SECTION DEF
DEFOGGER

CONTENTS

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000006201566

DETAILED FLOW

1.OBTAIN INFORMATION ABOUT SYMPTOM

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

>> GO TO 2.

2.CHECK DTC

Perform self diagnosis with CONSULT-III

Is any DTC detected?

YES >> Refer to BCS-62, "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 “COMPONENT DIAGNOSIS”

Perform the diagnosis with “Component diagnosis” of the applicable system.

>> GO TO 6.

6.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 7.

7.FINAL CHECK

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

Are all malfunctions corrected?

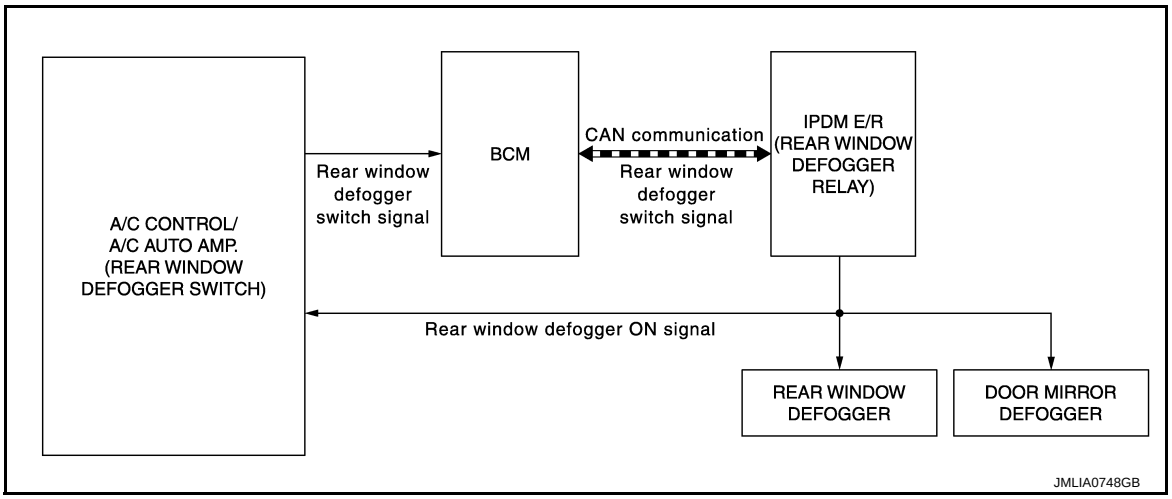
YES >> INSPECTION END
NO >> GO TO 4.

SYSTEM DESCRIPTION

REAR WINDOW DEFOGGER SYSTEM

System Diagram

INFOID:0000000006201567



System Description

INFOID:0000000006201568

OPERATION DESCRIPTION

- BCM detects that the rear window defogger switch is turned ON when the ignition switch is ON, and then transmits the rear window defogger switch signal to IPDM E/R via CAN communication for approximately 15 minutes.
- IPDM E/R turns rear window defogger relay ON when it receives the rear window defogger switch signal.
- The power is supplied by IPDM E/R to the rear window defogger and door mirror defogger (with door mirror defogger) when the rear window defogger relay is turned ON.

TIMER FUNCTION

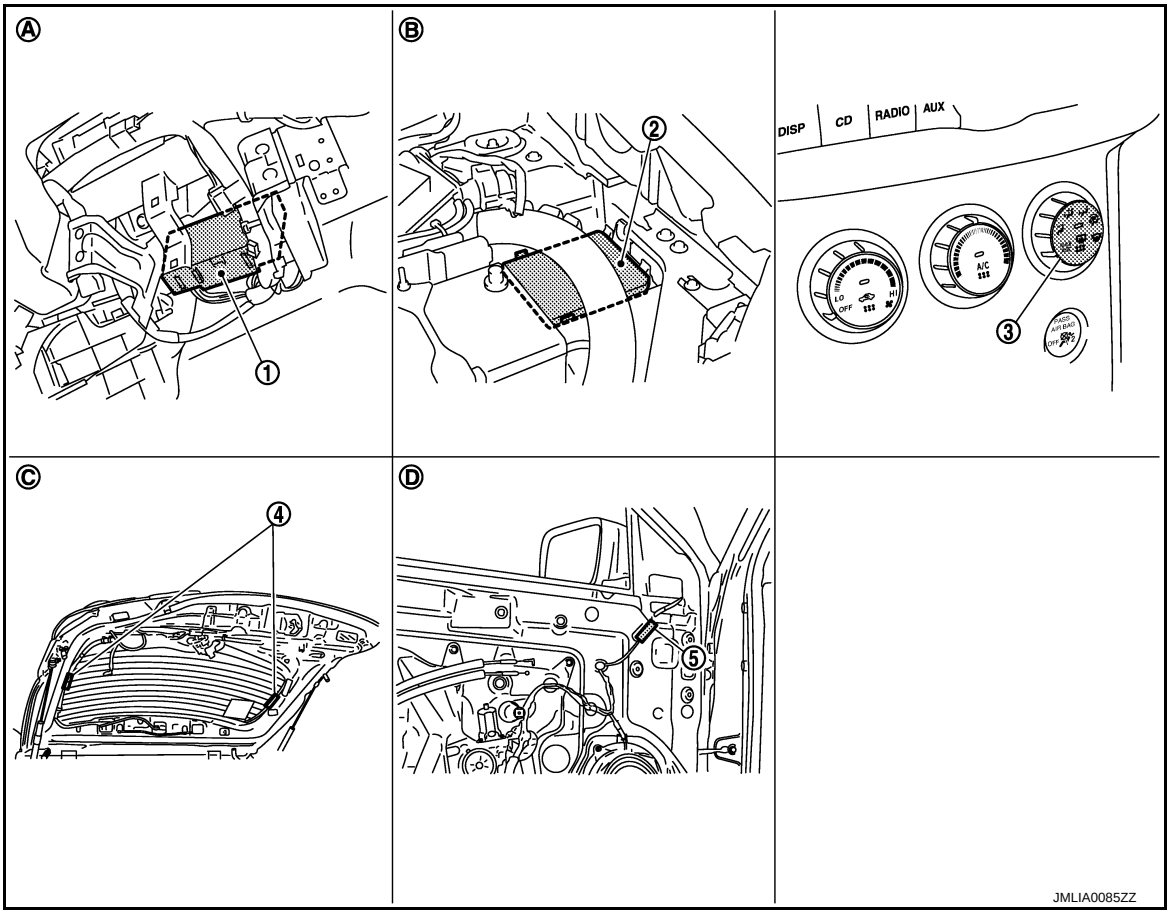
- BCM transmits the rear window defogger switch signal to IPDM E/R for approximately 15 minutes when the rear window defogger switch is turned ON with the ignition switch ON. Then, IPDM E/R operates the rear window defogger and door mirror defogger (with door mirror defogger).
- The timer is cancelled if the rear window defogger switch is pressed again during timer operation. Then BCM stops the output of rear window defogger switch signal. 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	Acutuator
Rear window defogger switch	Defogger switch signal	Rear window defogger & Door mirror defogger control	Rear window defogger Door mirror defogger
Ignition switch	Ignition switch ON signal Ignition switch ACC signal		

Component Parts Location

INFOID:0000000006201569



1. BCM M65, M67
2. IPDM E/R E11, E13
3. Rear window defogger switch (built in AUTO amp.)*1 M54, M55 (buil in A/C amp.)*2 M50
4. Rear window defogger D160, D185
5. Door mirror defogger D3, D43
A. Behind glove box
B. Engine room (LH)
C. Behind back door side finisher
D. Behind front door finisher

*1 : With auto A/C

*2 : With manual A/C

Component Description

INFOID:0000000006201570

BCM	• Rear window defogger switch operation is transmitted to IPDM E/R via CAN communication. • Performs the timer control of rear window defogger.
Rear window defogger relay	• Operates the rear window defogger and the door mirror defogger relay with the control signal from IPDM E/R.
Door mirror defogger relay	• Operates the door mirror defogger with the control signal from IPDM E/R (rear window defogger relay).
IPDM E/R	• BCM controls rear window defogger relay via CAN communication, and then operates rear window defogger or door mirror defogger.
AUTO A/C amp.*1 A/C amp.*2 (Rear window defogger switch)	• The rear window defogger switch is installed. • 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.
Door mirror defogger	• Heats the heating wire with the power supply from the rear window defogger relay to prevent the door mirror from fogging up.

