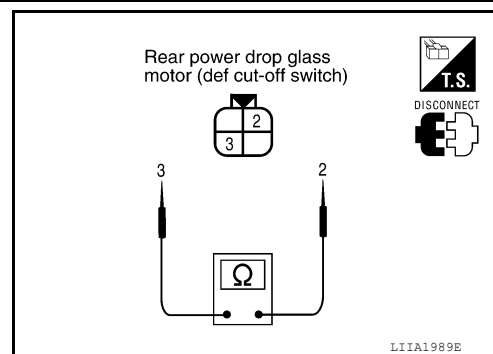
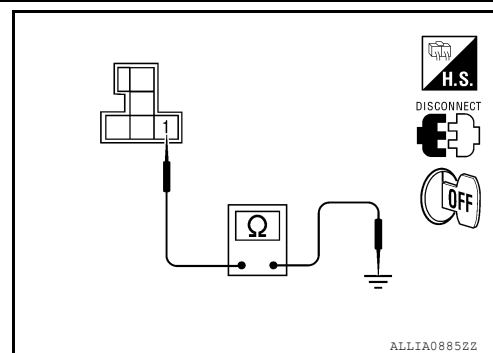
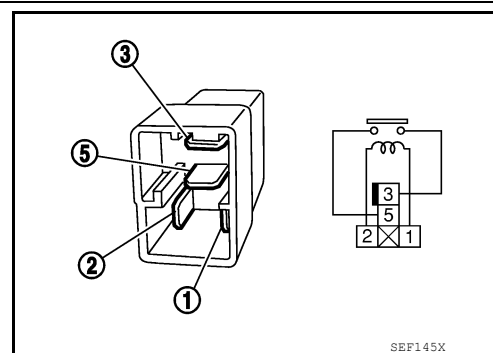
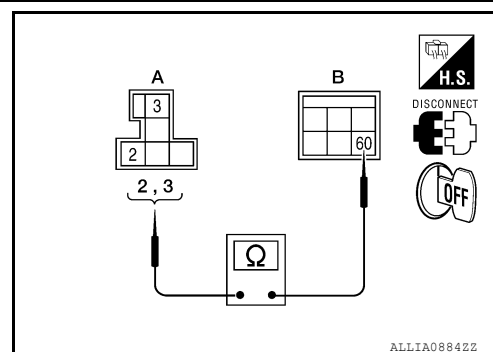
Terminal	Rear power drop glass position	Continuity
2	Closed (UP)	Yes
	Open (DOWN) more than 18 mm	No

Is the inspection result normal?

YES >> Repair or replace harness.

NO >> Replace rear power drop glass motor (def cut-off switch).

7. CHECK POWER SUPPLY CIRCUIT

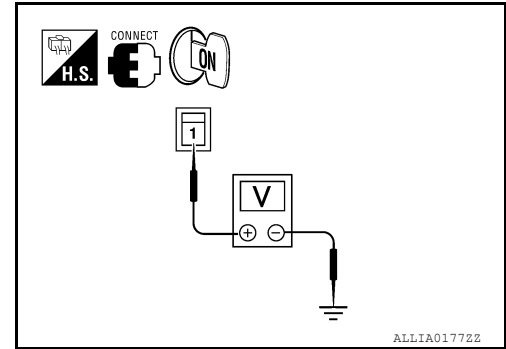


REAR WINDOW DEFOGGER SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch ON.
2. Connect all disconnected connectors and rear window defogger cut-off relay.
3. Check voltage between rear window defogger connector and ground.

Terminals			Condition of rear window defogger switch	Voltage (V) (Approx.)
(+)		(−)		
Rear window defogger connector	Terminal			
B78	1	Ground	ON	Battery voltage
			OFF	0



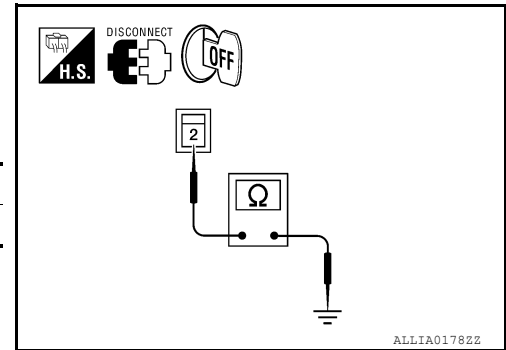
Is the inspection result normal?

- YES >> GO TO 8
NO >> Repair or replace harness.

8. CHECK GROUND CIRCUIT

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

Rear window defogger connector	Terminal	Ground	Continuity
B81	2		Yes



Is the inspection result normal?

- YES >> GO TO 9
NO >> Repair or replace harness.

9. CHECK FILAMENT

Check filament.

Refer to [DEF-15, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Refer to [GI-39, "Intermittent Incident"](#).
NO >> Repair filament. Refer to [DEF-47, "Filament Repair"](#).

Component Inspection

INFOID:000000007305030

1. CHECK FILAMENT

Check the filament for damage or open circuits.

Refer to [DEF-47, "Filament Check"](#).

Is the inspection result normal?

- YES >> Inspection End.
NO >> Repair filament. Refer to [DEF-47, "Filament Repair"](#).

DOOR MIRROR DEFOGGER LH

< DTC/CIRCUIT DIAGNOSIS >

DOOR MIRROR DEFOGGER LH

Description

INFOID:000000007305031

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

Component Function Check

INFOID:000000007305032

1. CHECK DOOR MIRROR DEFOGGER LH

Check that heating wire of door mirror defogger LH is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

- YES >> Door mirror defogger is OK.
NO >> Refer to [DEF-16, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007305033

Regarding Wiring Diagram information, refer to [DEF-31, "Wiring Diagram"](#).

1. CHECK POWER SUPPLY

Check if the following fuse in the IPDM E/R is blown.

COMPONENT PARTS	AMPERE	FUSE NO.
IPDM E/R	15A	43

Is the inspection result normal?

