

SECTION **DEF**
DEFOGGER

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

CONTENTS

| | | | |
|---|----|--|----|
| BASIC INSPECTION | 3 | REAR WINDOW DEFOGGER FEEDBACK SIGNAL | 13 |
| DIAGNOSIS AND REPAIR WORKFLOW | 3 | Description | 13 |
| Repair Work Flow | 3 | Component Function Check | 13 |
| SYSTEM DESCRIPTION | 4 | Diagnosis Procedure (Manual A/C) | 13 |
| REAR WINDOW DEFOGGER SYSTEM | 4 | DOOR MIRROR DEFOGGER LH | 14 |
| System Diagram | 4 | Description | 14 |
| System Description | 4 | Component Function Check | 14 |
| Component Parts Location | 5 | Diagnosis Procedure | 14 |
| Component Description | 5 | Component Inspection | 15 |
| DIAGNOSIS SYSTEM (BCM) | 6 | DOOR MIRROR DEFOGGER RH | 16 |
| COMMON ITEM | 6 | Description | 16 |
| COMMON ITEM : CONSULT Function (BCM - COMMON ITEM) | 6 | Component Function Check | 16 |
| REAR DEFOGGER | 6 | Diagnosis Procedure | 16 |
| REAR DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER) | 7 | Component Inspection | 17 |
| DTC/CIRCUIT DIAGNOSIS | 8 | ECU DIAGNOSIS INFORMATION | 18 |
| REAR WINDOW DEFOGGER SWITCH | 8 | BCM (BODY CONTROL MODULE) | 18 |
| Description | 8 | Reference Value | 18 |
| Component Function Check | 8 | Terminal Layout | 21 |
| Diagnosis Procedure | 8 | Physical Values | 21 |
| REAR WINDOW DEFOGGER RELAY | 10 | WIRING DIAGRAM | 27 |
| Description | 10 | REAR WINDOW DEFOGGER | 27 |
| Component Function Check | 10 | Wiring Diagram | 27 |
| Diagnosis Procedure | 10 | SYMPTOM DIAGNOSIS | 34 |
| REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT | 11 | REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE. | 34 |
| Description | 11 | Diagnosis Procedure | 34 |
| Component Function Check | 11 | REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH OF DOOR MIRROR DEFOGGER OPERATE. | 35 |
| Diagnosis Procedure | 11 | Diagnosis Procedure | 35 |
| Component Inspection | 12 | | |

| | | | |
|--|-----------|--|-----------|
| BOTH DOORS MIRROR DEFOGGER DON'T OPERATE BUT REAR WINDOW DEFOGGER OPERATES | 36 | Diagnosis Procedure | 39 |
| Diagnosis Procedure | 36 | PRECAUTION | 40 |
| DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE. | 37 | PRECAUTIONS | 40 |
| Diagnosis Procedure | 37 | Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" | 40 |
| PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE. | 38 | Handling for Adhesive and Primer | 40 |
| Diagnosis Procedure | 38 | REMOVAL AND INSTALLATION | 41 |
| REAR WINDOW DEFOGGER SWITCH DOES NOT LIGHT, BUT REAR WINDOW DEFOGGER OPERATES | 39 | FILAMENT | 41 |
| | | Filament Check | 41 |
| | | Filament Repair | 41 |

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Repair Work Flow

INFOID:000000008789540

DETAILED FLOW

1. LISTEN TO CUSTOMER COMPLAINT

Listen to customer complaint. Get detailed information about the conditions and environment when the symptom occurs.

>> GO TO 2

2. VERIFY THE SYMPTOM WITH OPERATIONAL CHECK

Verify the symptom with operational check.

>> GO TO 3

3. GO TO APPROPRIATE TROUBLE DIAGNOSIS

Go to appropriate trouble diagnosis.

>> GO TO 4

4. REPAIR OR REPLACE

Repair or replace the specific parts.

>> GO TO 5

5. FINAL CHECK

Final check.

Is inspection result normal?

YES >> Inspection End

NO >> Refer to [GI-49, "Intermittent Incident"](#).

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REAR WINDOW DEFOGGER SYSTEM

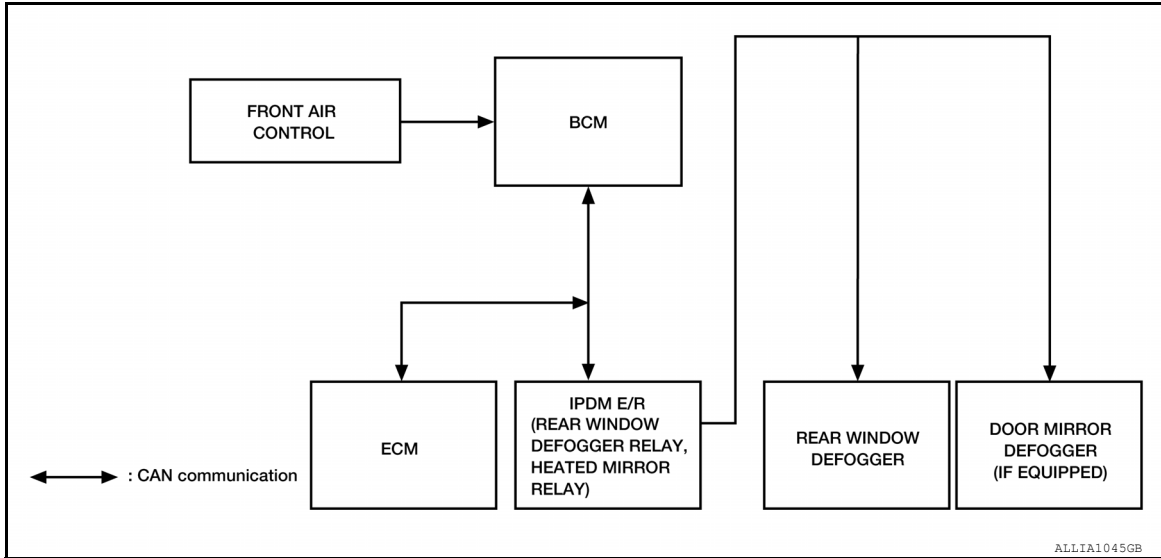
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

REAR WINDOW DEFOGGER SYSTEM

System Diagram

INFOID:000000008789541



System Description

INFOID:000000008789542

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 when rear window defogger operates.
- IPDM E/R turns rear window defogger relay and heated mirror relay (if equipped) ON when rear window defogger switch signal is received.
- Rear window defogger and door mirror defogger (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 signal is received.

