SECTION DEF
DEFOGGER

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000006738322

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 Air bag Diagnosis Sensor Unit or other Air bag 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:0000000006738324

- 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.

Precaution for Work

INFOID:0000000007850444

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

- Water soluble dirt: Dip a soft cloth into lukewarm water, and wring the water out of the cloth to wipe the dirty area.
  Then rub with a soft and dry cloth.

< PRECAUTION >

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

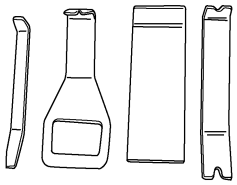
PREPARATION

PREPARATION

Special Service Tool

INFOID:0000000007833459

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

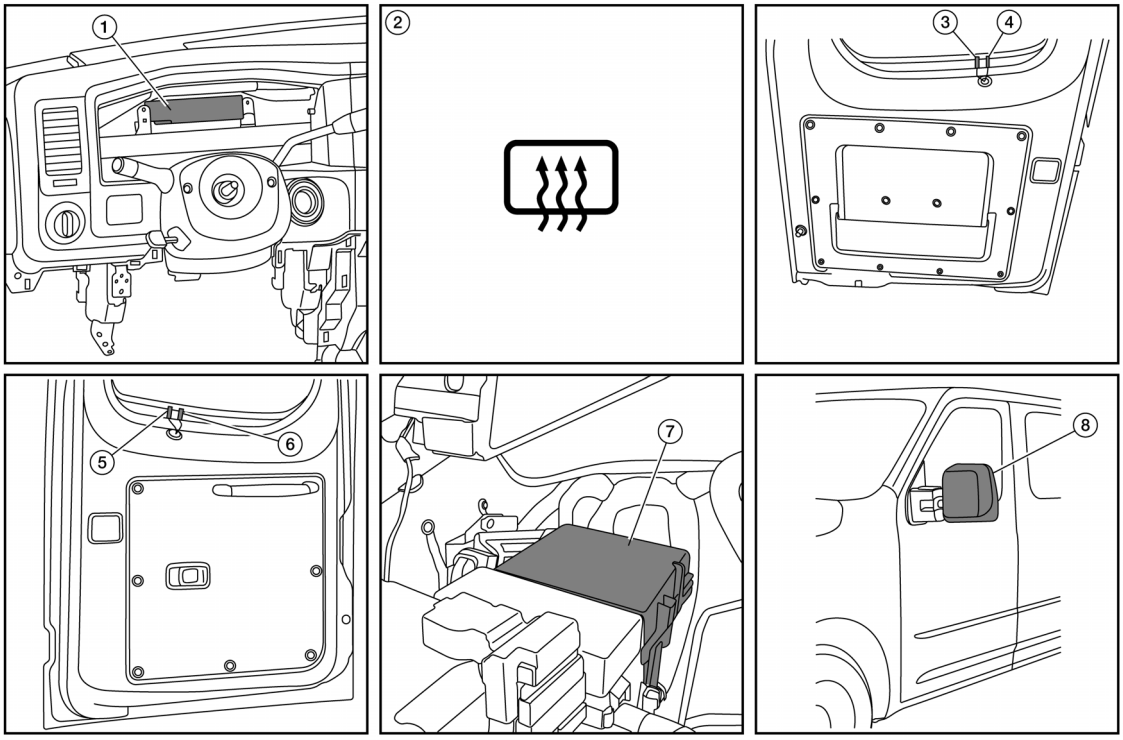
Tool number (Kent-Moore No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000006738282



ALLIA1065ZZ

1. BCM (view with steering wheel and combination meter removed)
2. Rear window defogger switch
3. Rear window defogger power connector, RH
4. Rear window defogger ground connector, RH
5. Rear window defogger power connector, LH
6. Rear window defogger ground connector, LH
7. IPDM E/R (rear window defogger relay, heated mirror relay if equipped)
8. Door Mirror LH (RH similar)

Component Description

INFOID:0000000006959269

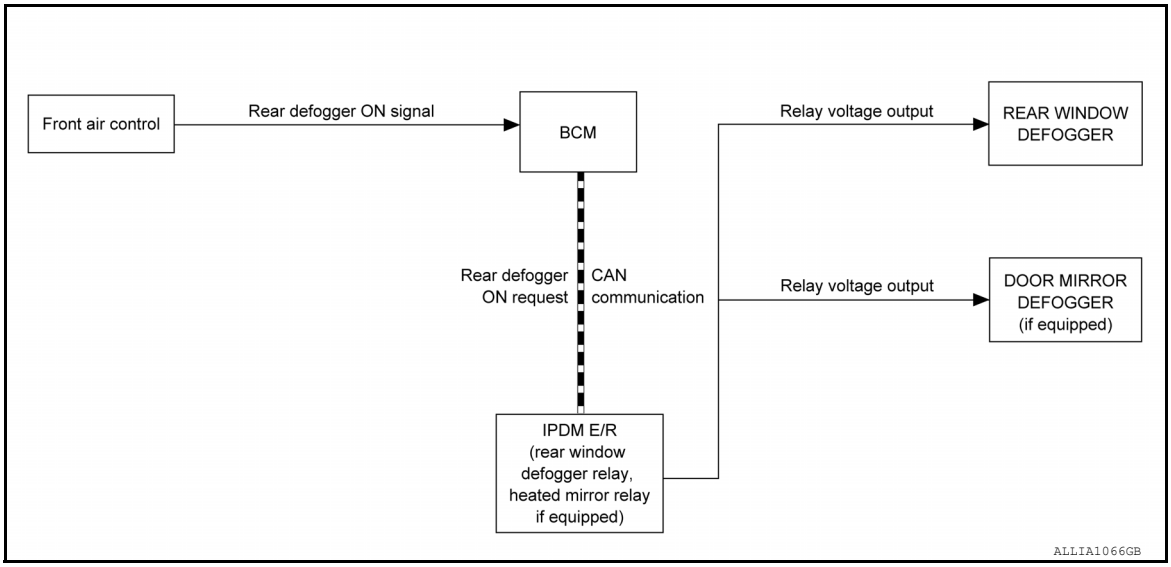
BCM	• Transmits rear window defogger switch operation to IPDM E/R via CAN communication • Performs the timer control of rear window defoggers
IPDM E/R	Controls rear window defogger relay when rear window defogger switch signal is received via CAN communication, and then operates rear window defoggers
Rear window defogger switch	• The rear window defoggers are operated by pressing the rear window defogger switch ON. • The indicator lamp in the rear window defogger switch illuminates when the rear window defoggers are operating.
Rear window defogger relay	Operates the rear window defoggers with the control signal from IPDM E/R
Rear window defoggers	The heating elements heat up when powered by the rear window defogger relay to defog the rear windows or prevent the rear windows from fogging up.
Heated mirror relay*	Operates the door mirror defogger with the control signal from IPDM E/R. Controlled simultaneously with the rear window defogger relay.
Door mirror defogger*	The heating elements heat up when powered by the heated mirror relay to defog the door mirrors or prevent the door mirrors from fogging up.