- YES >> GO TO 2
NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

- Turn ignition switch ON.
- Check voltage between IPDM E/R connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		
E120	23	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0

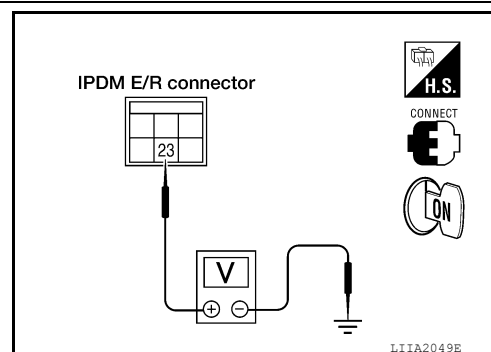
Is the inspection result normal?

- YES >> GO TO 3 (with automatic drive positioner)
YES >> GO TO 5 (without automatic drive positioner)
NO >> Replace IPDM E/R. Refer to [PCS-29, "Removal and Installation of IPDM E/R"](#).

3. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT 2

- Turn ignition switch OFF.
- Disconnect door mirror LH.
- Turn ignition switch ON.
- Check voltage between door mirror LH connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		



DOOR MIRROR DEFOGGER LH

< DTC/CIRCUIT DIAGNOSIS >

D4	10	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

4. CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

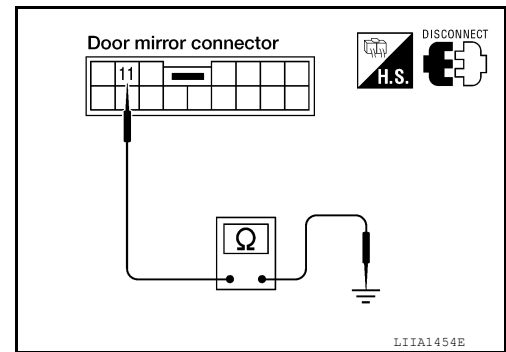
Check continuity between door mirror LH connector D4 terminal 11 and ground.

11 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 7

NO >> Repair or replace harness.



5. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT 2

1. Turn ignition switch OFF.
2. Disconnect door mirror LH.
3. Turn ignition switch ON.
4. Check voltage between door mirror LH connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		
D6	4	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0

Is the inspection result normal?

YES >> GO TO 6

NO >> Repair or replace harness.

6. CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

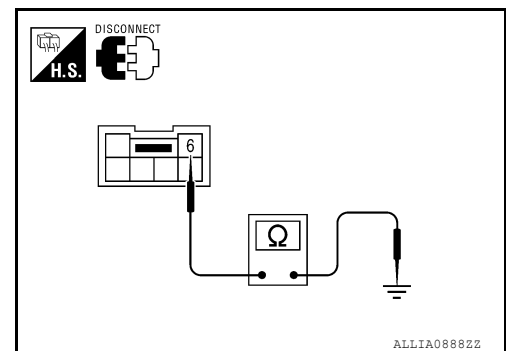
Check continuity between door mirror LH connector D6 terminal 6 and ground.

6 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 7

NO >> Repair or replace harness.



7. CHECK DOOR MIRROR DEFOGGER LH

Check door mirror defogger LH.

Refer to [DEF-18, "Component Inspection \(With Automatic Drive Positioner\)".](#)

Refer to [DEF-18, "Component Inspection \(Without Automatic Drive Positioner\)".](#)

Is the inspection result normal?

YES >> GO TO 8

NO >> Replace door mirror. Refer to [MIR-15, "Door Mirror Assembly".](#)

DOOR MIRROR DEFOGGER LH

< DTC/CIRCUIT DIAGNOSIS >

8. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit
 - IPDM E/R

NO >> Repair or replace the malfunctioning parts.

Component Inspection (With Automatic Drive Positioner)

INFOID:000000007305034

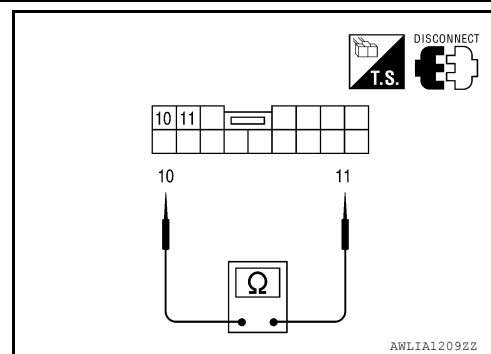
1. CHECK DOOR MIRROR DEFOGGER

Check continuity between door mirror LH terminals 10 and 11.

10 - 11 : Continuity should exist.

Is the inspection result normal?

- YES >> Check the condition of the harness and the connector.
- NO >> Replace malfunctioning door mirror LH. Refer to [MIR-15, "Door Mirror Assembly"](#).



Component Inspection (Without Automatic Drive Positioner)

INFOID:000000007305035

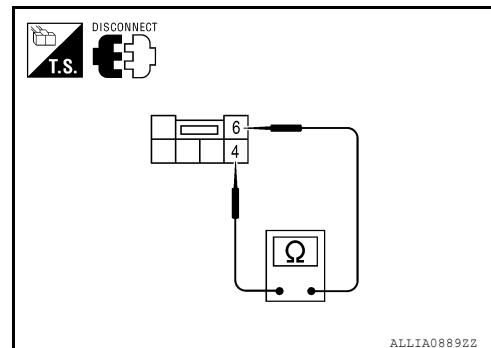
1. CHECK DOOR MIRROR DEFOGGER

Check continuity between door mirror LH terminals 4 and 6.

4 - 6 : Continuity should exist.

Is the inspection result normal?

- YES >> Check the condition of the harness and the connector.
- NO >> Replace malfunctioning door mirror LH. Refer to [MIR-15, "Door Mirror Assembly"](#).



DOOR MIRROR DEFOGGER RH

< DTC/CIRCUIT DIAGNOSIS >

DOOR MIRROR DEFOGGER RH

Description

INFOID:000000007305036

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

Component Function Check

INFOID:000000007305037

1. CHECK DOOR MIRROR DEFOGGER RH

Check that the heating wire of door mirror defogger RH is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

YES >> Door mirror defogger RH is OK.

NO >> Refer to [DEF-19, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007305038

Regarding Wiring Diagram information, refer to [DEF-31, "Wiring Diagram"](#).

1. CHECK POWER SUPPLY

Check if the following fuse in the IPDM E/R is blown.

COMPONENT PARTS	AMPERE	FUSE NO.
IPDM E/R	15A	43

Is the inspection result normal?