Timer function

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

INPUT/OUTPUT SIGNAL CHART

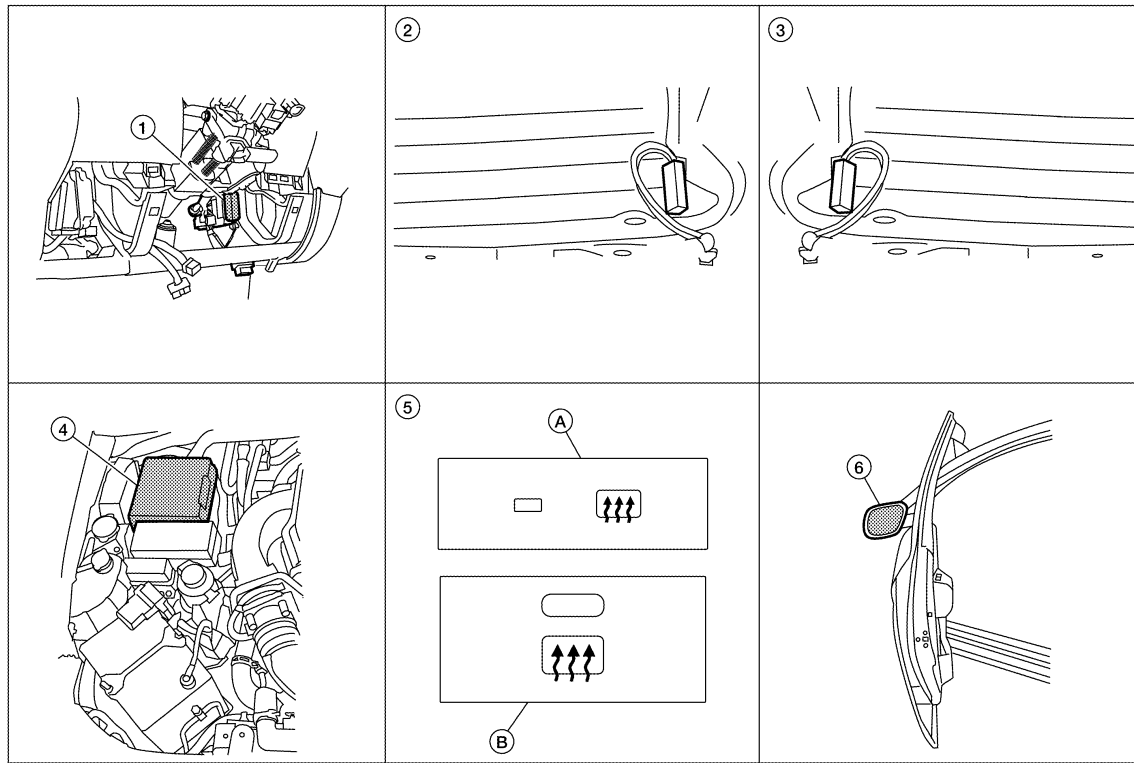
| Switch | Input signal to BCM | BCM function | Actuator |
|-----------------------------|------------------------|---|--|
| Rear window defogger switch | Defogger switch signal | Rear window defogger & door mirror defogger (if equipped) control | Rear window defogger Door mirror defogger (if equipped)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

REAR WINDOW DEFOGGER SYSTEM

< SYSTEM DESCRIPTION >

Component Parts Location

INFOID:000000008789543



1. BCM M18, M19, M20 (view with lower instrument panel LH removed)
2. Rear window defogger connector B165
3. Rear window defogger ground connector B210
4. IPDM E/R (rear window defogger relay, heated mirror relay) E120, E122, E124
5. A. Rear window defogger switch (with automatic A/C or manual A/C type 1)
B. Rear window defogger switch (with manual A/C type 2)
6. Door mirror (door mirror defogger) LH D4, RH D107

Component Description

INFOID:000000008789544

| | |
|-----------------------------|---|
| BCM | <ul style="list-style-type: none"> Operates the rear window defogger with the operation of rear window defogger switch. Performs the timer control of rear window defogger. |
| Rear window defogger relay | <ul style="list-style-type: none"> Operates the rear window defogger with the control signal from BCM. |
| Rear window defogger switch | <ul style="list-style-type: none"> The rear window defogger switch is turned ON. Turns the indicator lamp ON when detecting the operation of rear window defogger. |
| Rear window defogger | <ul style="list-style-type: none"> Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window 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

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C
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E
F
G
H
I
J
K
DEF
M
N
O
P

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000009225454

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 | <ul style="list-style-type: none"> • The vehicle specification can be read and saved. • The vehicle specification can be written when replacing BCM. |
| CAN Diag Support Mntr | The result of transmit/receive diagnosis of CAN communication is displayed. |

SYSTEM APPLICATION

BCM can perform the following functions.

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

REAR DEFOGGER

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

REAR DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)

INFOID:000000009225455

DATA MONITOR

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

ACTIVE TEST

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

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C
D
E
F
G
H
I
J
K
DEF
M
N
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REAR WINDOW DEFOGGER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH

Description

INFOID:000000008789547

- 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:000000008789548

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

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

Is the inspection result normal?

- YES >> Rear window defogger switch function is OK.
NO >> Refer to [DEF-8, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008789549

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK REAR WINDOW DEFOGGER SWITCH REQUEST SIGNAL

1. Turn ignition switch ON.
2. Check voltage between front air control harness connector and ground.

| Terminals | | (-) | Condition of rear window defogger switch | Voltage (V) (Approx.) |
|---------------------------------|----------|--------|--|-----------------------|
| (+) | Terminal | | | |
| Front air control connector | | | | |
| M49 (with manual A/C type 2) | 11 | Ground | ON | 0 |
| M50 (with manual A/C type 1) | 16 | | OFF | 5 |
| M52 (with auto A/C) | | | | |

Is the inspection result normal?

- YES >> Refer to [GI-49, "Intermittent Incident"](#).
NO >> GO TO 2.

2. CHECK REAR WINDOW DEFOGGER SWITCH VOLTAGE SIGNAL

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

REAR WINDOW DEFOGGER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

| Terminals | | Voltage (V) (Approx.) |
|---------------------------------|----------|--------------------------|
| (+) | (-) | |
| Front air control connector | Terminal | Ground 5 |
| M49 (with manual A/C type 2) | 11 | |
| M50 (with manual A/C type 1) | 16 | |
| M52 (with auto A/C) | | |

Is the inspection result normal?

YES >> Replace front air control. Refer to [VTL-7. "Removal and Installation"](#).

NO >> GO TO 3.

3. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM harness connector M19.
3. Check continuity between BCM harness connector M19 terminal 41 and front air control harness connector.

| BCM connector | Terminal | Front air control connector | Terminal | Continuity |
|---------------|----------|------------------------------|----------|------------|
| M19 | 41 | M49 (with manual A/C type 2) | 11 | Yes |
| | | M50 (with manual A/C type 1) | 16 | |
| | | M52 (with auto A/C) | | |

4. Check continuity between BCM harness connector M19 terminal 41 and ground.

| BCM connector | Terminal | Ground | Continuity |
|---------------|----------|--------|------------|
| M19 | 41 | Ground | No |
| | | | |

Is the inspection result normal?

YES >> Replace BCM. Refer to [BCS-49. "Removal and Installation"](#).

NO >> Repair or replace harness as necessary.

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REAR WINDOW DEFOGGER RELAY

< DTC/CIRCUIT DIAGNOSIS >

REAR WINDOW DEFOGGER RELAY

Description

INFOID:000000008789550

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

Component Function Check

INFOID:000000008789551

1. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

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

Is the inspection result normal?

- YES >> Rear window defogger relay power supply circuit is OK.
- NO >> Refer to [DEF-10, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008789552

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK FUSES

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

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

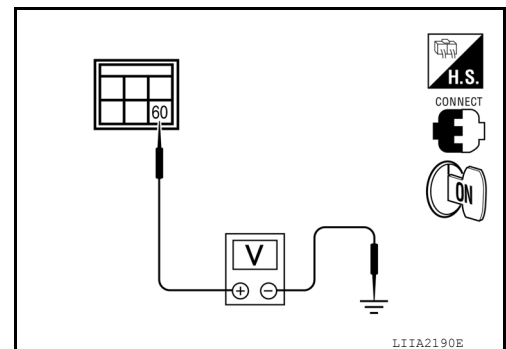
Is the inspection result normal?

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

2. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

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

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



Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Replace IPDM E/R. Refer to [PCS-28, "Removal and Installation of IPDM E/R"](#).