*:if equipped

SYSTEM

System Diagram

INFOID:0000000006738280



System Description

INFOID:0000000006738281

Operation Description

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

Timer function

- The BCM commands the IPDM E/R to energize the rear window defogger relay and heated mirror relay (if equipped) for approximately 15 minutes when rear window defogger switch is turned ON while ignition switch is ON.
- The 15 minute timer is canceled after pressing rear window defogger switch again during timer operation, otherwise the BCM commands the IPDM E/R to turn the rear window defogger relay and heated mirror relay (if equipped) OFF upon timer expiration. Turning the ignition OFF also cancels the rear window defogger and door mirror defogger (if equipped) operation.

DIAGNOSIS SYSTEM (BCM)
COMMON ITEM
COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000006959258

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			×	×	×		
Rear window defogger	REAR DEFOGGER			×	×			
Warning chime	BUZZER			×	×			
Interior room lamp timer	INT LAMP			×	×	×		
Remote keyless entry system	MULTI REMOTE ENT			×	×	×		
Exterior lamp	HEAD LAMP			×	×	×		
Wiper and washer	WIPER			×	×			
Turn signal and hazard warning lamps	FLASHER			×	×			
Air conditioner	AIR CONDITIONER			×				
Combination switch	COMB SW			×				
BCM	BCM	×	×			×	×	×
Immobilizer	IMMU		×		×			
Interior room lamp battery saver	BATTERY SAVER			×	×	×		
Vehicle security system	THEFT ALM			×	×	×		
RAP system	RETAINED PWR			×		×		
Signal buffer system	SIGNAL BUFFER			×	×			
Panic alarm system	PANIC ALARM				×			

REAR DEFOGGER

REAR DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)

INFOID:0000000006959259

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].

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000007272771

AUTO ACTIVE TEST

Description

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

- Oil pressure low warning indicator
- Rear window defogger (if equipped)
- Front wipers
- Tail, license and parking lamps
- Front fog lamps (if equipped)
- Headlamps (Hi, Lo)
- A/C compressor (magnetic clutch)
- Cooling fan

Operation Procedure

1. Close the hood and front door RH, and lift the wiper arms from the windshield (to prevent windshield damage due to wiper operation).
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn ignition switch OFF.
3. Turn the ignition switch ON and, within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.
4. Turn the ignition switch ON within 10 seconds. After that, the horn sounds once and the auto active test starts.
5. After a series of the following operations is repeated 3 times, auto active test is completed.

NOTE:
When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF.

CAUTION:

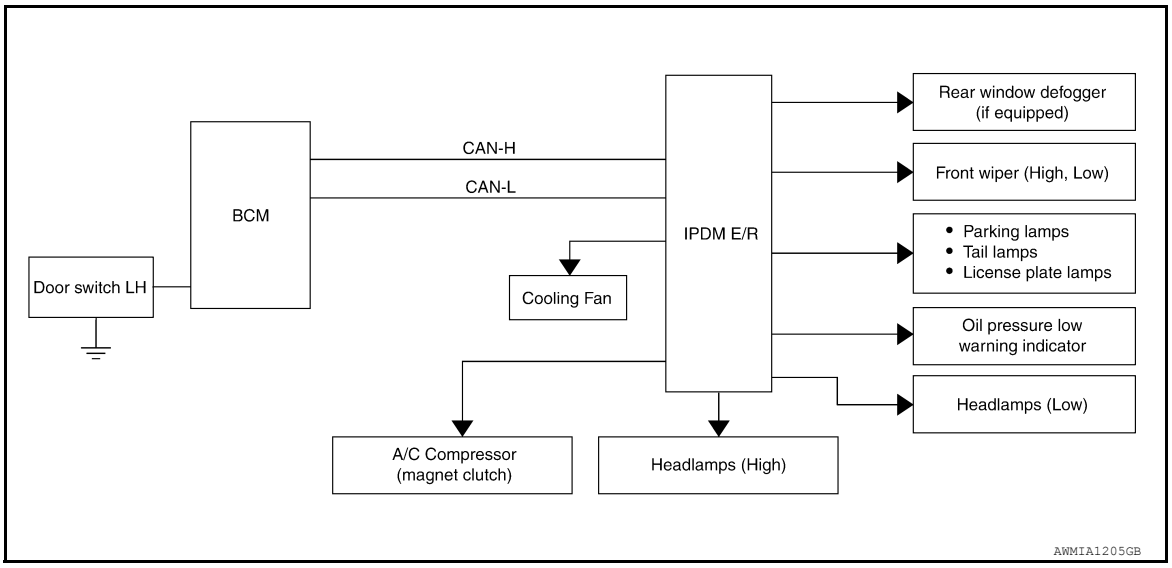
- **If auto active test mode cannot be actuated, check door switch system. Refer to DLK-46, "Description".**
- **Do not start the engine.**