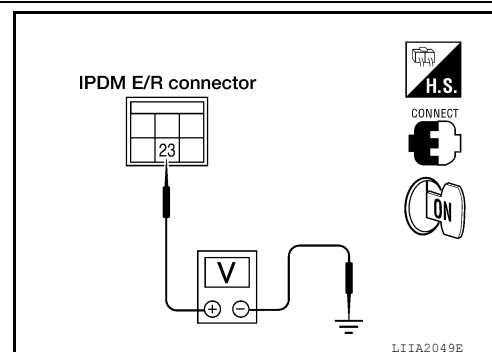
YES >> GO TO 2

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

- Turn ignition switch ON.
- Check voltage between IPDM E/R connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		
E120	23	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0



Is the inspection result normal?

YES >> GO TO 3 (with automatic drive positioner)

YES >> GO TO 5 (without automatic drive positioner)

NO >> Replace IPDM E/R. Refer to [PCS-29, "Removal and Installation of IPDM E/R"](#).

3. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT 2

- Turn ignition switch OFF.
- Disconnect door mirror RH.
- Turn ignition switch ON.
- Check voltage between door mirror RH connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		

DOOR MIRROR DEFOGGER RH

< DTC/CIRCUIT DIAGNOSIS >

D107	10	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

4. CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

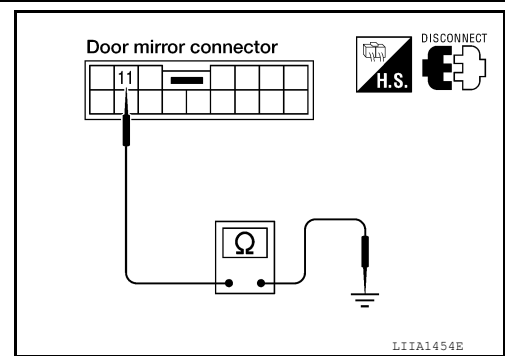
Check continuity between door mirror RH connector D107 terminal 11 and ground.

11 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 7

NO >> Repair or replace harness.



5. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT 2

1. Turn ignition switch OFF.
2. Disconnect door mirror RH.
3. Turn ignition switch ON.
4. Check voltage between door mirror RH connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		
D106	4	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0

Is the inspection result normal?

YES >> GO TO 6

NO >> Repair or replace harness.

6. CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

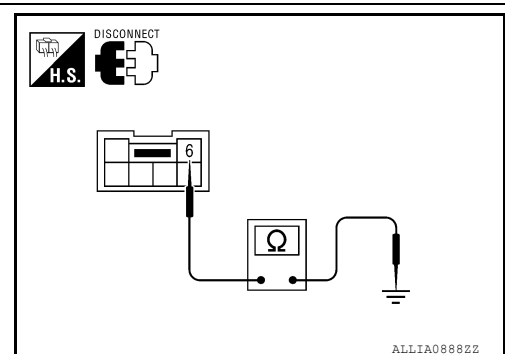
Check continuity between door mirror RH connector D106 terminal 6 and ground.

6 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 7

NO >> Repair or replace harness.



7. CHECK DOOR MIRROR DEFOGGER RH

Check door mirror defogger RH.

Refer to [DEF-21, "Component Inspection \(With Automatic Drive Positioner\)"](#).

Refer to [DEF-21, "Component Inspection \(Without Automatic Drive Positioner\)"](#).

Is the inspection result normal?

YES >> GO TO 8

NO >> Replace door mirror. Refer to [MIR-15, "Door Mirror Assembly"](#).

DOOR MIRROR DEFOGGER RH

< DTC/CIRCUIT DIAGNOSIS >

8. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-39, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit
 - IPDM E/R

NO >> Repair or replace the malfunctioning parts.

Component Inspection (With Automatic Drive Positioner)

INFOID:000000007305039

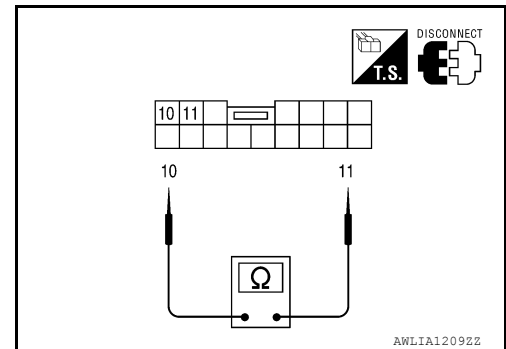
1. CHECK DOOR MIRROR DEFOGGER

Check continuity between door mirror RH terminals 10 and 11.

10 - 11 : Continuity should exist.

Is the inspection result normal?

- YES >> Check the condition of the harness and the connector.
- NO >> Replace malfunctioning door mirror RH. Refer to [MIR-15, "Door Mirror Assembly"](#).



Component Inspection (Without Automatic Drive Positioner)

INFOID:000000007305040

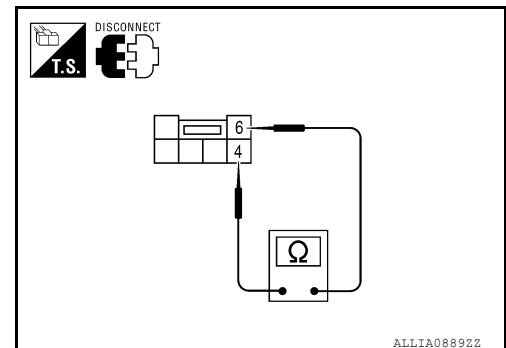
1. CHECK DOOR MIRROR DEFOGGER

Check continuity between door mirror RH terminals 4 and 6.

4 - 6 : Continuity should exist.

Is the inspection result normal?

- YES >> Check the condition of the harness and the connector.
- NO >> Replace malfunctioning door mirror RH. Refer to [MIR-15, "Door Mirror Assembly"](#).



BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000007802702

NOTE:

The Signal Tech II Tool (J-50190) can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information.

- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs
- Test remote keyless entry keyfob relative signal strength

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm ² , psi
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
BRAKE SW	Brake pedal released	Off
	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
	Buzzer in combination meter ON	On
CARGO LAMP SW	Cargo lamp switch OFF	Off
	Cargo lamp switch ON	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Front door RH closed	Off
	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
	Rear door LH opened	On
DOOR SW-RR	Rear door RH closed	Off
	Rear door RH opened	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status	
FAN ON SIG	Blower motor fan switch OFF	Off	A
	Blower motor fan switch ON	On	
FR FOG SW	Front fog lamp switch OFF	Off	B
	Front fog lamp switch ON	On	
FR WASHER SW	Front washer switch OFF	Off	C
	Front washer switch ON	On	
FR WIPER LOW	Front wiper switch OFF	Off	D
	Front wiper switch LO	On	
FR WIPER HI	Front wiper switch OFF	Off	E
	Front wiper switch HI	On	
FR WIPER INT	Front wiper switch OFF	Off	F
	Front wiper switch INT	On	
FR WIPER STOP	Any position other than front wiper stop position	Off	G
	Front wiper stop position	On	
HAZARD SW	When hazard switch is not pressed	Off	H
	When hazard switch is pressed	On	
HEAD LAMP SW1	Headlamp switch OFF	Off	I
	Headlamp switch 1st	On	
HEAD LAMP SW2	Headlamp switch OFF	Off	J
	Headlamp switch 1st	On	
HI BEAM SW	High beam switch OFF	Off	K
	High beam switch HI	On	
ID REGST FL1	ID registration of front left tire incomplete	YET	DEF
	ID registration of front left tire complete	DONE	
ID REGST FR1	ID registration of front right tire incomplete	YET	M
	ID registration of front right tire complete	DONE	
ID REGST RL1	ID registration of rear left tire incomplete	YET	N
	ID registration of rear left tire complete	DONE	
ID REGST RR1	ID registration of rear right tire incomplete	YET	O
	ID registration of rear right tire complete	DONE	
IGN ON SW	Ignition switch OFF or ACC	Off	P
	Ignition switch ON	On	
IGN SW CAN	Ignition switch OFF or ACC	Off	
	Ignition switch ON	On	
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7	
KEY CYL LK-SW	Door key cylinder LOCK position	Off	
	Door key cylinder other than LOCK position	On	
KEY CYL UN-SW	Door key cylinder UNLOCK position	Off	
	Door key cylinder other than UNLOCK position	On	
KEY ON SW	Mechanical key is removed from key cylinder	Off	
	Mechanical key is inserted to key cylinder	On	
KEYLESS LOCK	LOCK button of key fob is not pressed	Off	
	LOCK button of key fob is pressed	On	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

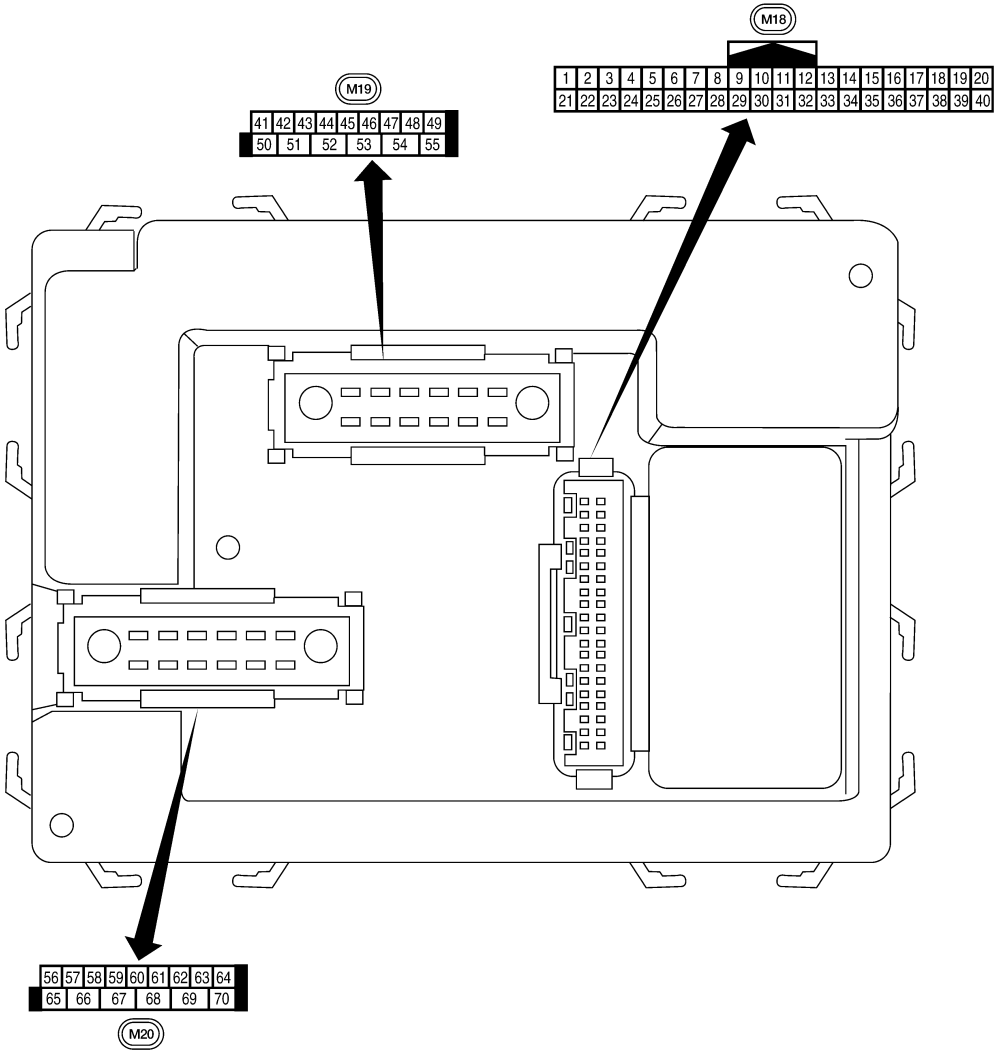
Monitor Item	Condition	Value/Status
KEYLESS PANIC	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed	On
LIGHT SW 1ST	Lighting switch OFF	Off
	Lighting switch 1st	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V
	Dark outside of the vehicle	Close to 0V
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off
	Low tire pressure warning lamp in combination meter ON	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal Layout