3. CHECK INTERMITTENT INCIDENT

Check intermittent incident.
Refer to [GI-49, "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

< DTC/CIRCUIT DIAGNOSIS >

REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

Description

INFOID:000000008789553

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:000000008789554

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-11, "Diagnosis Procedure"](#).

Diagnosis Procedure

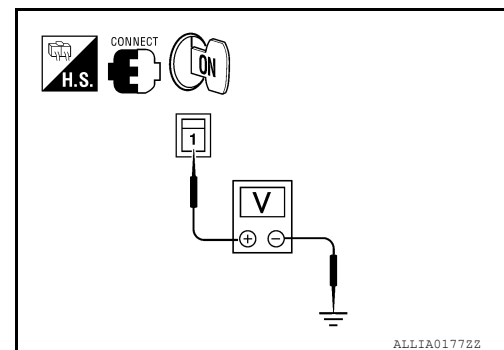
INFOID:000000008789555

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between rear window defogger harness connector B165 terminal 1 and ground.

| Terminals | | | Condition of rear window defogger switch | Voltage (V) (Approx.) |
|--------------------------------|----------|--------|--|-----------------------|
| (+) | | (-) | | |
| Rear window defogger connector | Terminal | | | |
| B165 | 1 | Ground | ON | Battery voltage |
| | | | OFF | 0 |



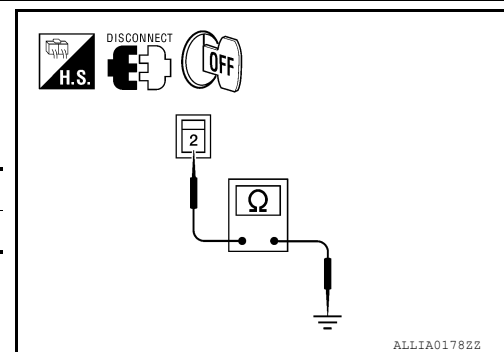
Is the inspection result normal?

- 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 harness connector B210 terminal 2 and ground.

| Rear window defogger connector | Terminal | Ground | Continuity |
|--------------------------------|----------|--------|------------|
| B210 | 2 | | Yes |



Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace harness as necessary.

3. CHECK HARNESS CONTINUITY

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REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

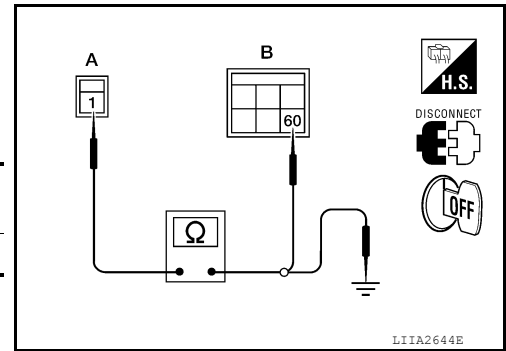
< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect IPDM E/R.
2. Check continuity between rear window defogger harness connector B165 (A) terminal 1 and IPDM E/R harness connector E124 (B) terminal 60.

| Rear window defogger connector | Terminal | IPDM E/R connector | Terminal | Continuity |
|--------------------------------|----------|--------------------|----------|------------|
| B165 (A) | 1 | E124 (B) | 60 | Yes |

3. Check continuity between rear window defogger harness connector B165 (A) terminal 1 and ground.

| Rear window defogger connector | Terminal | Ground | Continuity |
|--------------------------------|----------|--------|------------|
| B165 (A) | 1 | | No |



Is the inspection result normal?

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

4. CHECK FILAMENT

Check filament.

Refer to [DEF-12, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Refer to [GI-49, "Intermittent Incident"](#).
 NO >> Repair filament. Refer to [DEF-41, "Filament Repair"](#).

5. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-49, "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:000000008789556

1. CHECK FILAMENT

Check the filament for damage or open circuits.

Refer to [DEF-41, "Filament Check"](#).

Is the inspection result normal?

- YES >> Inspection End.
 NO >> Repair filament. Refer to [DEF-41, "Filament Repair"](#).

REAR WINDOW DEFOGGER FEEDBACK SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

REAR WINDOW DEFOGGER FEEDBACK SIGNAL

Description

INFOID:000000009249648

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

Component Function Check

INFOID:000000009249649

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

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

Is the inspection result normal?

- YES >> Rear window defogger feedback signal function is OK.
- NO >> Refer to [DEF-13, "Diagnosis Procedure \(Manual A/C\)"](#).

Diagnosis Procedure (Manual A/C)

INFOID:000000009249650

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK REAR WINDOW DEFOGGER SWITCH INDICATOR CIRCUIT

Check voltage between front air control harness connector and ground.

| Terminals | | Condition of rear window defogger switch | Voltage (V) (Approx.) |
|---------------------------------|----------|--|-----------------------|
| (+) | (-) | | |
| Front air control connector | Terminal | | |
| M49 (with manual A/C type 2) | 25 | ON | Battery voltage |
| M50 (with manual A/C type 1) | 10 | OFF | 0 |

Is the inspection result normal?

- YES >> Replace front air control. Refer to [VTL-7, "Removal and Installation"](#).
- NO >> Repair or replace harness as necessary.

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DOOR MIRROR DEFOGGER LH

< DTC/CIRCUIT DIAGNOSIS >

DOOR MIRROR DEFOGGER LH

Description

INFOID:000000008789557

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

Component Function Check

INFOID:000000008789558

1. CHECK DOOR MIRROR DEFOGGER LH

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

Is the inspection result normal?

- YES >> Door mirror defogger is OK.
- NO >> Refer to [DEF-14, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000008789559

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK POWER SUPPLY

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

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

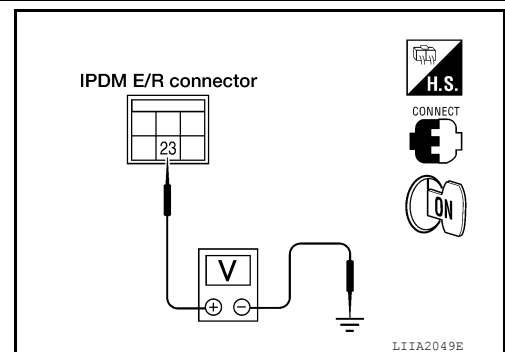
Is the inspection result normal?

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

2. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

Check voltage between IPDM E/R harness connector E120 terminal 23 and ground.

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



Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Replace IPDM E/R. Refer to [PCS-28, "Removal and Installation of IPDM E/R"](#).

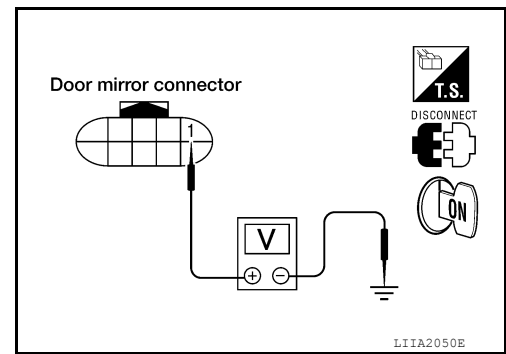
3. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

DOOR MIRROR DEFOGGER LH

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect door mirror LH.
3. Turn ignition switch ON.
4. Check voltage between door mirror LH harness connector D4 terminal 1 and ground.

| Connector | Terminal | | Condition | Voltage (V) (Approx.) |
|-----------|----------|--------|---------------------------------|--------------------------|
| | (+) | (-) | | |
| D4 | 1 | Ground | Rear window defogger switch ON | Battery voltage |
| | | | Rear window defogger switch OFF | 0 |



Is the inspection result normal?