Inspection in Auto Active Test Mode

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

Operation sequence	Inspection Location	Operation
1	Oil pressure low warning indicator	Blinks continuously during operation of auto active test
2	Rear window defogger (if equipped)	10 seconds
3	Front wipers	LO for 5 seconds → HI for 5 seconds
4	Tail, license, parking lamps and front fog lamps (if equipped)	10 seconds
5	Headlamps	LO for 10 seconds → HI on-off for 5 seconds
6	A/C compressor	ON ⇔ OFF 5 times
7	Cooling fan	10 seconds

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Oil pressure low warning indicator does not operate	Perform auto active test. Does the oil pressure low warning indicator blink?	YES	• IPDM E/R signal input circuit • CAN communication signal between ECM and combination meter • Oil pressure switch wiring • Oil pressure switch
		NO	• CAN communication signal between IPDM E/R, BCM and combination meter
Rear window defogger (if equipped) does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	• Harness or connector between front air control • CAN communication signal between BCM and IPDM E/R • Rear window defogger • Rear window defogger ground • IPDM E/R
Any of the following components do not operate • Front wipers • Tail lamps • License plate lamps • Parking lamps • Front fog lamps (if equipped) • Headlamps (Hi, Lo)	Perform auto active test. Does the applicable system operate?	YES	BCM signal input system
		NO	• Lamp or front wiper motor malfunction • Lamp or front wiper motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R

Symptom	Inspection contents		Possible cause
A/C compressor does not operate	Perform auto active test. Does the A/C compressor operate?	YES	• BCM signal input circuit • CAN communication signal between BCM and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnetic clutch malfunction • Harness or connector between IPDM E/R and magnetic clutch • IPDM E/R (integrated relay malfunction)
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	YES	• ECM signal input circuit • CAN communication signal between ECM and IPDM E/R
		NO	• Cooling fan motor malfunction • Harness or connector between IPDM E/R and cooling fan • IPDM E/R (integrated relay malfunction)

CONSULT Function (IPDM E/R)

INFOID:0000000007272772

APPLICATION ITEM

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

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

SELF DIAGNOSTIC RESULT

Refer to PCS-17, "DTC Index".

DATA MONITOR

Monitor Item [Unit]	Main Signals	Description
MOTOR FAN REQ [1/2/3/4]	×	Indicates cooling fan speed signal received from ECM on CAN communication line
AC COMP REQ [On/Off]	×	Indicates A/C compressor request signal received from ECM on CAN communication line
TAIL&CLR REQ [On/Off]	×	Indicates position light request signal received from BCM on CAN communication line
HL LO REQ [On/Off]	×	Indicates low beam request signal received from BCM on CAN communication line
HL HI REQ [On/Off]	×	Indicates high beam request signal received from BCM on CAN communication line
FR FOG REQ [On/Off]	×	Indicates fog lamp request signal received from BCM on CAN communication line
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Indicates front wiper request signal received from BCM on CAN communication line

Monitor Item [Unit]	Main Signals	Description
WIP AUTO STOP [STOP P/ACT P]	×	Indicates condition of front wiper auto stop signal
WIP PROT [Off/BLOCK]	×	Indicates condition of front wiper fail-safe operation
ST RLY REQ [On/Off]		Indicates starter request signal received from ECM on CAN communication line
IGN RLY [On/Off]	×	Indicates condition of ignition relay
RR DEF REQ [On/Off]	×	Indicates rear defogger request signal received from AV control unit on CAN communication line
OIL P SW [Open/Close]		Indicates condition of oil pressure switch
DTRL REQ [On/Off]		Indicates daytime light request signal received from BCM on CAN communication line
THFT HRN REQ [On/Off]		Indicates theft warning horn request signal received from BCM on CAN communication line
HORN CHIRP [On/Off]		Indicates horn reminder signal received from BCM on CAN communication line

ACTIVE TEST

Test item	Description
REAR DEFOGGER	This test is able to check rear defogger operation [On/Off].
FRONT WIPER	This test is able to check wiper motor operation [Hi/Lo/Off].
MOTOR FAN	This test is able to check cooling fan operation [4/3/2/1].
EXTERNAL LAMPS	This test is able to check external lamp operation [Hi/Lo/TAIL/Fog/Off].
HORN	This test is able to check horn operation [On].

CAN DIAG SUPPORT MNTR

Refer to LAN-12, "CAN Diagnostic Support Monitor".