*1 :With auto A/C
*2 :With manual A/C

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

INFOID:0000000006521768

APPLICATION ITEM
CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

Diagnosis mode	Function description
ECU Identification	BCM part number is displayed.
Self-Diagnostic Result	Displays the diagnosis results judged by BCM. Refer to BCS-62, "DTC Index".
Data Monitor	BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Work Support	Changes the setting for each system function.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.

SYSTEM APPLICATION
BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

System	CONSULT-III sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
• Auto air conditioning system • Manual air conditioning system	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Body control system	BCM	×		
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
—	FUEL LID*			
TPMS	TPMS (AIR PRESSURE MONITOR)	×	×	×
Panic alarm system	PANIC ALARM			×

*: This item is displayed, but is not function.

REAR WINDOW DEFOGGER

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

INFOID:0000000006201572

Data monitor

Monitor Item	Description
REAR DEF SW	Displays “Press (ON)/other (OFF)” status determined with the rear window defogger switch.
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.

ACTIVE TEST

Test Item	Description
REAR DEFOGGER	This test is able to check rear window defogger operation.

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000006521769

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 warning lamp
- Rear window defogger
- Front wiper (LO, HI)
- Parking lamp
- License plate lamp
- Tail lamp
- Side marker lamp
- Front fog lamp
- Headlamp (LO, HI)
- A/C compressor (magnet clutch)
- Cooling fan (LO, MID, HI)

Operation procedure

1. Close the hood and lift the wiper arms from the windshield. (Prevent windshield damage due to wiper operation)
   NOTE:
   When auto active test is performed with hood opened, sprinkle water on windshield beforehand.
2. Turn the ignition switch OFF.
3. Turn the ignition switch ON, and within 20 seconds, press the driver door switch 10 times. Then turn the ignition switch OFF.
   CAUTION:
   Close passenger door.
4. Turn the ignition switch ON within 10 seconds. Then the horn sounds once and the auto active test starts.
   NOTE:
   Only a vehicle with the vehicle security system, the horn sounds.
5. The oil pressure warning lamp starts blinking when the auto active test starts.
6. After a series of the following operations is repeated 3 times, auto active test is completed.

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

CAUTION:
- **If auto active test mode cannot be actuated, check door switch system.**
- **Never start the engine.**

Inspection in auto active test mode

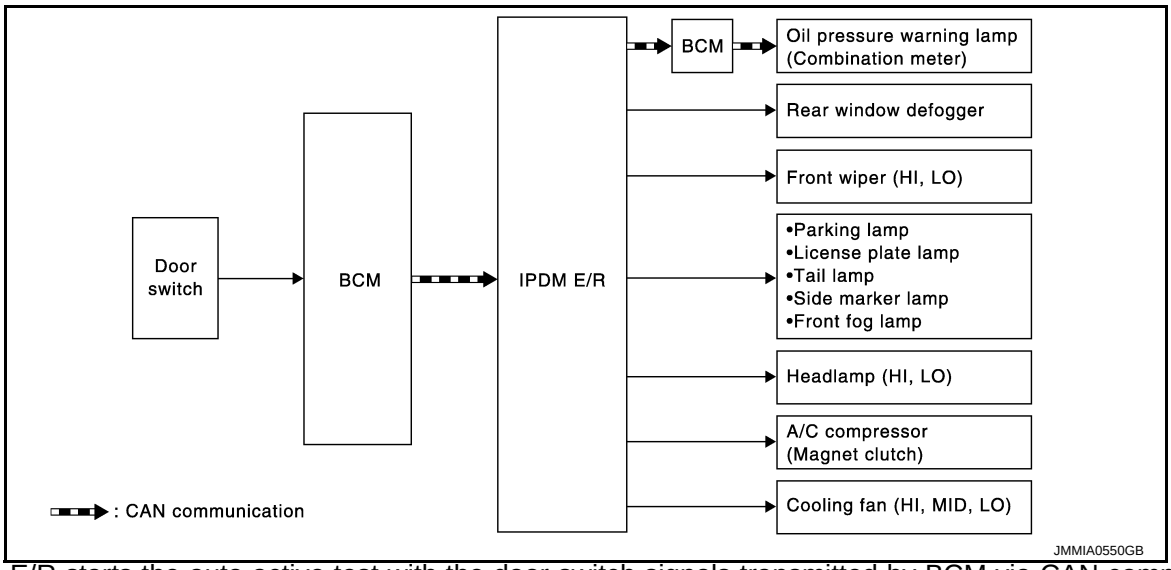
When auto active test mode is actuated, the following 6 steps are repeated 3 times.

Operation sequence	Inspection location	Operation
A	Oil pressure warning lamp	Blinks continuously during operation of auto active test.
1	Rear window defogger	10 seconds
2	Front wiper motor	LO for 5 seconds → HI for 5 seconds
3	• Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp • Headlamps HI (daytime running light operation)*	10 seconds
4	Headlamp	LO 10 seconds → ⇔ OFF 5 times
5	A/C compressor (magnet clutch)	ON ⇔ OFF 5 times
6	Cooling fan	LO for 5 seconds → MID for 3 seconds → HI for 2 seconds

NOTE:

*: With daytime running light system

Concept of auto active test



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

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	YES	BCM signal input circuit
		NO	• Rear window defogger • Rear window defogger ground circuit • Harness or connector between IPDM E/R and rear window defogger • IPDM E/R
Any of the following components do not operate • Parking lamp • License plate lamp • Tail lamp • Side marker lamp • Front fog lamp • Headlamp (HI, LO) • Front wiper motor (HI, LO)	Perform auto active test. Does the applicable system operate?	YES	BCM signal input circuit
		NO	• Lamp or motor • Lamp or motor ground circuit • Harness or connector between IPDM E/R and applicable system • IPDM E/R
Headlamps HI (daytime running light operation) do not operate	Perform auto active test. Do headlamps HI (daytime running light operation) operate?	YES	• CAN communication signal between ECM and BCM • CAN communication signal between combination meter and BCM • BCM signal input circuit
		NO	• Daytime running light relay power supply circuit • Harness or connector between IPDM E/R and daytime running light relay • Daytime running light relay

Symptom	Inspection contents		Possible cause
A/C compressor does not operate	Perform auto active test. Does the magnet clutch operate?	YES	• BCM signal input circuit • CAN communication signal between BCM and ECM • CAN communication signal between ECM and IPDM E/R
		NO	• Magnet clutch • Harness or connector between IPDM E/R and magnet clutch • IPDM E/R
Oil pressure warning lamp does not operate	Perform auto active test. Does the oil pressure warning lamp blink?	YES	• Harness or connector between IPDM E/R and oil pressure switch • Oil pressure switch • IPDM E/R
		NO	• CAN communication signal between IPDM E/R and BCM • CAN communication signal between BCM and combination meter • Combination meter
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-2 power supply circuit • Cooling fan motor-1 ground circuit • Cooling fan relay-4 or cooling fan relay-5 power supply circuit • Cooling fan relay-5 ground circuit • Harness or connector between IPDM E/R and cooling fan motor • Harness or connector between IPDM E/R, and cooling fan relay-4 or cooling fan relay-5 • Harness or connector between cooling fan motor-2, and cooling fan relay-4 or cooling fan relay-5 • Cooling fan relay-4 or cooling fan relay-5 • Cooling fan motor • IPDM E/R

CONSULT-III Function (IPDM E/R)

INFOID:0000000006521770

APPLICATION ITEM

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

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

SELF DIAGNOSTIC

Refer to PCS-26, "DTC Index".

DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
MOTOR FAN REQ [1 - 4]	×	Displays the value of the cooling fan speed signal received from ECM via CAN communication.
AC COMP REQ [Off/On]	×	Displays the status of the A/C compressor request signal received from ECM via CAN communication.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication. **NOTE:** This item is monitored only the vehicle with front fog lamp system.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper stop position signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
ST RLY REQ [Off/On]		Displays the status of the starter request signal.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
RR DEF REQ [Off/On]	×	Displays the status of the rear defogger request signal received from BCM via CAN communication.
OIL P SW [Open/Close]		Displays the status of the oil pressure switch judged by IPDM E/R.
DTRL REQ [Off/On]		Displays the status of the daytime running light request signal received from BCM via CAN communication. **NOTE:** This item is monitored only the vehicle with daytime running light system.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R. **NOTE:** This item is monitored only the vehicle for Mexico.
THFT HRN REQ [Off/On]		Displays the status of the horn request signal by vehicle security system or panic alarm system received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn request signal by key fob LOCK operation received from BCM via CAN communication.

ACTIVE TEST

Test item

Test item	Operation	Description
REAR DEFOGGER	Off	OFF
	On	Operates the rear window defogger relay.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.

Test item	Operation	Description
MOTOR FAN	1	OFF
	2	Operates the cooling fan relay (LO operation).
	3	Operates the cooling fan relay (MID operation).
	4	Operates the cooling fan relay (HI operation).
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay and the daytime running light relay. **NOTE:** Daytime running light relay is with daytime running light system only.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 4 seconds intervals.
	Fog	Operates the front fog lamp relay. **NOTE:** This item can test only the vehicle with front fog lamp system.
HORN	On	Operates horn relay for 20 ms.

DTC/CIRCUIT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH
WITH AUTO A/C

WITH AUTO A/C : Description

INFOID:0000000006201575

Rear window defogger switch is installed on AUTO amp.
The rear window defogger is operated by turning the rear window defogger switch ON.

WITH AUTO A/C : Component Function Check

INFOID:0000000006201576

1.CHECK REAR WINDOW DEFOGGER SWITCH

1. Select “REAR DEF SW” in “Data Monitor” (BCM) mode with CONSULT-III.
2. Check rear window defogger switch signal under following condition.

Monitor item	Condition		Status
REAR DEF SW	Rear window defogger switch	Pressed	ON
		Other than above	OFF

Is the inspection result normal?

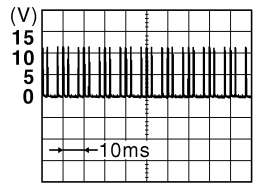
YES >> Rear window defogger switch is OK.
NO >> Refer to DEF-14, "WITH AUTO A/C : Diagnosis Procedure".

WITH AUTO A/C : Diagnosis Procedure

INFOID:0000000006201577

1.CHECK REAR WINDOW DEFOGGER SWITCH

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

(+) BCM Connector	(+) BCM Terminal	(-)	Condition		Voltage (V) (Approx.)
M65	10	Ground	Rear window defogger switch	Pressed	0
				Other than above	

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Is the inspection result normal?

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

2.CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and AUTO amp. connector.
3. Check continuity between BCM harness connector and AUTO amp. harness connector.

BCM		AUTO amp.		Continuity
Connector	Terminal	Connector	Terminal	
M65	10	M55	22	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M65	10		Not existed

Is the inspection result normal?

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

3.CHECK REAR WINDOW DEFOGGER SWITCH GROUND CIRCUIT

Check continuity between AUTO amp. harness connector and ground.

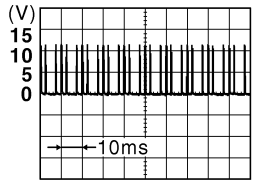
AUTO amp.		Ground	Continuity
Connector	Terminal		
M54	3		Existed

Is the inspection result normal?

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

4.CHECK BCM OUTPUT SIGNAL

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

(+)		(-)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M65	10	Ground	

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Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace BCM. Refer to BCS-66, "Removal and Installation".

5.CHECK IINTERMITTENT INCDENT

Refer to GI-45, "Intermittent Incident"

Is the inspection result normal?

YES >> Check A/C control system. Refer to HAC-121, "Work Flow".
NO >> Repair or replace the malfunctioning parts.

WITHOUT AUTO A/C

WITHOUT AUTO A/C : Description

INFOID:0000000006522794

Rear window defogger switch is installed on A/C amp.
The rear window defogger is operated by turning the rear window defogger switch ON.

WITHOUT AUTO A/C : Component Function Check

INFOID:0000000006522795

1.CHECK REAR WINDOW DEFOGGER SWITCH

1. Select “REAR DEF SW” in “Data Monitor” (BCM) mode with CONSULT-III.
2. Check rear window defogger switch signal under following condition.

Monitor item	Condition		Status
REAR DEF SW	Rear window defogger switch	Pressed	ON
		Other than above	OFF

Is the inspection result normal?

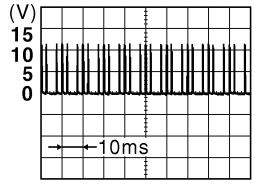
YES >> Rear window defogger switch is OK.
NO >> Refer to DEF-16, "WITHOUT AUTO A/C : Diagnosis Procedure".

WITHOUT AUTO A/C : Diagnosis Procedure

INFOID:0000000006522796

1.CHECK REAR WINDOW DEFOGGER SWITCH

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

(+) BCM Connector	(+) BCM Terminal	(-)	Condition		Voltage (V) (Approx.)
M65	10	Ground	Rear window defogger switch	Pressed	0
				Other than above	

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Is the inspection result normal?

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

2.CHECK REAR WINDOW DEFOGGER SWITCH CIRCUIT

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

BCM		A/C amp.		Continuity
Connector	Terminal	Connector	Terminal	
M65	10	M50	38	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M65	10		Not existed

Is the inspection result normal?

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

3.CHECK REAR WINDOW DEFOGGER SWITCH GROUND CIRCUIT

Check continuity between A/C amp. harness connector and ground.

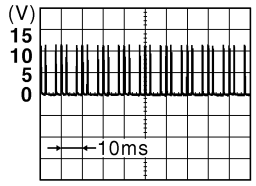
A/C amp.		Ground	Continuity
Connector	Terminal		
M50	3		Existed

Is the inspection result normal?

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

4. CHECK BCM OUTPUT SIGNAL

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

(+)		(-)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M65	10	Ground	

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Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace BCM. Refer to BCS-66, "Removal and Installation".

5. CHECK IINTERMITTENT INCDENT

Refer to GI-45, "Intermittent Incident"

Is the inspection result normal?

YES >> Check A/C control system. Refer to HAC-121, "Work Flow".
NO >> Repair or replace the malfunctioning parts.

REAR WINDOW DEFOGGER RELAY

Description

INFOID:0000000006201578

Rear window defogger relay is installed on IPDM E/R.
The rear window defogger relay is operated by turning the rear window defogger switch ON.

Component Function Check

INFOID:0000000006201579

1.CHECK REAR WINDOW DEFOGGER RELAY

1. Select “REAR DEFOGGER” in “Active Test” (IPDM E/R) mode with CONSULT-III.
2. Check rear window defogger relay operation.