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

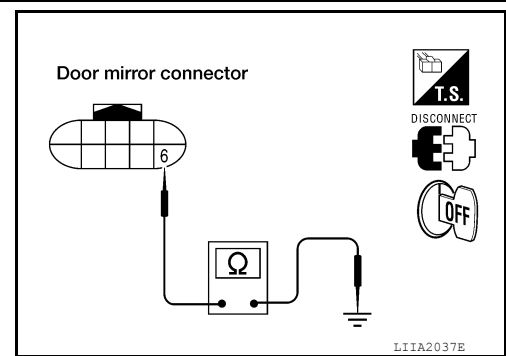
4. CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

Check continuity between door mirror LH harness connector D4 terminal 6 and ground.

6 - Ground : Continuity should exist.

Is the inspection result normal?

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



5. CHECK DOOR MIRROR DEFOGGER LH

Check door mirror defogger LH.
Refer to [DEF-15, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-49, "Intermittent Incident"](#).
NO >> Replace door mirror. Refer to [MIR-17, "Door Mirror Assembly"](#).

Component Inspection

INFOID:000000008789560

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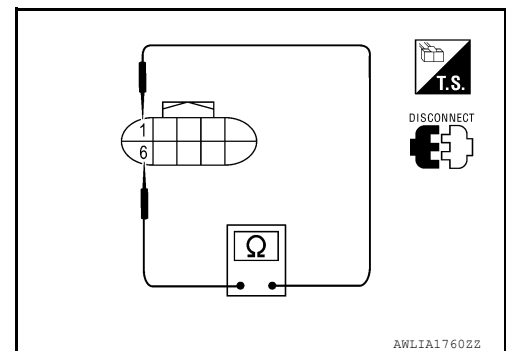
1. CHECK DOOR MIRROR DEFOGGER

Check continuity between door mirror LH terminals 1 and 6.

1 - 6 : Continuity should exist.

Is the inspection result normal?

- YES >> Check the condition of the harness and the connector.
NO >> Replace malfunctioning door mirror LH. Refer to [MIR-17, "Door Mirror Assembly"](#).



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DOOR MIRROR DEFOGGER RH

< DTC/CIRCUIT DIAGNOSIS >

DOOR MIRROR DEFOGGER RH

Description

INFOID:000000008789561

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

Component Function Check

INFOID:000000008789562

1. CHECK DOOR MIRROR DEFOGGER RH

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

Is the inspection result normal?

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

Diagnosis Procedure

INFOID:000000008789563

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK POWER SUPPLY

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

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

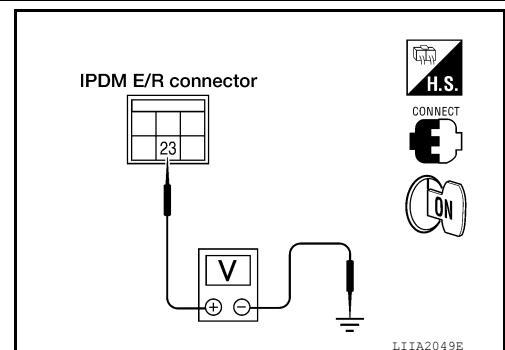
Is the inspection result normal?

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

2. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

Check voltage between IPDM E/R harness connector E120 terminal 23 and ground.

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



Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Replace IPDM E/R. Refer to [PCS-28, "Removal and Installation of IPDM E/R"](#).

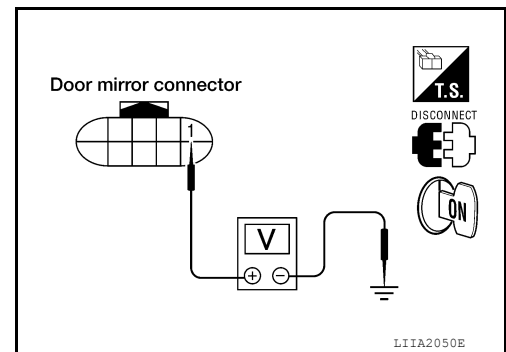
3. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

DOOR MIRROR DEFOGGER RH

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect door mirror RH.
3. Turn ignition switch ON.
4. Check voltage between door mirror RH harness connector D107 terminal 1 and ground.

| Connector | Terminal | | Condition | Voltage (V) (Approx.) |
|-----------|----------|--------|---------------------------------|--------------------------|
| | (+) | (-) | | |
| D107 | 1 | Ground | Rear window defogger switch ON | Battery voltage |
| | | | Rear window defogger switch OFF | 0 |



Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace harness as necessary.

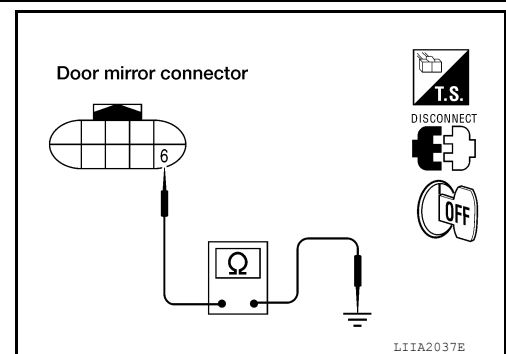
4. CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

Check continuity between door mirror RH harness connector D107 terminal 6 and ground.

6 - Ground : Continuity should exist.

Is the inspection result normal?

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



5. CHECK DOOR MIRROR DEFOGGER RH

Check door mirror defogger RH.
 Refer to [DEF-17, "Component Inspection"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-49, "Intermittent Incident"](#).
 NO >> Replace door mirror. Refer to [MIR-17, "Door Mirror Assembly"](#).

Component Inspection

INFOID:000000008789564

DEF

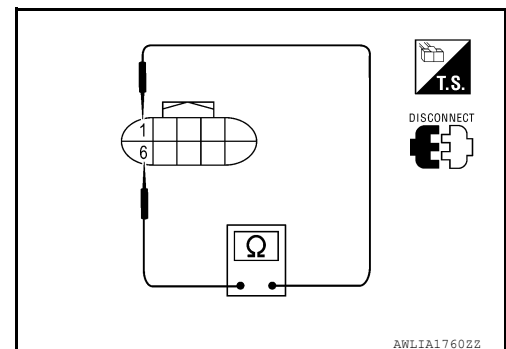
1. CHECK DOOR MIRROR DEFOGGER

Check continuity between door mirror RH terminals 1 and 6.

1 - 6 : Continuity should exist.

Is the inspection result normal?

- YES >> Check the condition of the harness and the connector.
 NO >> Replace malfunctioning door mirror RH. Refer to [MIR-17, "Door Mirror Assembly"](#).