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000006959260

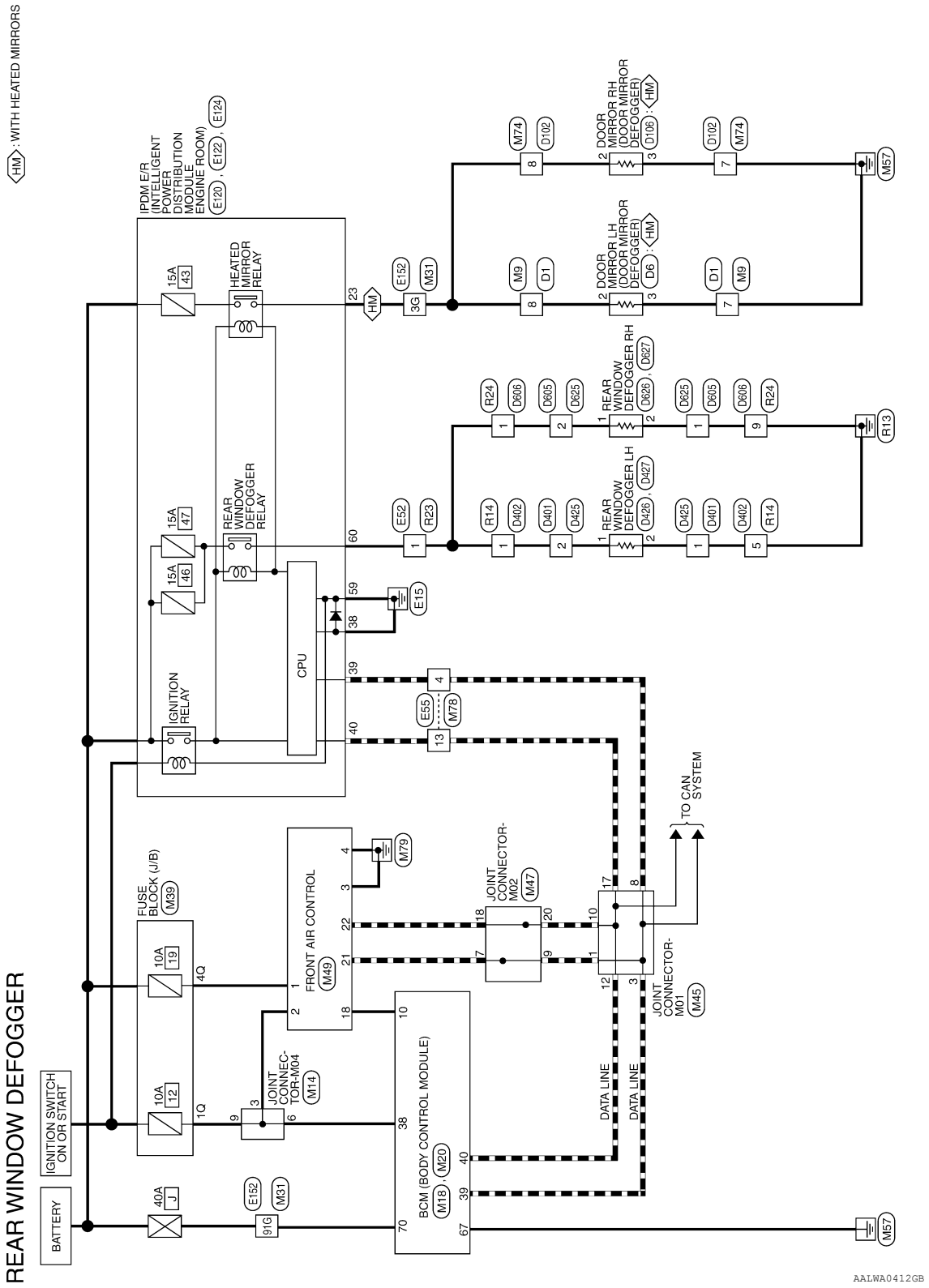
ECU	Reference
BCM	BCS-25, "Reference Value"
	BCS-35, "Fail-safe"
	BCS-35, "DTC Inspection Priority Chart"
	BCS-35, "DTC Index"
IPDM E/R	PCS-13, "Physical Values"
	PCS-16, "Fail Safe"
	PCS-17, "DTC Index"

WIRING DIAGRAM

REAR WINDOW DEFOGGER

Wiring Diagram

INFOID:0000000006738315



REAR WINDOW DEFOGGER CONNECTORS

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
7	B	–
8	G	–

Connector No.	M14
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE

H.S.

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
3	R	–
6	R	–
9	R	–

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

H.S.

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

Terminal No.	Color of Wire	Signal Name
10	BR	REAR DEFOGGER SW
38	R	IGN SW
39	L	CAN-H
40	P	CAN-L

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

H.S.

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

Terminal No.	Color of Wire	Signal Name
67	B	GND
70	R	BATTERY (F/L)

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

H.S.

1G	2G	3G	4G	5G
6G	7G	8G	9G	10G

11G	12G	13G	14G	15G	16G	17G	18G	19G	20G	21G
22G	23G	24G	25G	26G	27G	28G	29G	30G		

31G	32G	33G	34G	35G	36G	37G	38G	39G	40G	41G
42G	43G	44G	45G	46G	47G	48G	49G	50G		

51G	52G	53G	54G	55G	56G	57G	58G	59G	60G	61G
62G	63G	64G	65G	66G	67G	68G	69G	70G		

71G	72G	73G	74G	75G	76G	77G	78G	79G	80G	81G
82G	83G	84G	85G	86G	87G	88G	89G	90G		

91G	92G	93G	94G	95G
96G	97G	98G	99G	100G

Terminal No.	Color of Wire	Signal Name
3G	G	–
91G	R	–

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Connector No.	M39
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1Q	R	–
4Q	Y	–

Connector No.	M45
Connector Name	JOINT CONNECTOR-M01
Connector Color	BLUE

H.S.

Terminal No.	Color of Wire	Signal Name
1	L	–
3	L	–
8	L	–
10	P	–
12	P	–
17	P	–

Connector No.	M47
Connector Name	JOINT CONNECTOR-M02
Connector Color	GREEN

H.S.

Terminal No.	Color of Wire	Signal Name
7	L	–
9	L	–
18	P	–
20	P	–

Connector No.	M49
Connector Name	FRONT AIR CONTROL
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	Y	BAT
2	R	IGN
3	B	GND
4	B	POWER GND
18	BR	R. DEF ON
21	L	CAN-H
22	P	CAN-L

Connector No.	M74
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
7	B	–
8	G	–

Connector No.	M78
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
4	L	–
13	P	–

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Connector No.	E52
Connector Name	WIRE TO WIRE
Connector Color	BROWN

H.S.

1

Terminal No.	Color of Wire	Signal Name
1	R	–

Connector No.	E55
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
4	L	–
13	P	–

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

H.S.

19 20 21
22 23 24

Terminal No.	Color of Wire	Signal Name
23	G	HEATED MIRROR

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

H.S.

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

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

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

H.S.