Test item		Description	
REAR DEFOGGER	ON	Rear window defogger relay	ON
	OFF		OFF

Is the inspection result normal?

YES >> Rear window defogger relay is OK.
NO >> Refer to DEF-18, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006201580

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check the following.

- 15A fuse (No. 55, located in IPDM E/R)
- 15A fuse (No. 56, located in IPDM E/R)

Is the inspection result normal?

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

2.CHECK IPDM E/R OUTPUT SIGNAL

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

(+)		(-)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E11	12	Ground	Rear window defogger	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".

3.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident"

>> INSPECTION END

DOOR MIRROR DEFOGGER RELAY

Description

INFOID:0000000006201581

The door mirror defogger relay is operated by turning the rear window defogger switch ON.

Component Function Check

INFOID:0000000006201582

1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

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

Is the inspection result normal?

YES >> Door mirror defogger relay is OK.
NO >> Refer to DEF-19, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006201583

1.CHECK DOOR MIRROR DEFOGGER RELAY POWER SUPPLY 1

1. Turn ignition switch OFF.
2. Disconnect door mirror defogger relay.
3. Check voltage between door mirror defogger relay harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
Door mirror defogger relay			
Connector	Terminal		
M10	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check the following
- Repair or replace harness between door mirror defogger relay and fuse block (J/B).
- 10A fuse [No.7, located fuse block (J/B)]

2.CHECK DOOR MIRROR DEFOGGER RELAY POWER SUPPLY 2

Check voltage between door mirror defogger relay harness connector and ground.

(+)		(-)	Condition	Voltage (V) (Approx.)
Door mirror defogger relay				
Connector	Terminal			
M10	3	Ground	Turn ignition switch is ON and rear window defogger is ON	Battery voltage
			Other than above	0

Is the inspection result normal?

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

3.CHECK DOOR MIRROR DEFOGGER RELAY POWER SUPPLY CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between door mirror defogger harness connector and IPDM E/R harness connector.

Door mirror defogger relay		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M10	3	E11	12	Existed

3. Check continuity between door mirror defogger relay harness connector and ground.

Door mirror defogger relay		Ground	Continuity
Connector	Terminal		
M10	3		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-29, "Removal and Installation".
NO >> Repair or replace harness.

4.CHECK DOOR MIRROR DEFOGGER RELAY GROUND CIRCUIT

Check continuity between door mirror defogger relay harness connector and ground.

Door mirror defogger relay		Ground	Continuity
Connector	Terminal		
M10	4		Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

5.CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

1. Disconnect door mirror connector.
2. Check continuity between door mirror harness connector and door mirror defogger relay harness connector.

Door mirror defogger relay		Door mirror defogger		Continuity
Connector	Terminal	Connector	Terminal	
M10	2	D3 (driver side)	1	Existed
		D43 (passenger side)		

3. Check continuity between door mirror defogger relay harness connector and ground.

Door mirror defogger relay		Ground	Continuity
Connector	Terminal		
M10	2		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness.

6.CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

1. Check continuity between door mirror defogger relay harness connector and ground.

Door mirror defogger		Ground	Continuity
Connector	Terminal		
D3 (driver side)	5		Existed
D43 (passenger side)			

Is the inspection result normal?

YES >> Replace mirror. Refer to MIR-20, "GLASS MIRROR : Disassembly and Assembly".
NO >> Repair or replace harness.

Component Inspection

INFOID:0000000006201584

1.CHECK DOOR MIRROR DEFOGGER RELAY

Check continuity door mirror defogger relay terminals.

Door mirror defogger relay	Terminal		Condition	Continuity
M10	1	2	Battery voltage direct current supply between terminals 3 and 4	Existed
			Other than above	Does not existed

Is the inspection result normal?

YES >> Door mirror defogger relay is OK.
NO >> Replace door mirror defogger relay.

REAR WINDOW DEFOGGER

Description

INFOID:0000000006201585

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:0000000006201586

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-22, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000006201587

1.CHECK REAR WINDOW DEFOGGER POWER SUPPLY CIRCUIT

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

(+)		(-)	Condition		Voltage (V) (Approx.)
Rear window defogger					
Connector	Terminal				
D160	1	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

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

2.CHECK REAR WINDOW DEFOGGER GROUND CIRCUIT

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

Rear window defogger		Ground	Continuity
Connector	Terminal		
D185	2		Existed

Is the inspection result normal?

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

3.CHECK FILAMENT

Check filament.
Refer to DEF-23, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair filament.

4.CHECK REAR WINDOW DEFOGGER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R and rear window defogger connectors.

3. Check continuity between IPDM E/R harness connector and rear window defogger harness connector.

IPDM E/R		Rear window defogger		Continuity
Connector	Terminal	Connector	Terminal	
E11	12	D160	1	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E11	12		Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

5.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident"

>> INSPECTION END

Component Inspection

INFOID:0000000006201588

1.CHECK FILAMENT

Check the filament for damage or blown.
Refer to DEF-45, "Inspection and Repair".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair filament.

DOOR MIRROR DEFOGGER
DRIVER SIDE

DRIVER SIDE : Description

INFOID:0000000006201589

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

DRIVER SIDE : Component Function Check

INFOID:0000000006201590

1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

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

Is the inspection result normal?

YES >> Driver side door mirror defogger is OK.
NO >> Refer to DEF-24, "DRIVER SIDE : Diagnosis Procedure".

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000006201591

1.CHECK DOOR MIRROR DEFOGGER 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				
D3	1	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

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

2.CHECK DOOR MIRROR DEFOGGER 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		
D3	5		Existed

Is the inspection result normal?

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

3.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

Check driver side door mirror defogger.
Refer to DEF-25, "DRIVER SIDE : Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace door mirror glass (driver side). Refer to MIR-20, "GLASS MIRROR : Disassembly and Assembly".

4.CHECK DOOR MIRROR CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect door mirror defogger relay connector and door mirror (driver side) connector.
3. Check continuity between door mirror (driver side) harness connector and door mirror defogger relay harness connector.

Door mirror (driver side)		Door mirror defogger relay		Continuity
Connector	Terminal	Connector	Terminal	
D3	1	M10	2	Existed

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

Door mirror (driver side)		Ground	Continuity
Connector	Terminal		
D3	1		Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

5.CHECK INTERMITTENT

Refer to GI-45, "Intermittent Incident"

>> INSPECTION END

DRIVER SIDE : Component Inspection

INFOID:0000000006201592

1.CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

1. Turn ignition switch OFF.
2. Disconnect door mirror (driver side) connector.
3. Check continuity between door mirror terminals.

Door mirror (diver side)			Continuity
Connector	Terminal		
D3	1	5	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace door mirror glass (driver side). Refer to MIR-20, "GLASS MIRROR : Disassembly and Assembly".

PASSENGER SIDE

PASSENGER SIDE : Description

INFOID:0000000006201593

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

PASSENGER SIDE : Component Function Check

INFOID:0000000006201594

1.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

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

Is the inspection result normal?

YES >> Passenger side door mirror defogger is OK.
NO >> Refer to DEF-25, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000006201595

1.CHECK DOOR MIRROR DEFOGGER 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				
D43	1	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

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

2.CHECK DOOR MIRROR DEFOGGER 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		
D43	5		Existed

Is the inspection result normal?

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

3.CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

Check passenger side door mirror defogger.
Refer to DEF-27, "PASSENGER SIDE : Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace door mirror glass (passenger side). Refer to MIR-20, "GLASS MIRROR : Disassembly and Assembly".