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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000009249653

NOTE:

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

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

VALUES ON THE DIAGNOSIS TOOL

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Monitor Item | Condition | Value/Status | |
|----------------|---|--------------|-----|
| FR FOG SW | Front fog lamp switch OFF | Off | A |
| | Front fog lamp switch ON | On | |
| FR WASHER SW | Front washer switch OFF | Off | B |
| | Front washer switch ON | On | |
| FR WIPER LOW | Front wiper switch OFF | Off | C |
| | Front wiper switch LO | On | |
| FR WIPER HI | Front wiper switch OFF | Off | D |
| | Front wiper switch HI | On | |
| FR WIPER INT | Front wiper switch OFF | Off | E |
| | Front wiper switch INT | On | |
| FR WIPER STOP | Any position other than front wiper stop position | Off | |
| | Front wiper stop position | On | |
| HAZARD SW | When hazard switch is not pressed | Off | F |
| | When hazard switch is pressed | On | |
| HEAD LAMP SW 1 | Headlamp switch OFF | Off | G |
| | Headlamp switch 1st | On | |
| HEAD LAMP SW 2 | Headlamp switch OFF | Off | H |
| | Headlamp switch 1st | On | |
| HI BEAM SW | High beam switch OFF | Off | I |
| | High beam switch HI | On | |
| ID REGST FL1 | ID registration of front left tire incomplete | YET | J |
| | ID registration of front left tire complete | DONE | |
| ID REGST FR1 | ID registration of front right tire incomplete | YET | K |
| | ID registration of front right tire complete | DONE | |
| ID REGST RL1 | ID registration of rear left tire incomplete | YET | |
| | ID registration of rear left tire complete | DONE | |
| ID REGST RR1 | ID registration of rear right tire incomplete | YET | |
| | ID registration of rear right tire complete | DONE | |
| IGN ON SW | Ignition switch OFF or ACC | Off | DEF |
| | Ignition switch ON | On | |
| IGN SW CAN | Ignition switch OFF or ACC | Off | M |
| | Ignition switch ON | On | |
| INT VOLUME | Wiper intermittent dial is in a dial position 1 - 7 | 1 - 7 | N |
| KEY CYL LK-SW | Door key cylinder LOCK position | Off | O |
| | Door key cylinder other than LOCK position | On | |
| KEY CYL UN-SW | Door key cylinder UNLOCK position | Off | P |
| | Door key cylinder other than UNLOCK position | On | |
| KEY ON SW | Mechanical key is removed from key cylinder | Off | |
| | Mechanical key is inserted to key cylinder | On | |
| KEYLESS LOCK | LOCK button of key fob is not pressed | Off | |
| | LOCK button of key fob is pressed | On | |
| KEYLESS PANIC | PANIC button of key fob is not pressed | Off | |
| | PANIC button of key fob is pressed | On | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

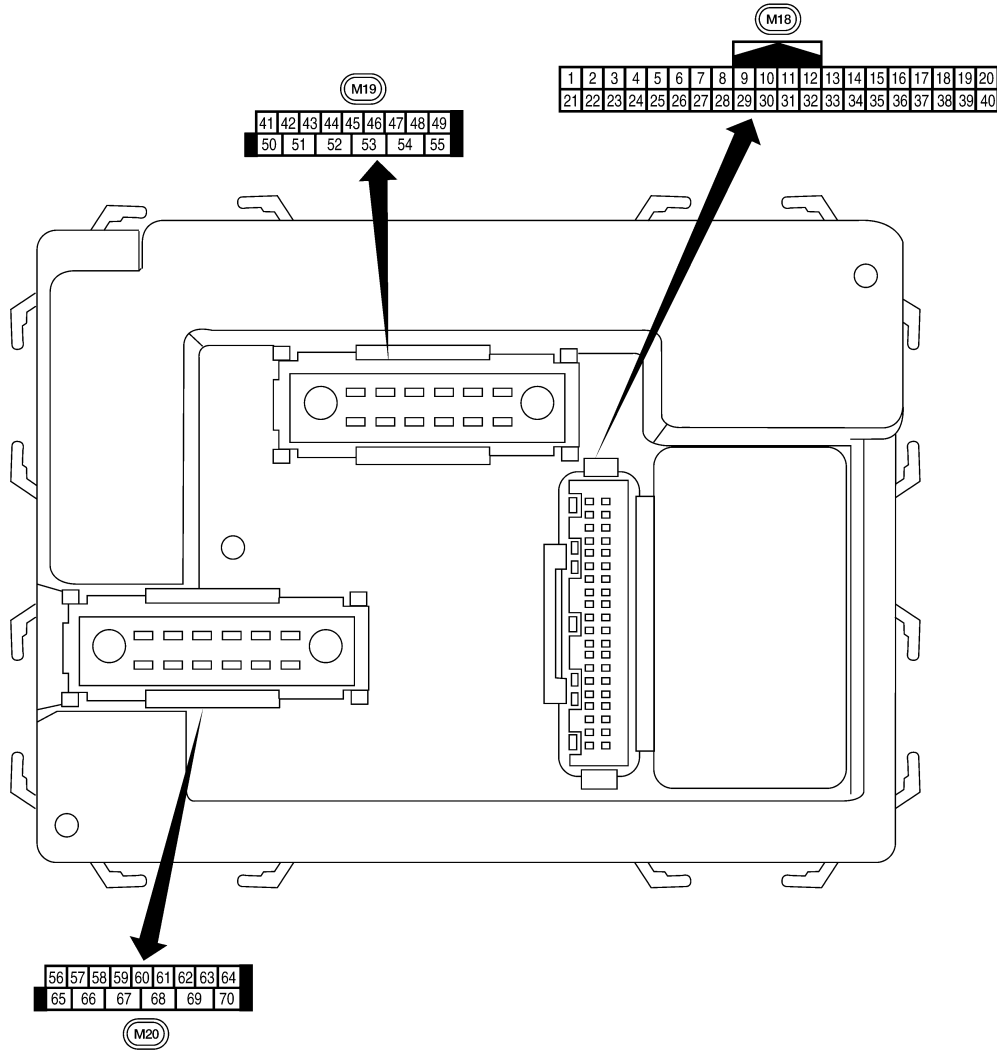
| Monitor Item | Condition | Value/Status |
|----------------|---|-----------------------------------|
| KEYLESS UNLOCK | UNLOCK button of key fob is not pressed | Off |
| | UNLOCK button of key fob is pressed | On |
| LIGHT SW 1ST | Lighting switch OFF | Off |
| | Lighting switch 1st | On |
| OIL PRESS SW | <ul style="list-style-type: none">Ignition switch OFF or ACCEngine running | Off |
| | Ignition switch ON | On |
| PASSING SW | Other than lighting switch PASS | Off |
| | Lighting switch PASS | On |
| REAR DEF SW | Rear window defogger switch OFF | Off |
| | Rear window defogger switch ON | On |
| TURN SIGNAL L | Turn signal switch OFF | Off |
| | Turn signal switch LH | On |
| TURN SIGNAL R | Turn signal switch OFF | Off |
| | Turn signal switch RH | On |
| VEHICLE SPEED | While driving | Equivalent to speedometer reading |
| WARNING LAMP | Low tire pressure warning lamp in combination meter OFF | Off |
| | Low tire pressure warning lamp in combination meter ON | On |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

Terminal Layout

INFOID:000000009249654



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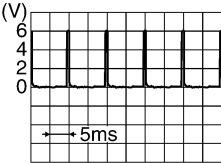

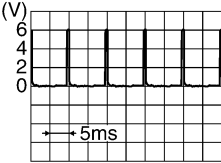
Physical Values

LIIA2443E

INFOID:000000009249655

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Item | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|--|---------------------|---------------------|--|--|
| | | | | Ignition switch | Operation or condition | |
| 1 | BR | Ignition keyhole illumination | Output | OFF | Door is locked (SW OFF) | Battery voltage |
| | | | | | Door is unlocked (SW ON) | 0V |
| 2 | P | Combination switch input 5 | Input | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  SKIA5291E |
| 3 | SB | Combination switch input 4 | Input | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  SKIA5292E |
| 4 | V | Combination switch input 3 | Input | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  SKIA5291E |
| 5 | L | Combination switch input 2 | Input | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  SKIA5292E |
| 6 | R | Combination switch input 1 | | | | |
| 7 | GR | Front door lock assembly LH (key cylinder switch) unlock | Input | OFF | ON (open, 2nd turn) | Momentary 1.5V |
| 8 | SB | Front door lock assembly LH (key cylinder switch) lock | | | OFF (closed) | 0V |
| | | | On (open) | Momentary 1.5V | | |
| 9 | LG | Brake sw | Input | OFF | OFF (brake pedal is not depressed) | 0V |
| | | | | | ON (brake pedal is depressed) | Battery voltage |
| 11 | G/B | Ignition switch (ACC or ON) | Input | ACC or ON | Ignition switch ACC or ON | Battery voltage |
| 12 | LG | Front door switch RH (All) | Input | OFF | ON (open) | 0V |
| | | Rear door switch upper RH (King Cab) | | | OFF (closed) | Battery voltage |
| | | Rear door switch lower RH (King Cab) | | | | |