57 58 59
60 61 62

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

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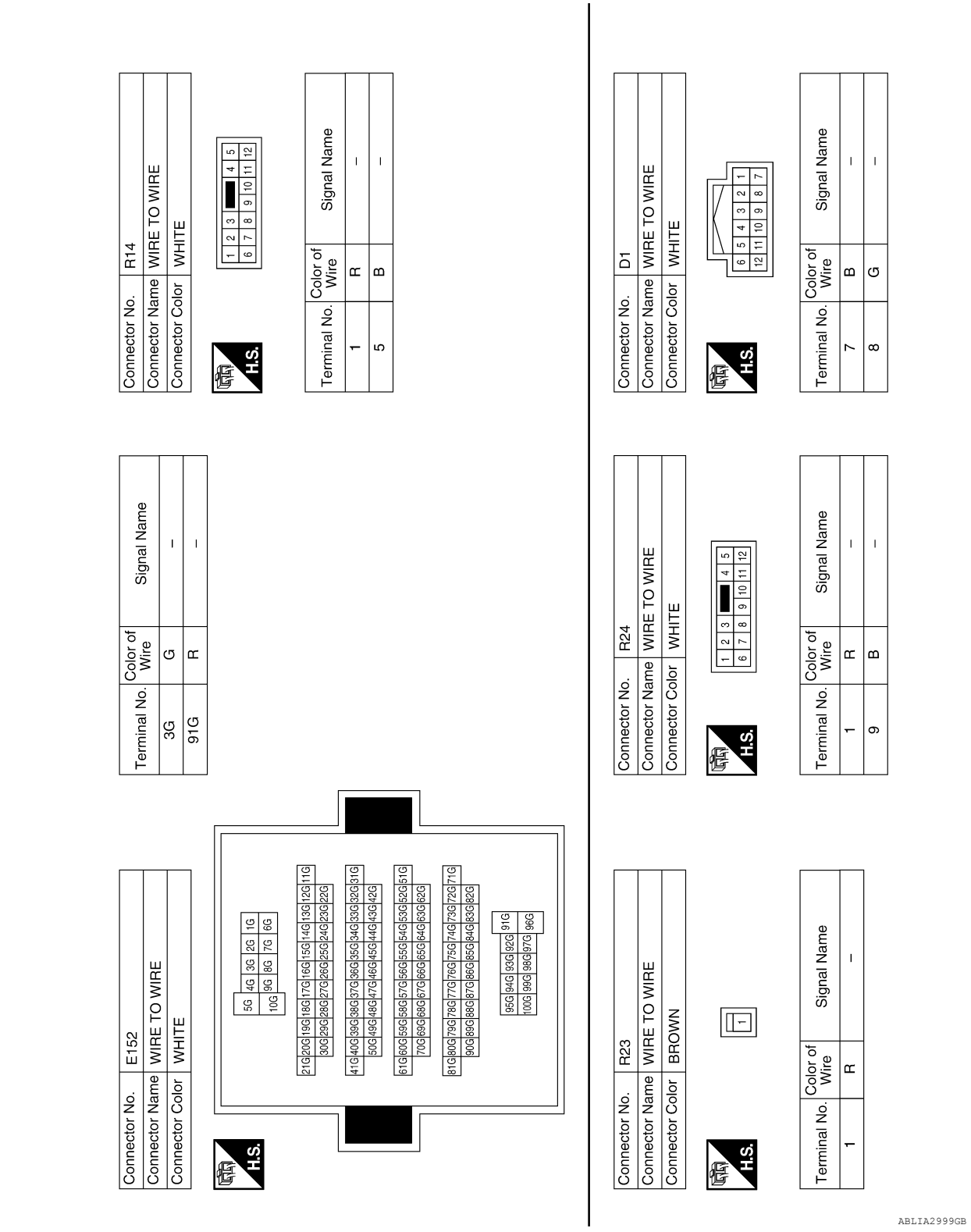
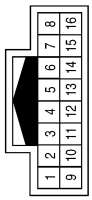

Connector No. E152
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
3G G –
91G R –
Connector No. R14
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
1 R –
5 B –
Connector No. R23
Connector Name WIRE TO WIRE
Connector Color BROWN
H.S.
Terminal No. Color of Wire Signal Name
1 R –
Connector No. R24
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
1 R –
9 B –
Connector No. D1
Connector Name WIRE TO WIRE
Connector Color WHITE
H.S.
Terminal No. Color of Wire Signal Name
7 B –
8 G –
ABLIA2999GB

Connector No.	D106
Connector Name	DOOR MIRROR RH
Connector Color	WHITE

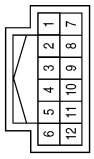
H.S.



Terminal No.	Color of Wire	Signal Name
2	G	–
3	B	–

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

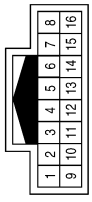
H.S.



Terminal No.	Color of Wire	Signal Name
7	B	–
8	G	–

Connector No.	D6
Connector Name	DOOR MIRROR LH
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
2	G	–
3	B	–

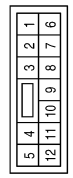
Connector No.	D425
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
2	R	–

Connector No.	D402
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1	R	–
5	B	–

Connector No.	D401
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
2	R	–

ABLIA3000GB

Connector No.	D605
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
2	R	–

Connector No.	D626
Connector Name	REAR WINDOW DEFOGGER RH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–

Connector No.	D427
Connector Name	REAR WINDOW DEFOGGER LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
2	B	–

Connector No.	D625
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	B	–
2	R	–

Connector No.	D426
Connector Name	REAR WINDOW DEFOGGER LH
Connector Color	BLACK

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–

Connector No.	D606
Connector Name	WIRE TO WIRE
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	R	–
9	B	–

ABLIA3001GB

Connector No.	D627
Connector Name	REAR WINDOW DEFOGGER RH
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
2	B	–