INFOID:000000007802703



DEF

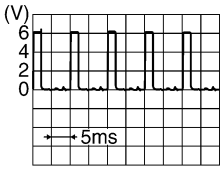
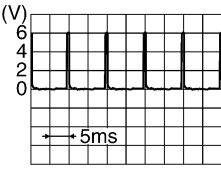
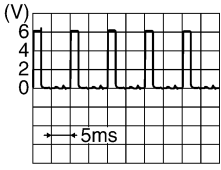
Physical Values

LIIA2443E

INFOID:000000007802704

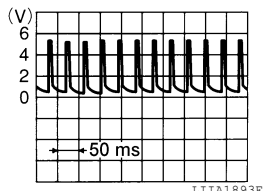
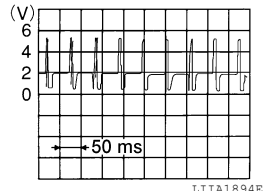
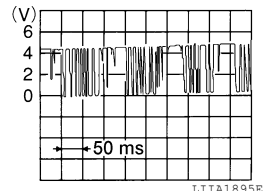
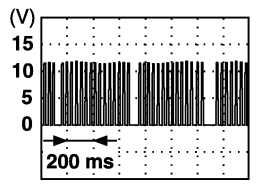
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR/W	Key ring output	Output	OFF	ON (driver door open)	0V
					OFF (driver door closed)	Battery voltage
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	Y	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	V	Combination switch input 1				
9	Y/B	Rear window defogger switch (Crew Cab)	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
11	O	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH (All)	Input	OFF	ON (open)	0V
		Rear door switch lower RH (King Cab)			OFF (closed)	Battery voltage
		Rear door switch upper RH (King Cab)				
13	GR	Rear door switch RH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	L/W	Tire pressure warning check connector	Input	OFF	—	5V
18	P	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V

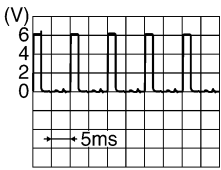
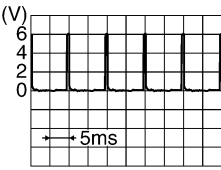
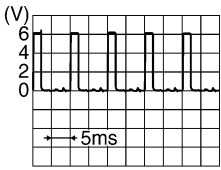
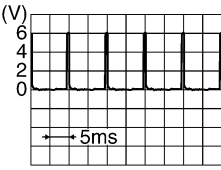
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
19	V/W	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	 LIT1A1893E
20	G/W	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	 LIT1A1894E
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	 LIT1A1895E
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	G	BUS	—	—	Ignition switch ON or power window timer operates	 PIT1A2344E
23	G/O	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	W/B	Hazard switch	Input	OFF	ON	0V
					OFF	5V
31	P/L	Cargo lamp switch	Input	OFF	Cargo lamp switch ON	0
					Cargo lamp switch OFF	Battery voltage

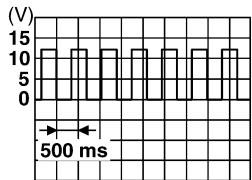
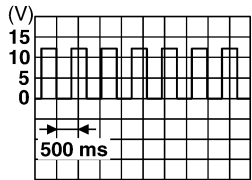
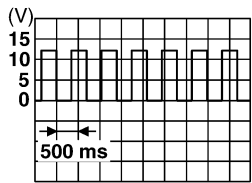
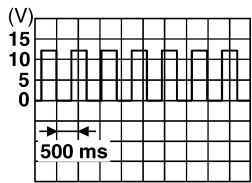
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
35	O/B	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	R/W	Combination switch output 1				
37	B/R	Key switch and key lock solenoid	Input	OFF	Key inserted Key removed	Battery voltage 0V
38	W/L	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
47	SB	Front door switch LH (All)	Input	OFF	ON (open)	0V
		Rear door switch lower LH (King Cab)			OFF (closed)	Battery voltage
		Rear door switch upper LH (King Cab)				
48	R/Y	Rear door switch LH (Crew Cab)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
50	R/Y	Cargo bed lamp control	Output	OFF	Cargo lamp switch (ON)	0V
					Cargo lamp switch (OFF)	Battery voltage

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)	
				Ignition switch	Operation or condition		
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON	 SKIA3009J	
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	 SKIA3009J	
56	R/G	Battery saver output	Output	OFF	15 minutes (early production) or 10 minutes (late production) after ignition switch is turned OFF	0V	
				ON	—	Battery voltage	
57	Y/R	Battery power supply	Input	OFF	—	Battery voltage	
58	W/R	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more	
					When optical sensor is not illuminated	0.6V or less	
59	G	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V	
					ON (unlock)	Battery voltage	
60	G/B	Turn signal (left)	Output	ON	Turn left ON	 SKIA3009J	
61	G/Y	Turn signal (right)	Output	ON	Turn right ON	 SKIA3009J	
62	R/W	Step lamp LH and RH	Output	OFF	ON (any door open)	0V	
					OFF (all doors closed)	Battery voltage	
63	L	Interior room/map lamp	Output	OFF	Any door switch	ON (open)	0V
						OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V	
					ON (lock)	Battery voltage	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

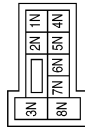
Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
66	G/Y	Front door lock actuator RH and rear door lock actuators LH/RH (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
67	B	Ground	Input	ON	—	0V
68	W/L	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	W/R	Power window power supply	Output	—	—	Battery voltage
70	W/B	Battery power supply	Input	OFF	—	Battery voltage

REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

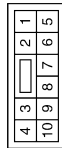
REAR WINDOW DEFOGGER CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



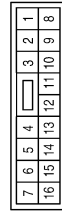
Terminal No.	5N	Color of Wire	Y/G	Signal Name	—
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Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Color	WHITE



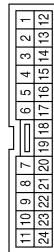
Terminal No.	10	Color of Wire	B/W	Signal Name	—
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Connector No.	M8
Connector Name	WIRE TO WIRE
Connector Color	WHITE

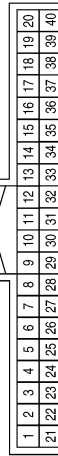


Terminal No.	14	Color of Wire	B	Signal Name	—
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Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	BROWN