BCM (BODY CONTROL MODULE)

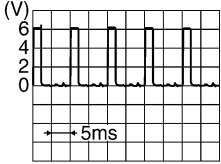
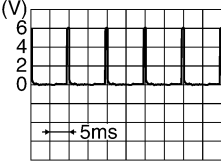
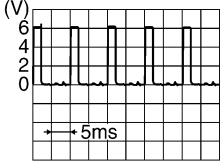
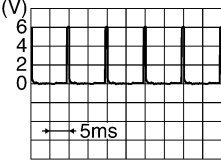
< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Item | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|---|---------------------|---------------------|---|---|
| | | | | Ignition switch | Operation or condition | |
| 13 | L | Rear door switch RH (Crew Cab) | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 15 | W | Tire pressure warning check connector | Input | OFF | — | 5V |
| 18 | BR | Remote keyless entry receiver (Ground) | Output | OFF | — | 0V |
| 19 | V | Remote keyless entry receiver (power supply) | Output | OFF | Ignition switch OFF | |
| 20 | G | Remote keyless entry receiver signal (Signal) | Input | OFF | Stand-by (keyfob buttons released) | |
| | | | | | When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed) | |
| 21 | GR | NATS antenna amp. | Input | OFF → ON | Ignition switch (OFF → ON) | Just after turning ignition switch ON: Pointer of tester should move. |
| 23 | G | Security indicator lamp | Output | OFF | Goes OFF → illuminates (Every 2.4 seconds) | Battery voltage → 0V |
| 25 | BR | NATS antenna amp. | Input | OFF → ON | Ignition switch (OFF → ON) | Just after turning ignition switch ON: Pointer of tester should move. |
| 27 | W | Compressor ON signal | Input | ON | A/C switch OFF | 5V |
| | | | | | A/C switch ON | 0V |
| 28 | R | Front blower monitor | Input | ON | Front blower motor OFF | Battery voltage |
| | | | | | Front blower motor ON | 0V |
| 29 | G | Hazard switch | Input | OFF | ON | 0V |
| | | | | | OFF | 5V |
| 31 | GR | Cargo lamp switch | Input | OFF | ON | 0V |
| | | | | | OFF | Battery voltage |

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Item | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|--------------------------------------|---------------------|---------------------|--|---|
| | | | | Ignition switch | Operation or condition | |
| 32 | O | Combination switch output 5 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">SKIA5291E</p> |
| 33 | GR | Combination switch output 4 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">SKIA5292E</p> |
| 34 | G | Combination switch output 3 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">SKIA5291E</p> |
| 35 | BR | Combination switch output 2 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">SKIA5292E</p> |
| 36 | LG | Combination switch output 1 | | | | |
| 37 | B | Key switch | Input | OFF | Key inserted | Battery voltage |
| | | | | | Key removed | 0V |
| 38 | W/R | Ignition switch (ON) | Input | ON | — | Battery voltage |
| 39 | L | CAN-H | — | — | — | — |
| 40 | P | CAN-L | — | — | — | — |
| 41 | Y | Rear window defogger switch | Input | ON | Rear window defogger switch ON | 0V |
| | | | | | Rear window defogger switch OFF | 5V |
| 45 | V | Lock switch | Input | OFF | ON (lock) | 0V |
| | | | | | OFF | Battery voltage |
| 46 | LG | Unlock switch | Input | OFF | ON (unlock) | 0V |
| | | | | | OFF | Battery voltage |
| 47 | GR | Front door switch LH (All) | Input | OFF | ON (open) | 0V |
| | | Rear door switch upper LH (King Cab) | | | OFF (closed) | Battery voltage |
| | | Rear door switch lower LH (King Cab) | | | | |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Item | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) | |
|----------|------------|--------------------------------------|---------------------|---------------------|--|---|----|
| | | | | Ignition switch | Operation or condition | | |
| 48 | P | Rear door switch LH (Crew Cab) | Input | OFF | ON (open) | 0V | |
| | | | | | OFF (closed) | Battery voltage | |
| 50 | P | Cargo lamp | Output | OFF | Any door open (ON) | 0V | |
| | | | | | All doors closed (OFF) | Battery voltage | |
| 51 | O | Trailer turn signal (right) | Output | ON | Turn right ON | <p style="text-align: right; font-size: small;">SKIA3009J</p> | |
| 52 | LG | Trailer turn signal (left) | Output | ON | Turn left ON | <p style="text-align: right; font-size: small;">SKIA3009J</p> | |
| 56 | R/Y | Battery saver output | Output | OFF | 15 minutes after ignition switch is turned OFF | 0V | |
| | | | | ON | — | Battery voltage | |
| 57 | R/Y | Battery power supply | Input | — | — | Battery voltage | |
| 58 | W | Optical sensor | Input | ON | When optical sensor is illuminated | 3.1V or more | |
| | | | | | When optical sensor is not illuminated | 0.6V or less | |
| 59 | GR | Front door lock assembly LH (unlock) | Output | OFF | OFF (neutral) | 0V | |
| | | | | | ON (unlock) | Battery voltage | |
| 60 | LG | Turn signal (left) | Output | ON | Turn left ON | <p style="text-align: right; font-size: small;">SKIA3009J</p> | |
| 61 | G | Turn signal (right) | Output | ON | Turn right ON | <p style="text-align: right; font-size: small;">SKIA3009J</p> | |
| 63 | BR | Interior room/map lamp | Output | OFF | Any door switch | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage | |
| 65 | V | All door lock actuators (lock) | Output | OFF | OFF (neutral) | 0V | |
| | | | | | ON (lock) | Battery voltage | |

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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

| Terminal | Wire color | Item | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|-----------------|------------|--|---------------------|---------------------|---|---------------------------------------|
| | | | | Ignition switch | Operation or condition | |
| 66 | L | Front door lock actuator RH, rear door lock actuators LH/RH (unlock) | Output | OFF | OFF (neutral) | 0V |
| | | | | | ON (unlock) | Battery voltage |
| 67 | B | Ground | Input | ON | — | 0V |
| 68 ¹ | O | Power window power supply (RAP) | Output | — | Ignition switch ON | Battery voltage |
| | | | | | Within 45 seconds after ignition switch OFF | Battery voltage |
| | | | | | More than 45 seconds after ignition switch OFF | 0V |
| | | | | | When front door LH or RH is open or power window timer operates | 0V |
| 68 ² | SB | Power window power supply (RAP) | Output | — | Ignition switch ON | Battery voltage |
| | | | | | Within 45 seconds after ignition switch OFF | Battery voltage |
| | | | | | More than 45 seconds after ignition switch OFF | 0V |
| | | | | | When front door LH or RH is open or power window timer operates | 0V |
| 69 | P | Power window power supply (BAT) | Output | OFF | — | Battery voltage |
| 70 | W | Battery power supply | Input | OFF | — | Battery voltage |

1: King cab (with power door lock system)

2: Crew cab (without power door lock system)