4.CHECK DOOR MIRROR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect door mirror defogger connector and door mirror (passenger side) connector.
3. Check continuity between door mirror (passenger side) harness connector and door mirror defogger relay harness connector.

Door mirror (passenger side)		Door mirror defogger relay		Continuity
Connector	Terminal	Connector	Terminal	
D43	1	M10	2	Existed

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

Door mirror (passenger side)		Ground	Continuity
Connector	Terminal		
D43	1		Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness.

5.CHECK INTERMITTENT

Refer to GI-45, "Intermittent Incident"

>> INSPECTION END

PASSENGER SIDE : Component Inspection

INFOID:0000000006201596

1. CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER

1. Turn ignition switch OFF.
2. Disconnect door mirror (passenger side) connector.
3. Check continuity between door mirror terminals connector.

Door mirror (passenger side)			Continuity
Connector	Terminal		
D43	1	5	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace door mirror glass (passenger side). Refer to MIR-20, "GLASS MIRROR : Disassembly and Assembly".

REAR WINDOW DEFOGGER ON SIGNAL
WITH AUTO A/C

WITH AUTO A/C : Description

INFOID:0000000006523523

Turns the indicator lamp in the rear window defogger switch ON when operating the rear window defogger.

WITH AUTO A/C : Component Function Check

INFOID:0000000006523524

1.CHECK REAR WINDOW DEFOGGER ON SIGNAL

Check that the indicator lamps of rear window defogger switch are illuminated when turning the rear window defogger switch ON.

Is the inspection result normal?

OK >> Rear window defogger ON signal is OK.
NG >> Refer to DEF-28, "WITH AUTO A/C : Diagnosis Procedure".

WITH AUTO A/C : Diagnosis Procedure

INFOID:0000000006523525

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check the following.

- 10A fuse [No. 5, located in fuse block (J/B)]

Is the inspection result normal?

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

2.CHECK REAR WINDOW DEFOGGER INDICATOR LAMPS ON SIGNAL

1. Turn ignition switch ON.
2. Check voltage between AUTO amp. connector ground.

(+)		(-)	Condition		Voltage (V) (Approx.)
Connector	Terminal				
M55	23	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> Replace AUTO amp. Refer to HAC-206, "Removal and Installation".
NO >> GO TO 3.

3.CHECK REAR WINDOW DEFOGGER INDICATOR LAMPS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and AUTO amp. connector.
3. Check continuity between IPDM E/R harness connector and AUTO amp. harness connector.

IPDM E/R		AUTO amp.		Continuity
Connector	Terminal	Connector	Terminal	
E11	12	M55	23	Existed

Is the inspection result normal?

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

4.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

WITHOUT AUTO A/C

WITHOUT AUTO A/C : Description

INFOID:0000000006201597

Turns the indicator lamp in the rear window defogger switch ON when operating the rear window defogger.

WITHOUT AUTO A/C : Component Function Check

INFOID:0000000006201598

1.CHECK REAR WINDOW DEFOGGER ON SIGNAL

Check that the indicator lamps of rear window defogger switch are illuminated when turning the rear window defogger switch ON.

Is the inspection result normal?

OK >> Rear window defogger ON signal is OK.
NG >> Refer to DEF-29, "WITHOUT AUTO A/C : Diagnosis Procedure".

WITHOUT AUTO A/C : Diagnosis Procedure

INFOID:0000000006201599

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check the following.

- 10A fuse [No. 5, located in fuse block (J/B)]

Is the inspection result normal?

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

2.CHECK REAR WINDOW DEFOGGER INDICATOR LAMPS ON SIGNAL

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

(+)		(-)	Condition		Voltage (V) (Approx.)
Connector	Terminal				
M50	20	Ground	Rear window defogger switch	ON	Battery voltage
				OFF	0

Is the inspection result normal?

YES >> Replace A/C amp. Refer to HAC-206, "Removal and Installation".
NO >> GO TO 3.

3.CHECK REAR WINDOW DEFOGGER INDICATOR LAMPS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and A/C amp. connector.
3. Check continuity between IPDM E/R harness connector and A/C amp. harness connector.

IPDM E/R		A/C amp.		Continuity
Connector	Terminal	Connector	Terminal	
E11	12	M50	20	Existed

Is the inspection result normal?

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

4.CHECK INTERMITTENT INCIDENT

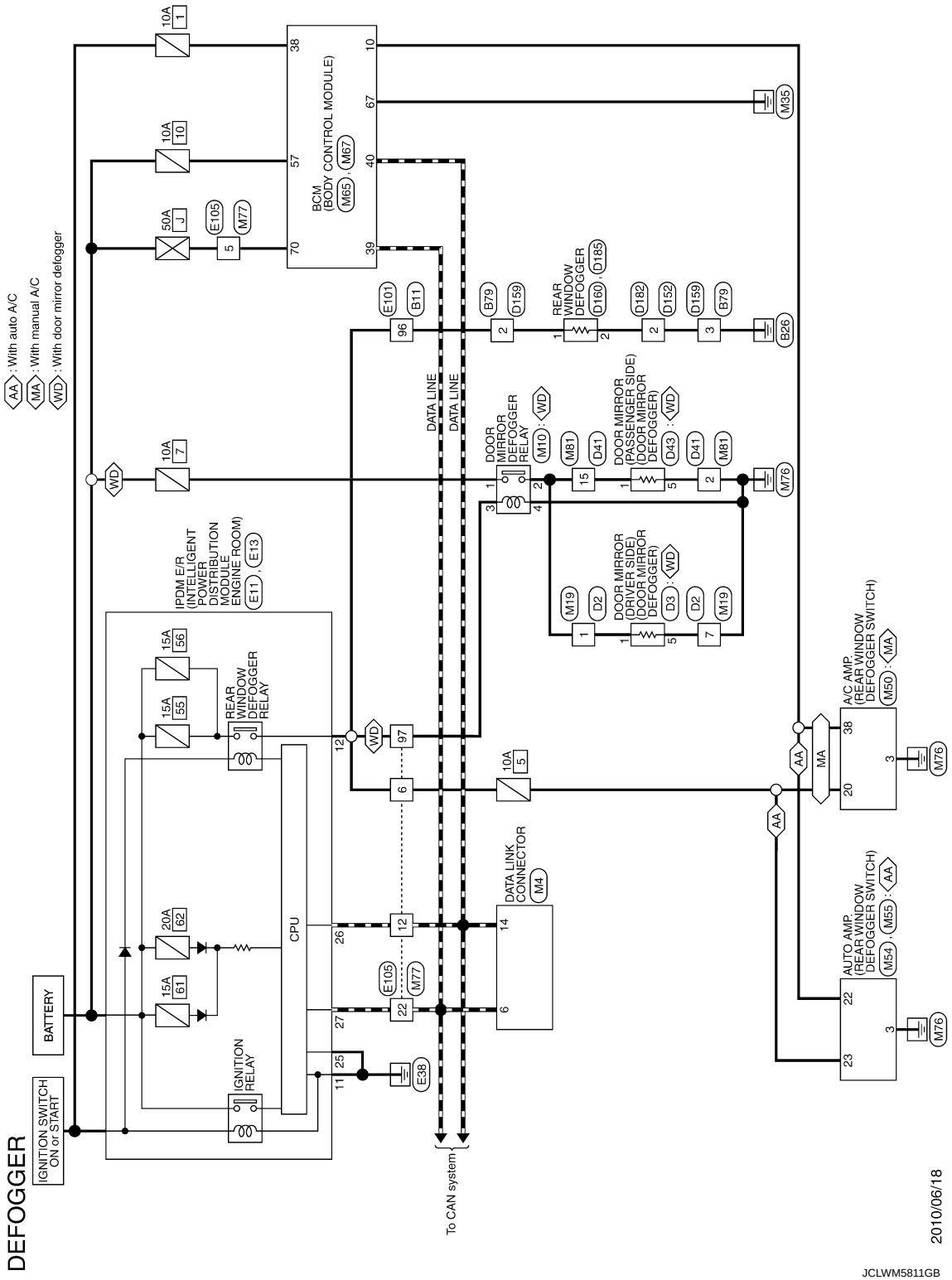
Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