ABLIA3002GB

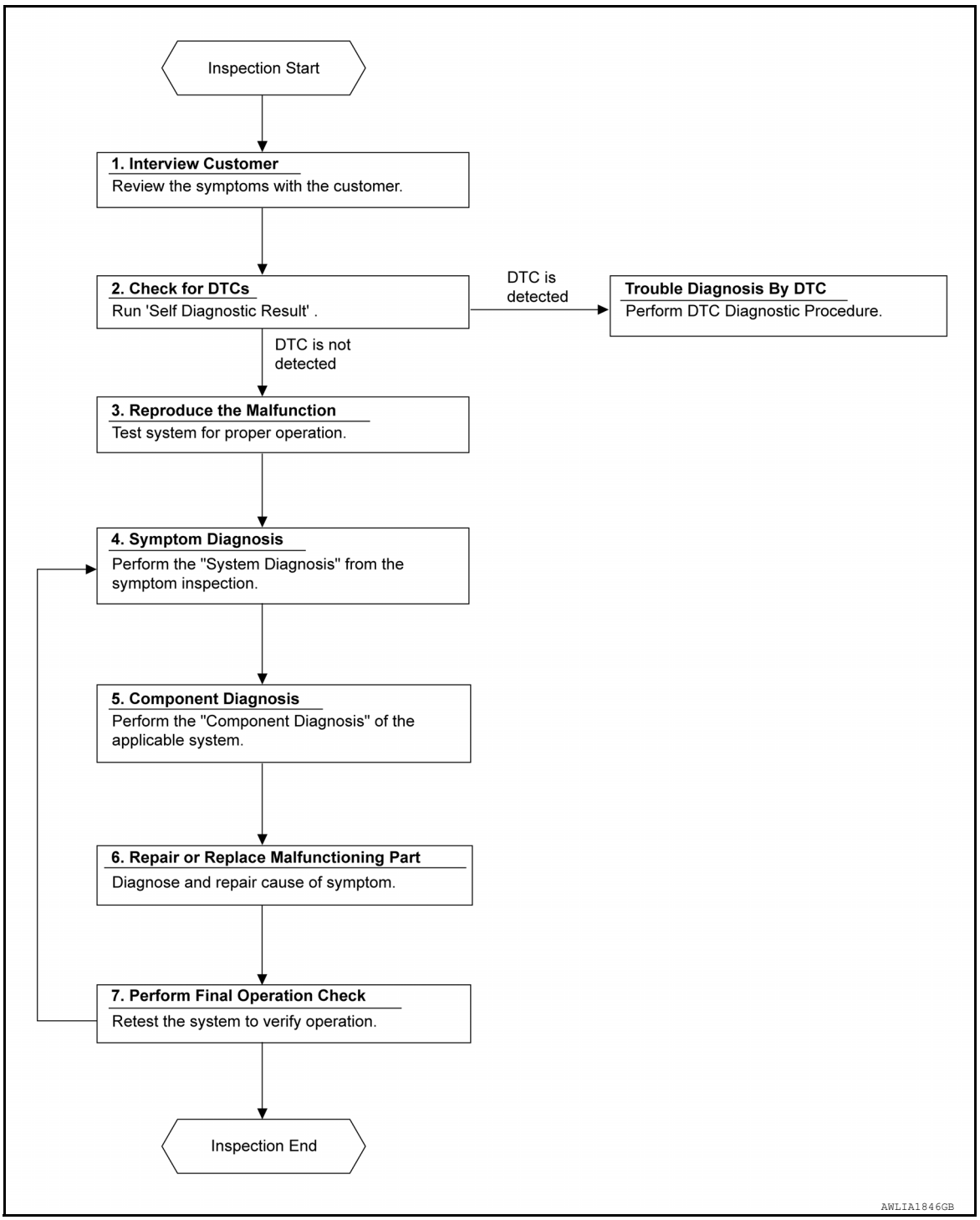
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000006959298

OVERALL SEQUENCE



OPERATION INSPECTION

Work Procedure

INFOID:0000000006738279

DETAILED FLOW

1. INTERVIEW CUSTOMER

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

>> GO TO 2

2. CHECK FOR DTC

Perform self-diagnosis with CONSULT.

Is any DTC detected?

YES-1 >> BCM: Refer to BCS-35, "DTC Index".
YES-2 >> IPDM E/R: Refer to PCS-17, "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 THE MALFUNCTIONING PARTS WITH “DTC/CIRCUIT DIAGNOSIS”

Perform the diagnosis with “DTC/CIRCUIT 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 the malfunctions corrected?

YES >> Inspection End.
NO >> GO TO 4

DTC/CIRCUIT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH

Description

INFOID:0000000006738286

- 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

INFOID:0000000006738287

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

1. Turn ignition switch ON.
2. Check that the indicator lamp of rear window defogger illuminates with rear window defogger switch ON.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Refer to HAC-205, "FRONT A/C CONTROL : Diagnosis Procedure".

2. CHECK REAR DEFOGGER ON STATUS

1. Using CONSULT, select "BCM (REAR DEFOGGER)", then "Data Monitor" mode.
2. Select "REAR DEF SW" and monitor while pressing the rear DEF switch ON and OFF.

Monitored Item	Condition	Status
REAR DEF SW	Rear DEF switch ON (LED ON)	On
	Rear DEF switch OFF (LED OFF)	Off

Is the inspection result normal?

YES >> Inspection End.
NO >> Refer to DEF-26, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006738288

Regarding Wiring Diagram information, refer to DEF-16, "Wiring Diagram".

1. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect front air control.
3. Turn ignition switch ON.
4. Check voltage between front air control connector M49 terminal 18 and ground.

Front air control connector	Terminal	Ground	Voltage
M49	18		Yes

Is the inspection result normal?

YES >> Replace front air control. Refer to HAC-212, "Removal and Installation - Front Air Control" (manual A/C) or HAC-110, "Removal and Installation - Front Air Control" (automatic A/C).
NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM.
3. Check continuity between BCM connector M18 terminal 10 and front air control connector M49 terminal 18.

BCM connector	Terminal	Front air control connector	Terminal	Continuity
M18	10	M49	18	Yes

4. Check continuity between BCM connector M18 terminal 10 and ground.

BCM connector	Terminal	Ground	Continuity
M18	10		No

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-55, "Removal and Installation".
NO >> Repair or replace harness.

REAR WINDOW DEFOGGER RELAY

Description

INFOID:0000000006738289

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

Component Function Check

INFOID:0000000006738290

1. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. 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-28, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006738291

Regarding Wiring Diagram information, refer to DEF-16, "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 >> Replace the fuse after repairing the affected circuit.

2. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R connector E124 terminal 60 and ground.

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

Is the inspection result normal?

YES >> GO TO 3
NO >> Replace IPDM E/R. Refer to PCS-24, "Removal and Installation".

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 POWER SUPPLY AND GROUND CIRCUIT

Description

INFOID:0000000006738292

Heats the heating element with the power supply from the rear window defogger relay to defog the rear windows, or to prevent the rear windows from fogging up.

Component Function Check

INFOID:0000000006738293

1. CHECK REAR WINDOW DEFOGGER

1. Turn ignition switch ON.
2. Check that the heating element of rear window defoggers are heated when turning the rear window defogger switch ON.

Is the inspection result normal?

YES >> Rear window defogger is OK.
NO >> Refer to DEF-29, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006738294

Regarding Wiring Diagram information, refer to DEF-16, "Wiring Diagram".

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between rear window defogger connectors D426 and D626 terminal 1 and ground.

Terminals			Condition of rear window defogger switch	Voltage (V) (Approx.)
(+)		(–)		
Rear window defogger connectors	Terminal			
D426 and D626	1	Ground	ON	Battery voltage
			OFF	0V

Is the inspection result normal?

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

2. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear window defogger.
3. Check continuity between rear window defogger connectors D427 and D627 terminal 2 and ground.

Rear window defogger connectors	Terminal	Ground	Continuity
D427 and D627	2		Yes

Is the inspection result normal?

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

3. CHECK HARNESS CONTINUITY

1. Disconnect IPDM E/R.
2. Check continuity between rear window defogger connectors D426 and D626 terminal 1 and IPDM E/R connector E124 terminal 60.

Rear window defogger connectors	Terminal	IPDM E/R connector	Terminal	Continuity
D426 and D626	1	E124	60	Yes

3. Check continuity between rear window defogger connectors D426 and D626 terminal 1 and ground.

Rear window defogger connector	Terminal	Ground	Continuity
D426 and D626	1		No

Is the inspection result normal?

YES >> GO TO 5
NO >> Replace or repair harness.

4. CHECK FILAMENT

Check filament.
Refer to DEF-30, "Component Inspection".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair filament. Refer to DEF-42, "Inspection and Repair".

5. 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

INFOID:0000000006738295

1. CHECK FILAMENT

Check the filament for damage or open circuits.
Refer to DEF-42, "Inspection and Repair".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair filament. Refer to DEF-42, "Inspection and Repair".

DOOR MIRROR DEFOGGER

Description

INFOID:0000000006959273

Heats the heating element with the power supplied from the heated mirror relay to defog the door mirror or to prevent the door mirror from fogging up.

Component Function Check

INFOID:0000000006959274

1.CHECK DOOR MIRROR DEFOGGER

1. Turn ignition switch ON.
2. Press rear DEF switch to ON (LED ON)
3. Check that both side door mirror glasses are getting warmer.

Is the inspection result normal?

YES >> Door mirror defogger is OK.
NO >> Refer to DEF-31, "Diagnosis Procedure"

Diagnosis Procedure

INFOID:0000000006959275

Regarding Wiring Diagram information, refer to DEF-16, "Wiring Diagram".

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check 15A fuse [No.43, located in fuse block (J/B)].

Is the inspection result normal?

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

2.CHECK DOOR MIRROR DEFOGGER POWER SUPPLY

1. Disconnect door mirror LH (door mirror defogger) D6 and door mirror RH (door mirror defogger) D106 connectors.
2. Turn ignition switch ON.
3. Turn rear defogger switch ON.
4. Check for voltage between door mirror LH (door mirror defogger) D6 and door mirror RH (door mirror defogger) D106 and ground.

IPDM E/R		Door mirror LH and RH (door mirror defogger)		Voltage
Connector	Terminal	Connector	Terminal	
E120	23	D6	2	Battery Voltage
		D106		

Is the inspection result normal?

YES >> Replace inoperative door mirror. Refer to MIR-19, "Removal and Installation - Door Mirror Glass".
NO >> GO TO 3.

3.CHECK DOOR MIRROR DEFOGGER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector E120.
3. Check continuity between IPDM E/R harness connector and door mirror LH (door mirror defogger) and door mirror RH (door mirror defogger) harness connectors.

IPDM E/R		Door mirror LH and RH (door mirror defogger)		Continuity
Connector	Terminal	Connector	Terminal	
E120	23	D6	2	Yes
		D106		

4. Check continuity between IPDM E/R harness connector E120 and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E120	23		No

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-24, "Removal and Installation".
NO >> Repair or replace harness.

DRIVER SIDE DOOR MIRROR DEFOGGER

Description

INFOID:0000000006959276

Heats the heating element with the power supply from the heated mirror relay to defog the door mirror, or prevent the door mirror from fogging up.

Component Function Check

INFOID:0000000006959277

1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

1. Turn ignition switch ON.
2. Press rear DEF switch to ON (LED 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-33, "Diagnosis Procedure"

Diagnosis Procedure

INFOID:0000000006959278

Regarding Wiring Diagram information, refer to DEF-16, "Wiring Diagram".

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				
D6	2	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0V

Is the inspection result normal?

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

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		
D6	3		Yes

Is the inspection result normal?

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

PASSENGER SIDE DOOR MIRROR DEFOGGER

Description

INFOID:0000000006959279

Heats the heating element with the power supply from the heated mirror relay to defog the door mirror, or to prevent the door mirror from fogging up.

Component Function Check

INFOID:0000000006959280

1.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

1. Turn ignition switch ON.
2. Press rear DEF switch to ON (LED 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-34, "Diagnosis Procedure"

Diagnosis Procedure

INFOID:0000000006959281

Regarding Wiring Diagram information, refer to DEF-16, "Wiring Diagram".

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				
D106	2	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0V

Is the inspection result normal?

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

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		
D106	2		Yes

Is the inspection result normal?