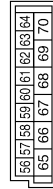


Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	23	Color of Wire	GR/W	Signal Name	—
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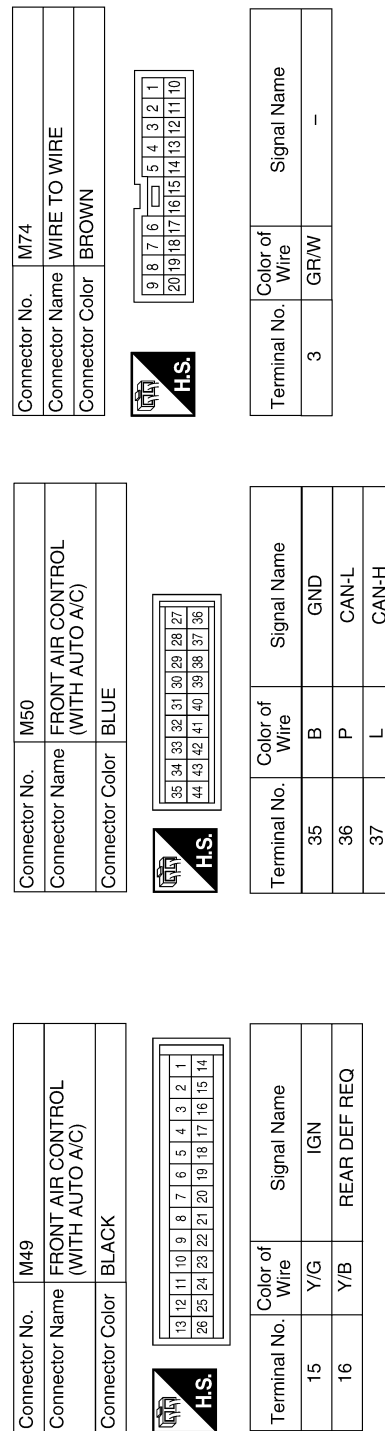
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	67	Color of Wire	B	Signal Name	GND (POWER)
	70		W/B		BAT (F/L)

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< WIRING DIAGRAM >



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REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE

4	3	2	1
10	9	8	7
6	5		



Terminal No.	Color of Wire	Signal Name
3	B	-

Connector No.	M176
Connector Name	FRONT AIR CONTROL (WITH MANUAL 3 CONTROL DIAL SYSTEM)
Connector Color	BLACK

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



Terminal No.	Color of Wire	Signal Name
1	B	GND
11	Y/B	HB REQUEST
14	Y/G	V IGN

Connector No.	M177
Connector Name	FRONT AIR CONTROL (WITH MANUAL 3 CONTROL DIAL SYSTEM)
Connector Color	GREEN

35	34	33	32	31	30	29	28	27
44	43	42	41	40	39	38	37	36



Terminal No.	Color of Wire	Signal Name
34	L	CAN-H
35	P	CAN-L

Connector No.	M178
Connector Name	JOINT CONNECTOR-M10
Connector Color	BLUE

9	8	7	6	5	4	3	2	1
20	19	18	17	16	15	14	13	12
11	10							



Terminal No.	Color of Wire	Signal Name
1	L	-
6	L	-
10	P	-
15	P	-

Connector No.	M179
Connector Name	JOINT CONNECTOR-M11
Connector Color	BLUE

9	8	7	6	5	4	3	2	1
20	19	18	17	16	15	14	13	12
11	10							



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
6	L	-
10	P	-
11	P	-
15	P	-

Connector No.	M180
Connector Name	FRONT AIR CONTROL (WITH MANUAL 2 CONTROL DIAL SYSTEM)
Connector Color	BLACK

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



Terminal No.	Color of Wire	Signal Name
15	Y/G	V IGN
16	Y/B	REAR DEF REQ

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REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



1	2	3	4
5	6	7	8
9	10		

Terminal No.	Color of Wire	Signal Name
10	B/W	—

Connector No.	M187
Connector Name	REAR WINDOW DEFOGGER CUT-OFF RELAY
Connector Color	BLUE



3	5
2	1

Terminal No.	Color of Wire	Signal Name
1	W/R	—
2	B/W	—
3	B/W	—
5	W/L	—

Connector No.	M181
Connector Name	FRONT AIR CONTROL (WITH MANUAL 2 CONTROL DIAL SYSTEM)
Connector Color	WHITE



35	36	37	38	39	40	41	42	43	44
27	28	29	30	31	32	33	34	35	36

Terminal No.	Color of Wire	Signal Name
35	B	GND
36	P	CAN-L
37	L	CAN-H

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



59	58	57
62	61	60

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



42	41	40	39	38	37
48	47	46	45	44	43

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



21	20	19
24	23	22

Terminal No.	Color of Wire	Signal Name
23	GR/W	HEATED MIRROR

Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)
60	B/W	RR DEF

Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L

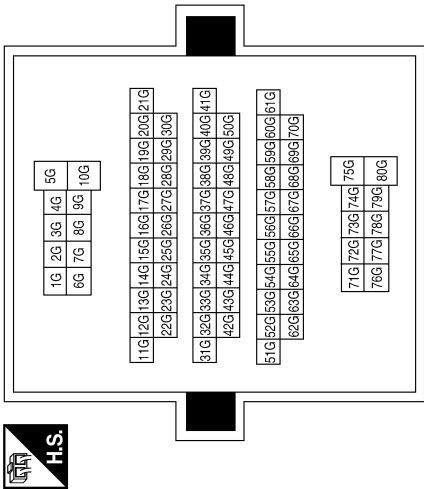
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REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

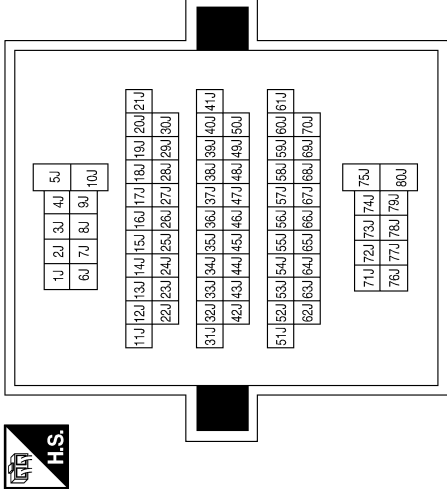
Terminal No.	Color of Wire	Signal Name
6G	GR/W	-
7G	L/W	-
10G	W/B	-
31G	L	-
42G	P	-