REAR WINDOW DEFOGGER SYSTEM

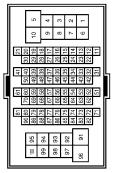
Wiring Diagram - REAR WINDOW DEFOGGER SYSTEM -

INFOID:0000000006201600



DEFOGGER

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	–
5	L	–
8	R	–
9	Y	–
12	BR	–
13	O	–
22	G	– [For Mexico]
22	SB	– [Except for Mexico]
23	SB	– [For Mexico]
23	G	– [Except for Mexico]
51	GR	–
52	SHIELD	–
53	L	–
54	B	–
62	Y	–
63	R	–
96	G	–

Connector No.	B79
Connector Name	WIRE TO WIRE
Connector Type	M04MW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
2	G	–
3	B	–
4	W	–

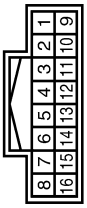
Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	R	–
3	B	–
4	O	–
5	Y	–
6	SB	–
7	B	–
8	V	–
9	L	–
10	P	–
13	R	–
14	LG	–
15	W	–
16	BR	–

Connector No.	D3
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH08MW-NH

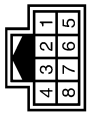
Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	G	–
3	L	–
4	Y	–
5	B	–

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	–
2	B	–
3	V	–
7	BR	–
8	V	–
9	BR	–
10	R	–
11	Y	–
15	GR	–
16	P	–

Connector No.	D43
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH08MW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	R	–
3	Y	–
4	V	–
5	B	–

Connector No.	D152
Connector Name	WIRE TO WIRE
Connector Type	M02FW-GY-LC

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

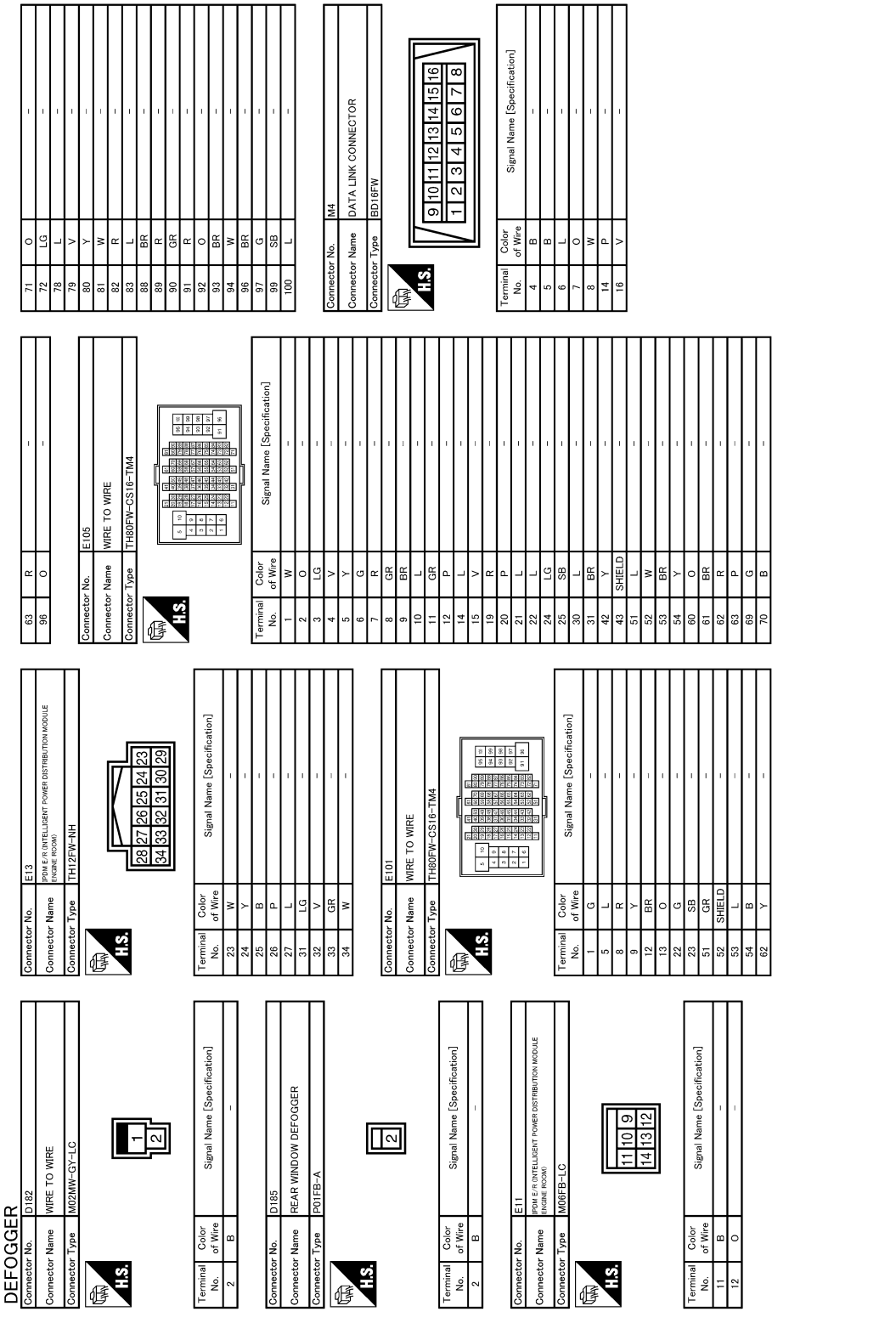
Connector No.	D159
Connector Name	WIRE TO WIRE
Connector Type	M04FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
2	G	–
3	B	–
4	V	–