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

SYMPTOM DIAGNOSIS

DEFOGGER SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000006962872

Symptom	Reference page
Rear window defoggers and door mirror defoggers* do not operate.	Refer to DEF-36, "Diagnosis Procedure".
Rear window defoggers do not operate but both of the door mirror defoggers* operate.	Refer to DEF-37, "Diagnosis Procedure".
Both door mirror defoggers* don't operate but rear window defoggers operate.	Refer to DEF-38, "Diagnosis Procedure".
Driver side door mirror defogger* does not operate.	Refer to DEF-39, "Diagnosis Procedure".
Passenger side door mirror defogger* does not operate.	Refer to DEF-40, "Diagnosis Procedure".
Rear window defogger switch does not light, but rear window defogger operates.	Refer to DEF-41, "Diagnosis Procedure".

*:if equipped

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

Diagnosis Procedure

INFOID:0000000006738316

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.
Refer to DEF-26, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 2
NO >> Repair or replace the malfunctioning parts.

2. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.
Refer to DEF-29, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the malfunctioning parts.

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

Diagnosis Procedure

INFOID:0000000006738317

1. CHECK REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

Check rear window defogger power supply and ground circuit.
Refer to DEF-29, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the malfunctioning parts.

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

Diagnosis Procedure

INFOID:0000000006738318

1. CHECK DOOR MIRROR DEFOGGER

Check door mirror defogger.
Refer to DEF-31, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the malfunctioning parts.

DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

Diagnosis Procedure

INFOID:0000000006738319

1. CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

Check driver side door mirror defogger.
Refer to DEF-33, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the malfunctioning parts.

PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

Diagnosis Procedure

INFOID:0000000006738320

1. CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

Check passenger side door mirror defogger.
Refer to DEF-34, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace the malfunctioning parts.

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

Diagnosis Procedure

INFOID:0000000006738321

1.CHECK FRONT AIR CONTROL

1. Turn ignition switch ON.
2. Check that the rear DEF LED illuminates when pressed.

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace front air control. Refer to HAC-212, "Removal and Installation - Front Air Control" (manual A/C) or HAC-110, "Removal and Installation - Front Air Control" (automatic A/C).

REMOVAL AND INSTALLATION

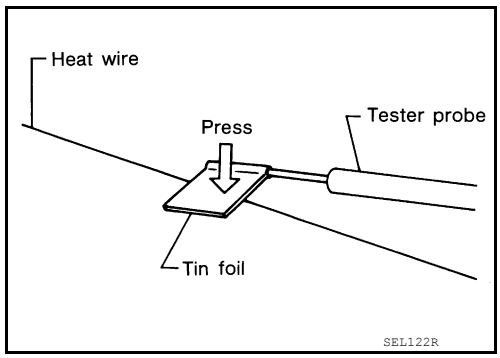
FILAMENT

Inspection and Repair

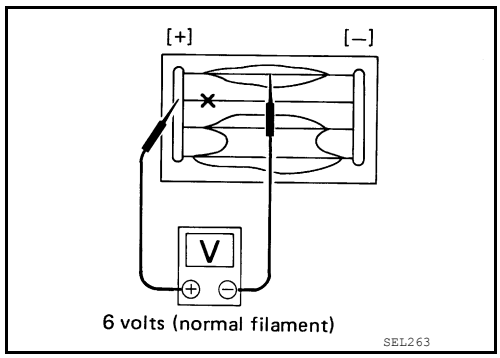
INFOID:0000000006738325

INSPECTION

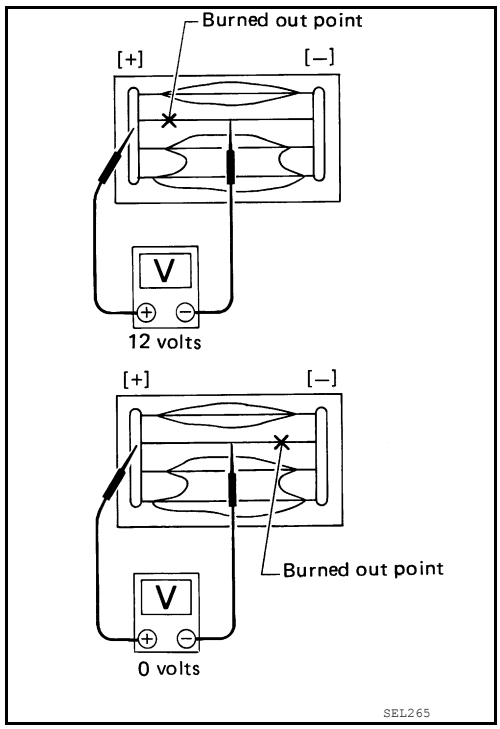
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



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

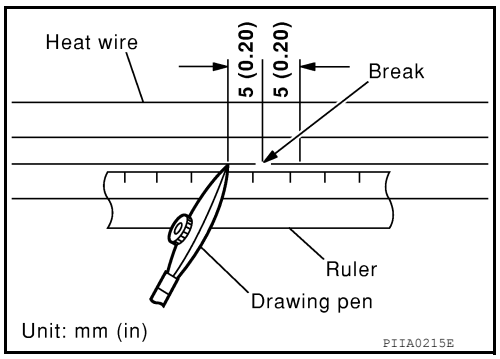
REPAIR EQUIPMENT

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

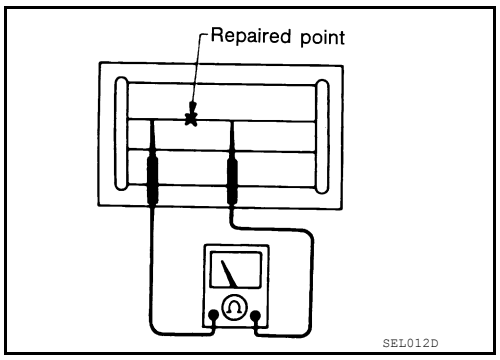
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

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.
   NOTE:
   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.