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

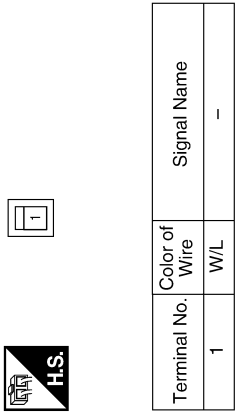


Terminal No.	Color of Wire	Signal Name
7J	W/L	-
54J	W/R	-

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	B78
Connector Name	REAR WINDOW DEFOGGER
Connector Color	BLACK

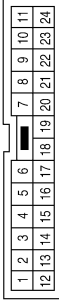


Terminal No.	Color of Wire	Signal Name
1	W/L	-

REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	BROWN

Terminal No.	23
Color of Wire	GR/W
Signal Name	—

Connector No.	B81
Connector Name	REAR WINDOW DEFOGGER
Connector Color	BLACK




Terminal No.	2
Color of Wire	B
Signal Name	—

Connector No.	B80
Connector Name	REAR POWER DROP GLASS MOTOR
Connector Color	GRAY



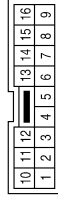

Terminal No.	Color of Wire	Signal Name
2	W/R	-
3	B	-

Connector No.	D6
Connector Name	DOOR MIRROR LH (WITHOUT AUTOMATIC DRIVE POSITIONER)
Connector Color	WHITE



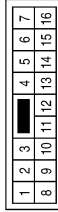

Terminal No.	Color of Wire	Signal Name
4	GR/W	—
6	B	—

Connector No.	D4
Connector Name	DOOR MIRROR LH (WITH AUTOMATIC DRIVE POSITIONER)
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
10	GR/W	—
11	B	—

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	14
Color of Wire	B
Signal Name	—

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REAR WINDOW DEFOGGER

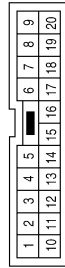
< WIRING DIAGRAM >

Connector No.	D106
Connector Name	DOOR MIRROR RH (WITHOUT AUTOMATIC DRIVE POSITIONER)
Connector Color	WHITE



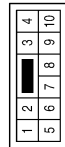
Terminal No.	Color of Wire	Signal Name
4	GRW	-
6	B	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
3	GRW	-

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	B	-

Connector No.	D107
Connector Name	DOOR MIRROR RH (WITH AUTOMATIC DRIVE POSITIONER)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10	GRW	-
11	B	-

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REAR WINDOW DEFOGGER SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER SYSTEM SYMPTOMS

Symptom Table

INFOID:000000007305045

Symptom	Diagnoses / Service procedure	Refer to page
Rear window defogger and door mirror defoggers do not operate. (with heated mirrors)	1. BCM power supply and ground circuit check	BCS-28
	2. IPDM E/R auto active test check	PCS-13
	3. Rear window defogger switch circuit check	DEF-40
	4. Rear window defogger circuit check	DEF-40
	5. Replace IPDM E/R	PCS-29
Rear window defogger does not operate. (without heated mirrors)	1. BCM power supply and ground circuit check	BCS-28
	2. IPDM E/R auto active test check	PCS-13
	3. Rear window defogger switch circuit check	DEF-10
	4. Rear window defogger circuit check	DEF-13
	5. Filament check	DEF-47
	6. Replace IPDM E/R	PCS-29
Rear window defogger does not operate but both of door mirror defoggers operate. (with heated mirrors)	1. Rear window defogger circuit check	DEF-41
	2. Filament check	DEF-47
	3. Replace IPDM E/R	PCS-29
Both door mirror defoggers do not operate but rear window defogger operates. (with heated mirrors)	1. Door mirror defogger power supply circuit check	DEF-42
	2. Replace IPDM E/R	PCS-29
Door mirror LH defogger does not operate. (with heated mirrors)	1. Door mirror LH defogger circuit check	DEF-43
Door mirror RH defogger does not operate. (with heated mirrors)	1. Door mirror RH defogger circuit check	DEF-44
Rear window defogger switch does not light, and rear window defogger is not shown on the display, but rear window defogger operates.	1. Replace front air control	VTL-8

DEF

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

< SYMPTOM DIAGNOSIS >

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

Diagnosis Procedure

INFOID:000000007305046

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.

If equipped 2 control dial system or auto A/C, refer to [DEF-10. "Component Function Check \(2 Control Dial System or Auto A/C\)"](#).

If equipped 3 control dial system or without auto A/C, refer to [DEF-10. "Component Function Check \(3 Control Dial System Without Auto A/C\)"](#).

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-12. "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace the malfunctioning parts.

3. CHECK REAR WINDOW DEFOGGER SYSTEM

Check rear window defogger system.

Refer to [DEF-13. "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace the malfunctioning parts.

4. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-39. "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Check the following.

- Battery power supply circuit
- IPDM E/R

NO >> Repair or replace the malfunctioning parts.

REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH OF DOOR MIRROR DEFOGGER OPERATE.

< SYMPTOM DIAGNOSIS >

REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH OF DOOR MIRROR DEFOGGER OPERATE.

Diagnosis Procedure

INFOID:000000007305047

1. CHECK REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

Check rear window defogger power supply and ground circuit.

Refer to [DEF-13, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Refer to [GI-39, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

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BOTH DOORS MIRROR DEFOGGER DON'T OPERATE BUT REAR WINDOW DEFOGGER OPERATES

< SYMPTOM DIAGNOSIS >

BOTH DOORS MIRROR DEFOGGER DON'T OPERATE BUT REAR WINDOW DEFOGGER OPERATES

Diagnosis Procedure

INFOID:000000007305048

1. CHECK BOTH DOOR MIRROR DEFOGGER

1. Check door mirror LH. Refer to [DEF-16, "Component Function Check"](#).
2. Check door mirror RH. Refer to [DEF-19, "Component Function Check"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-39, "Intermittent Incident"](#).
NO >> Repair or replace the malfunctioning parts.

DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

< SYMPTOM DIAGNOSIS >

DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

Diagnosis Procedure

INFOID:000000007305049

1. CHECK DOOR MIRROR DEFOGGER LH

Check door mirror defogger LH.

Refer to [DEF-16, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Refer to [GI-39, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

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PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

< SYMPTOM DIAGNOSIS >

PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

Diagnosis Procedure

INFOID:000000007305050

1. CHECK DOOR MIRROR DEFOGGER RH

Check door mirror defogger RH.

Refer to [DEF-19, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Refer to [GI-39, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

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:000000007305051

1.CHECK FRONT AIR CONTROL (REAR WINDOW DEFOGGER SWITCH)

Check that the front air control (rear window defogger switch) is operating normally.

Is the inspection result normal?

- YES >> Refer to [GI-39, "Intermittent Incident"](#).
- NO >> Refer to [DEF-10, "Diagnosis Procedure \(2 Control Dial System or Auto A/C\)"](#) or [DEF-11, "Diagnosis Procedure \(3 Control Dial System Without Auto A/C\)"](#).

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000007305052

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 SR and SB section of this Service Manual.

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Handling for Adhesive and Primer

INFOID:000000007305053

- Do not use an adhesive which is past its usable date. Shelf life of this product is limited to six months after the date of manufacture. Carefully adhere to the expiration or manufacture date printed on the box.
- Keep primers and adhesive in a cool, dry place. Ideally, they should be stored in a refrigerator.
- Open the seal of the primer and adhesive just before application. Discard the remainder.
- Before application, be sure to shake the primer container to stir the contents. If any floating material is found, do not use it.
- If any primer or adhesive contacts the skin, wipe it off with gasoline or equivalent and wash the skin with soap.
- When using primer and adhesive, always observe the precautions in the instruction manual.

REAR WINDOW DEFOGGER

< REMOVAL AND INSTALLATION >

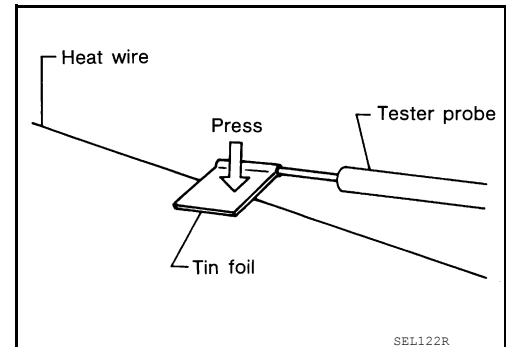
REMOVAL AND INSTALLATION

REAR WINDOW DEFOGGER

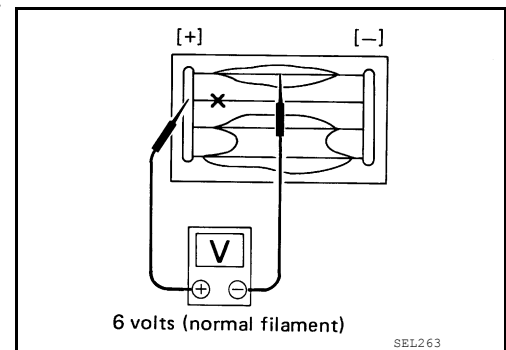
Filament Check

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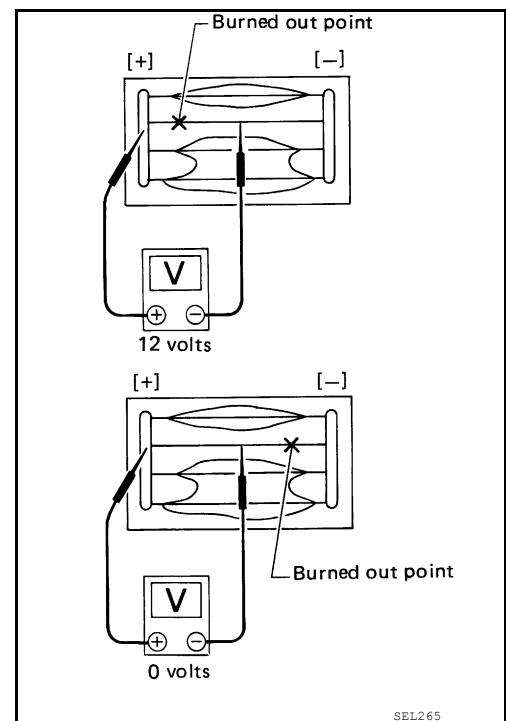
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



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.



Filament Repair

INFOID:000000007305055

REPAIR EQUIPMENT

- Conductive silver composition (DuPont No. 4817 or equivalent)
- Ruler 30 cm (11.8 in) long

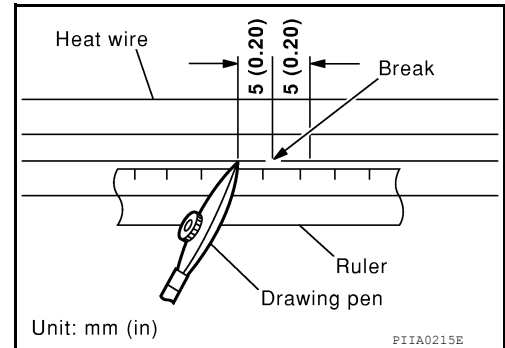
REAR WINDOW DEFOGGER

< REMOVAL AND INSTALLATION >

- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

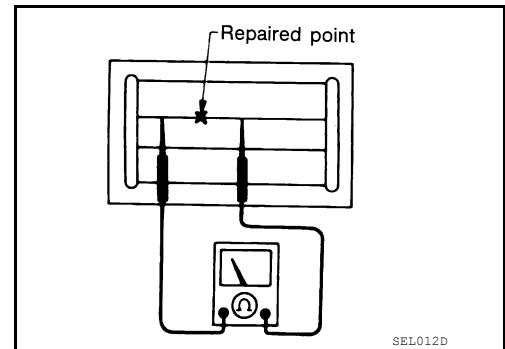
1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. **NOTE:**
Shake silver composition container before use.
Apply a small amount of conductive silver composition to tip of drawing pen.
3. Place ruler on glass along broken line. Deposit conductive silver composition 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.

CAUTION:

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.