Connector No.	D160
Connector Name	REAR WINDOW DEFOGGER
Connector Type	P01FB-A

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

JCLWM5812GB



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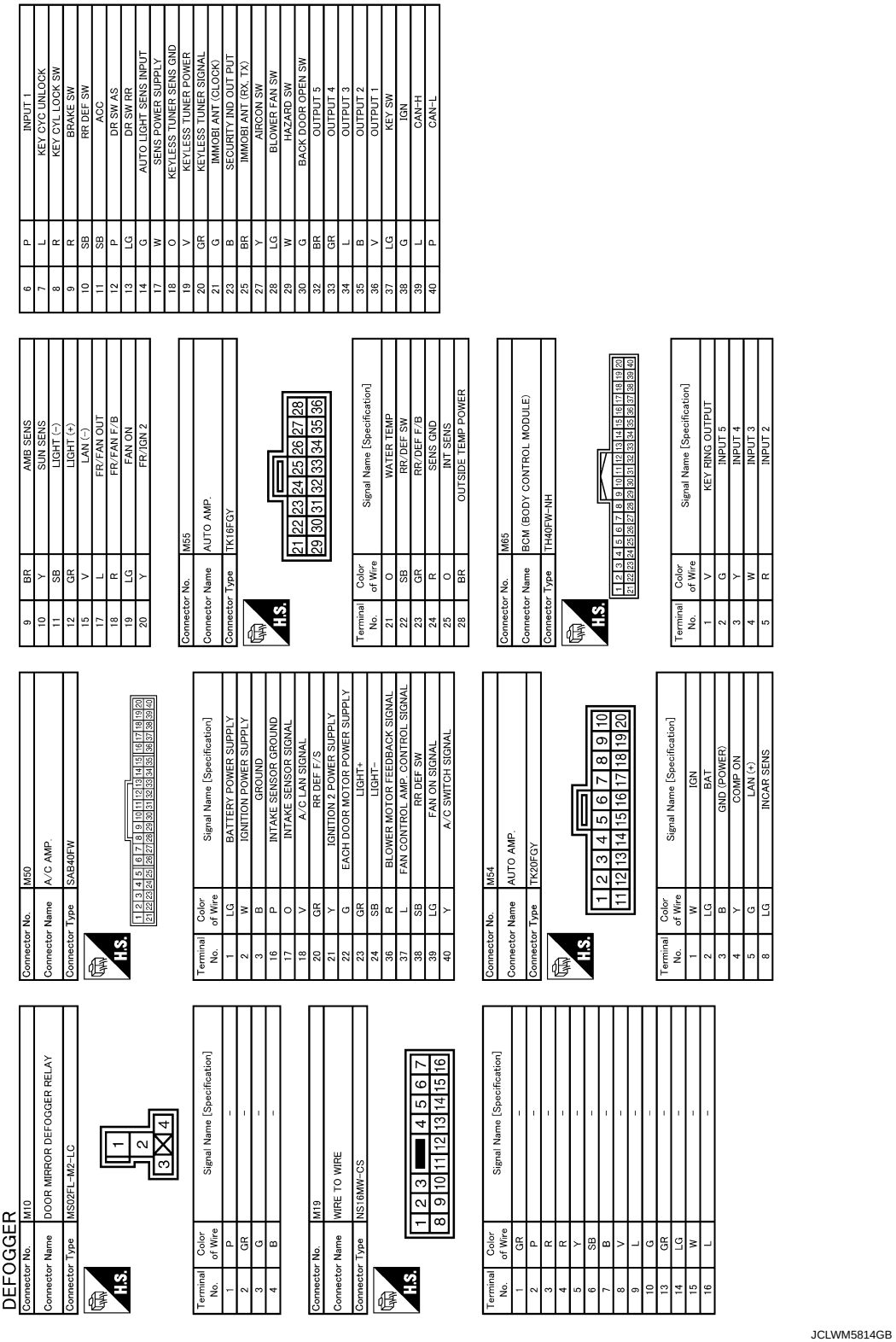

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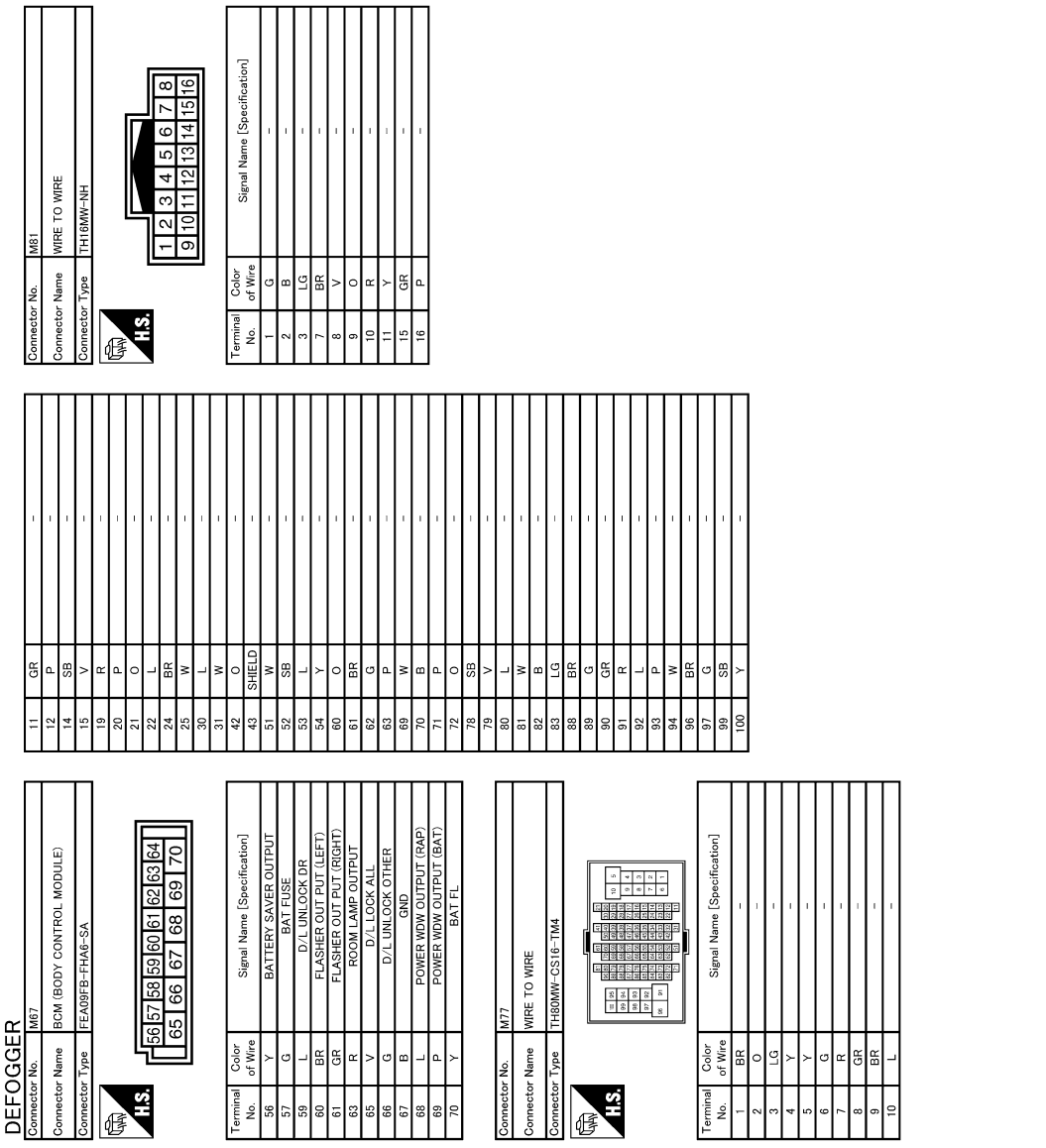


JCLWM5815GB

ECU DIAGNOSIS INFORMATION

BCM, IPDM E/R

List of ECU Reference

INFOID:0000000006522358

ECU	Reference
BCM	BCS-42, "Reference Value"
	BCS-61, "Fail-safe"
	BCS-62, "DTC Inspection Priority Chart"
	BCS-62, "DTC Index"
IPDM E/R	PCS-16, "Reference Value"
	PCS-24, "Fail-safe"
	PCS-26, "DTC Index"

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000006201610

1. IPDM E/R AUTO ACTIVE TEST

Check IPDM E/R active test.
Refer to PCS-8, "Diagnosis Description".

Is the inspection result normal?

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

2. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.
Refer to DEF-14, "WITH AUTO A/C : Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.
Refer to DEF-18, "Component Function Check"

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4. CHECK REAR WINDOW DEFOGGER

Check rear window defogger.
Refer to DEF-22, "Component Function Check"

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident"
NO >> GO TO 1.

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

Diagnosis Procedure

INFOID:0000000006201611

1. IPDM E/R AUTO ACTIVE TEST

Check IPDM E/R active test.
Refer to PCS-8, "Diagnosis Description".

Is the inspection result normal?

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

2. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.
Refer to DEF-14, "WITH AUTO A/C : Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.
Refer to DEF-18, "Component Function Check"

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4. CHECK REAR WINDOW DEFOGGER

Check rear window defogger.
Refer to DEF-22, "Component Function Check"

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident"
NO >> GO TO 1.

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

Diagnosis Procedure

INFOID:0000000006201612

1. CHECK REAR WINDOW DEFOGGER

Check rear window defogger.
Refer to DEF-22, "Component Function Check".

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident"
NO >> GO TO 1.

DOOR MIRROR DEFOGGER DOES NOT OPERATE

BOTH SIDE

BOTH SIDE : Diagnosis Procedure

INFOID:0000000006201613

1. CHECK DOOR MIRROR DEFOGGER CIRCUIT

Check door mirror defogger circuit.
Refer to DEF-24, "DRIVER SIDE : Component Function Check"

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident"
NO >> GO TO 1.

DRIVER SIDE

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000006201614

1. CHECK DRIVER SIDE DOOR MIRROR DEFOGGER

Check driver side door mirror defogger.
Refer to DEF-25, "DRIVER SIDE : Component Inspection".

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident"
NO >> GO TO 1.

PASSENGER SIDE

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000006201615

1. CHECK PASSENGER SIDE DOOR MIRROR DEFOGGER.

Check passenger side door mirror defogger.
Refer to DEF-27, "PASSENGER SIDE : Component Inspection"

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident"
NO >> GO TO 1.

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

Diagnosis Procedure

INFOID:0000000006201616

1. CHECK REAR WINDOW DEFOGGER INDICATOR

Check rear window defogger ON signal.
Refer to DEF-29, "WITHOUT AUTO A/C : Component Function Check".

Is the inspection result normal?

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

2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident"
NO >> GO TO 1.

PRECAUTION

PRECAUTIONS

FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006522360

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

WARNING:

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

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

WARNING:

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

FOR USA AND CANADA : Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000006522365

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition switch in the ″LOCK″ position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

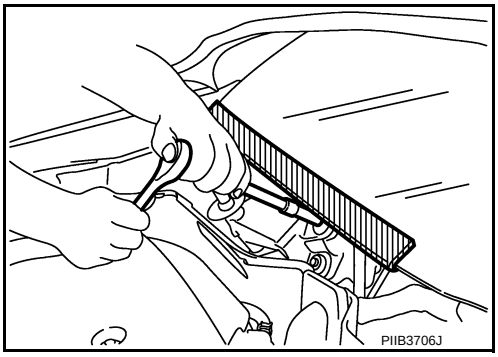
1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.

3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

FOR USA AND CANADA : Precaution for Procedure without Cowl Top Cover

INFOID:0000000006522378

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



FOR USA AND CANADA : Precautions For Xenon Headlamp Service

INFOID:0000000006522414

WARNING:

Comply with the following warnings to prevent any serious accident.

- **Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.**
- **Never work with wet hands.**
- **Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector. (Turning it ON outside the lamp case may cause fire or visual impairments.)**
- **Never touch the bulb glass immediately after turning it OFF. It is extremely hot.**

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

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

FOR MEXICO

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

INFOID:0000000006522361

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

- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

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

FOR MEXICO : Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000006522364

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition switch in the ″LOCK″ position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

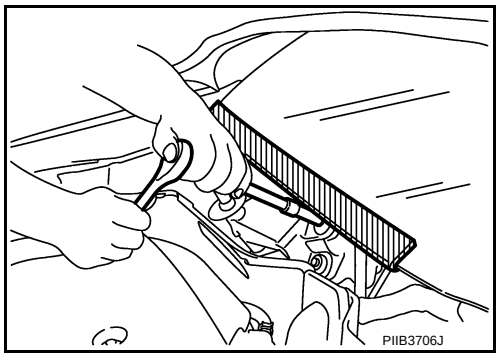
OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

FOR MEXICO : Precaution for Procedure without Cowl Top Cover

INFOID:0000000006522377

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



FOR MEXICO : Precautions For Xenon Headlamp Service

INFOID:0000000006522413

WARNING:

Comply with the following warnings to prevent any serious accident.

- **Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.**
- **Never work with wet hands.**
- **Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector. (Turning it ON outside the lamp case may cause fire or visual impairments.)**
- **Never touch the bulb glass immediately after turning it OFF. It is extremely hot.**

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

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

REMOVAL AND INSTALLATION

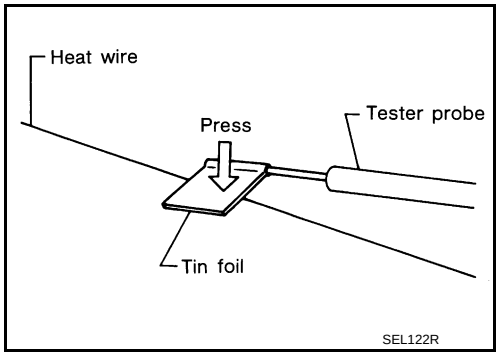
FILAMENT

Inspection and Repair

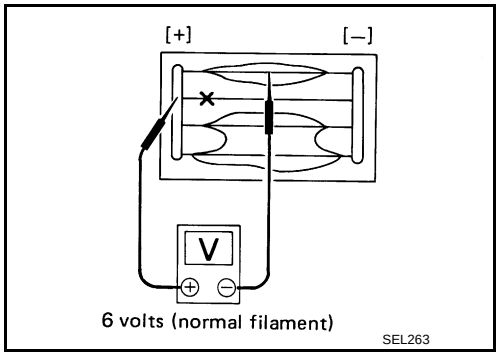
INFOID:0000000006201619

INSPECTION

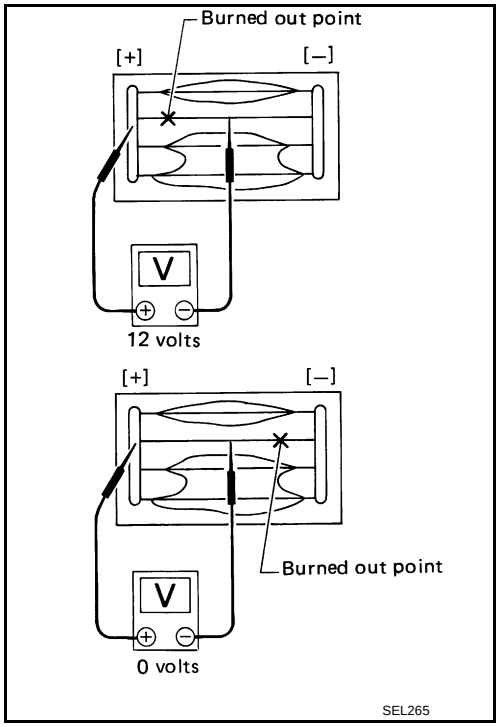
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



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



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



REPAIR

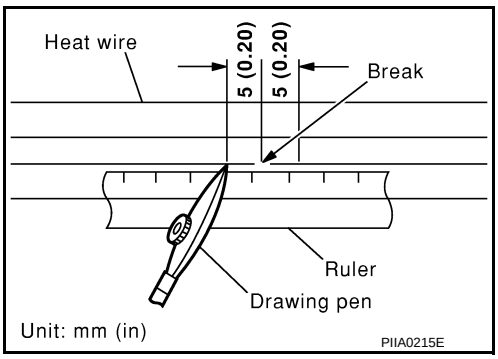
REPAIR EQUIPMENT

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

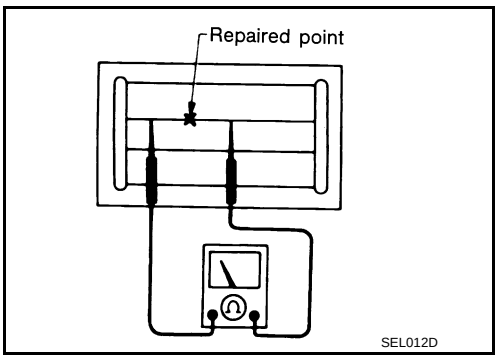
- Ruler 30 cm (11.8 in) long
- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

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



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



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