REAR WINDOW DEFOGGER

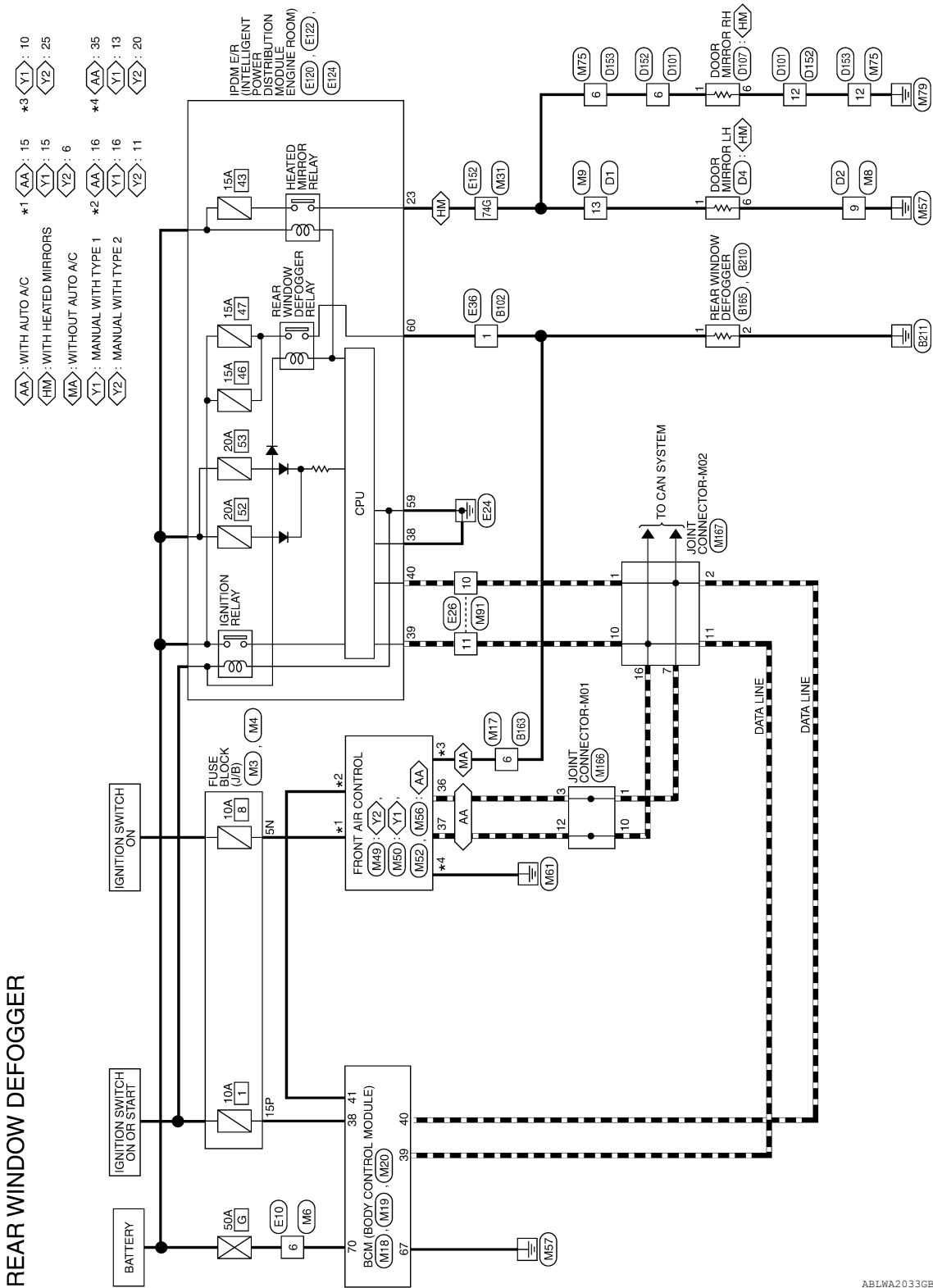
< WIRING DIAGRAM >

WIRING DIAGRAM

REAR WINDOW DEFOGGER

Wiring Diagram

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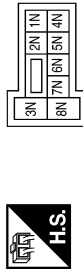
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REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

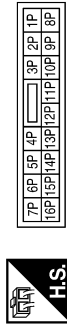
REAR WINDOW DEFOGGER CONNECTORS

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



| | | | | | |
|--------------|----|---------------|-----|-------------|---|
| Terminal No. | 5N | Color of Wire | W/G | Signal Name | - |
|--------------|----|---------------|-----|-------------|---|

| | |
|-----------------|------------------|
| Connector No. | M4 |
| Connector Name | FUSE BLOCK (J/B) |
| Connector Color | WHITE |



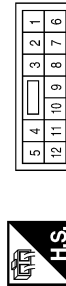
| | | | | | |
|--------------|-----|---------------|-----|-------------|---|
| Terminal No. | 15P | Color of Wire | W/R | Signal Name | - |
|--------------|-----|---------------|-----|-------------|---|

| | |
|-----------------|--------------|
| Connector No. | M6 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



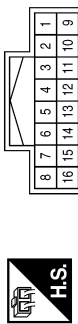
| | | | | | |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 6 | Color of Wire | W | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

| | |
|-----------------|--------------|
| Connector No. | M8 |
| Connector Name | WIRE TO WIRE |
| Connector Color | BROWN |



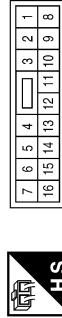
| | | | | | |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 9 | Color of Wire | B | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

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



| | | | | | |
|--------------|----|---------------|----|-------------|---|
| Terminal No. | 13 | Color of Wire | LG | Signal Name | - |
|--------------|----|---------------|----|-------------|---|

| | |
|-----------------|--------------|
| Connector No. | M17 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| | | | | | |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 6 | Color of Wire | R | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

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

| | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
| 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 |



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

| | |
|-----------------|---------------------------|
| Connector No. | M19 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE |

| | | | | | | | | |
|----|----|----|----|----|----|----|----|----|
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |
| 50 | 51 | 52 | 53 | 54 | 55 | | | |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|------------------|
| 41 | Y | REAR DEFOGGER SW |

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

| | | | | | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 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 |
|--------------|---------------|-------------|
| 38 | W/R | IGN SW |
| 39 | L | CAN-H |
| 40 | P | CAN-L |

| | |
|-----------------|--|
| Connector No. | M50 |
| Connector Name | FRONT AIR CONTROL (MANUAL WITH TYPE 1) |
| Connector Color | BLACK |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-----------------------|
| 10 | R | RR DEF STATUS |
| 13 | B | GND |
| 15 | W/G | IGN |
| 16 | Y | REAR DEFOGGER REQUEST |

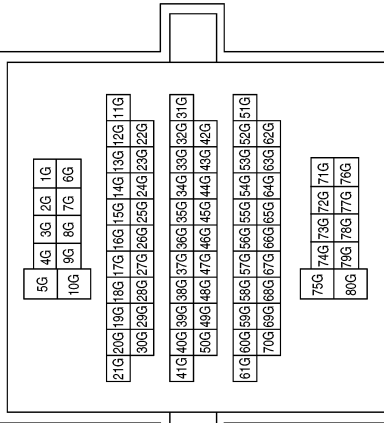
| | |
|-----------------|--|
| Connector No. | M49 |
| Connector Name | FRONT AIR CONTROL (MANUAL WITH TYPE 2) |
| Connector Color | BLACK |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-----------------------|
| 6 | W/G | IGN |
| 11 | Y | REAR DEFOGGER REQUEST |
| 20 | B | GND |
| 25 | R | RR DEF STATUS |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 74G | LG | - |

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A B C D E F G H I J K DEF M N O P

REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

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

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6 | L | - |
| 12 | B | - |

| | |
|-----------------|-----------------------------------|
| Connector No. | M56 |
| Connector Name | FRONT AIR CONTROL (WITH AUTO A/C) |
| Connector Color | BLACK |

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



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

| | |
|-----------------|-----------------------------------|
| Connector No. | M52 |
| Connector Name | FRONT AIR CONTROL (WITH AUTO A/C) |
| Connector Color | BLACK |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|--------------------|
| 15 | W/G | IGN |
| 16 | Y | REAR DEFOG REQUEST |

| | |
|-----------------|---------------------|
| Connector No. | M167 |
| Connector Name | JOINT CONNECTOR-M02 |
| Connector Color | BLUE |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | P | - |
| 2 | P | - |
| 7 | P | - |
| 10 | L | - |
| 11 | L | - |
| 16 | L | - |

| | |
|-----------------|---------------------|
| Connector No. | M166 |
| Connector Name | JOINT CONNECTOR-M01 |
| Connector Color | BLUE |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | P | - |
| 3 | P | - |
| 10 | L | - |
| 12 | L | - |

| | |
|-----------------|--------------|
| Connector No. | M91 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10 | P | - |
| 11 | L | - |

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REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

| | |
|-----------------|--------------|
| Connector No. | E36 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | GR | - |

| | |
|-----------------|--------------|
| Connector No. | E26 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10 | P | - |
| 11 | L | - |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6 | W | - |

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



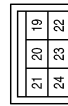
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 59 | B | GND (POWER) |
| 60 | GR | RR DEF |

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



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

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|---------------|
| 23 | LG | HEATED MIRROR |

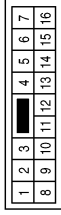
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REAR WINDOW DEFOGGER

< WIRING DIAGRAM >

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|-----------------|--------------|
| Connector No. | B163 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



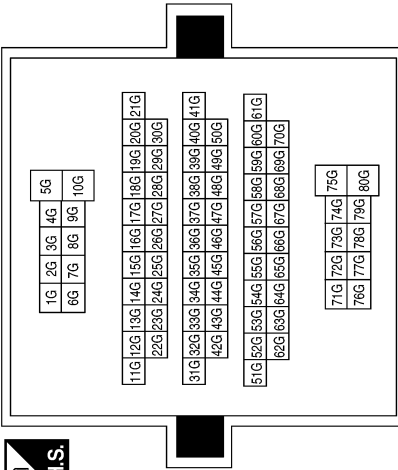
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|--------------|---|---------------|---|-------------|---|
| Terminal No. | 6 | Color of Wire | R | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

| | |
|-----------------|--------------|
| Connector No. | B102 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



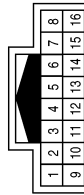
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|--------------|---|---------------|---|-------------|---|
| Terminal No. | 1 | Color of Wire | B | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

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



| | | | | | |
|--------------|-----|---------------|----|-------------|---|
| Terminal No. | 74G | Color of Wire | LG | Signal Name | - |
|--------------|-----|---------------|----|-------------|---|

| | |
|-----------------|--------------|
| Connector No. | D1 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| | | | | | |
|--------------|----|---------------|-----|-------------|---|
| Terminal No. | 13 | Color of Wire | L/B | Signal Name | - |
|--------------|----|---------------|-----|-------------|---|

| | |
|-----------------|----------------------|
| Connector No. | B210 |
| Connector Name | REAR WINDOW DEFOGGER |
| Connector Color | BLACK |



| | | | | | |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 2 | Color of Wire | B | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

| | |
|-----------------|----------------------|
| Connector No. | B165 |
| Connector Name | REAR WINDOW DEFOGGER |
| Connector Color | BLACK |




| | | | | | |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 1 | Color of Wire | B | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

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REAR WINDOW DEFOGGER

< WIRING DIAGRAM >


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



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

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6 | L/B | - |
| 12 | B | - |


| | |
|-----------------|--|
| Connector No. | D4 |
| Connector Name | DOOR MIRROR LH (WITH HEATED MIRROR) |
| Connector Color | BLACK |



| | | | | |
|---|---|---|---|----|
| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | L/B | - |
| 6 | B | - |


| | |
|-----------------|--------------|
| Connector No. | D2 |
| Connector Name | WIRE TO WIRE |
| Connector Color | BROWN |



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

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 9 | B | - |


| | |
|-----------------|--------------|
| Connector No. | D153 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



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

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6 | L | - |
| 12 | B | - |


| | |
|-----------------|--------------|
| Connector No. | D152 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



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

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6 | L | - |
| 12 | B | - |

| | |
|-----------------|--|
| Connector No. | D107 |
| Connector Name | DOOR MIRROR RH (WITH HEATED MIRROR) |
| Connector Color | BLACK |



| | | | | |
|---|---|---|---|----|
| 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | L/B | - |
| 6 | B | - |

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REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

Diagnosis Procedure

INFOID:000000008789569

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.

Refer to [DEF-8, "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-10, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace the malfunctioning parts.

3. CHECK REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

Check rear window defogger power supply and ground circuit.

Refer to [DEF-11, "Component Function Check"](#).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-49, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

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

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

INFOID:000000008789570

1. CHECK REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

Check rear window defogger power supply and ground circuit.

Refer to [DEF-11, "Component Function Check"](#).

Is the inspection result normal?

YES >> Refer to [GI-49, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

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

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

INFOID:000000008789571

1. CHECK BOTH DOOR MIRROR DEFOGGER

-
1. Check door mirror LH. Refer to [DEF-14, "Component Function Check"](#).
 2. Check door mirror RH. Refer to [DEF-16, "Component Function Check"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-49, "Intermittent Incident"](#).
NO >> Repair or replace the malfunctioning parts.

DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

< SYMPTOM DIAGNOSIS >

DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

Diagnosis Procedure

INFOID:000000008789572

1. CHECK DOOR MIRROR DEFOGGER LH

Check door mirror defogger LH.

Refer to [DEF-14, "Component Function Check"](#).

Is the inspection result normal?

YES >> Refer to [GI-49, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

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PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

< SYMPTOM DIAGNOSIS >

PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

Diagnosis Procedure

INFOID:000000008789573

1. CHECK DOOR MIRROR DEFOGGER RH

Check door mirror defogger RH.

Refer to [DEF-16, "Component Function Check"](#).

Is the inspection result normal?

YES >> Refer to [GI-49, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

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

< SYMPTOM DIAGNOSIS >

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

Diagnosis Procedure

INFOID:000000008789574

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check that the rear window defogger switch is operating normally.

Is the inspection result normal?

- YES >> Refer to [GI-49, "Intermittent Incident"](#).
- NO >> Refer to [DEF-8, "Diagnosis Procedure"](#).

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000008789575

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

WARNING:

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

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

WARNING:

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

Handling for Adhesive and Primer

INFOID:000000008789576

- 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.

FILAMENT

< REMOVAL AND INSTALLATION >

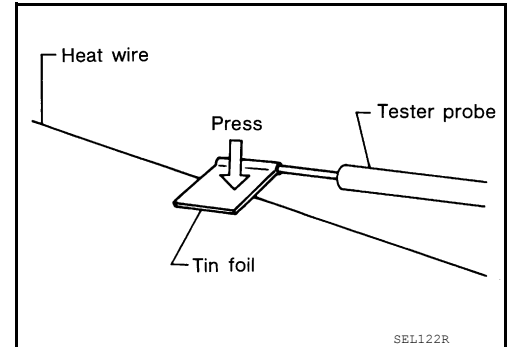
REMOVAL AND INSTALLATION

FILAMENT

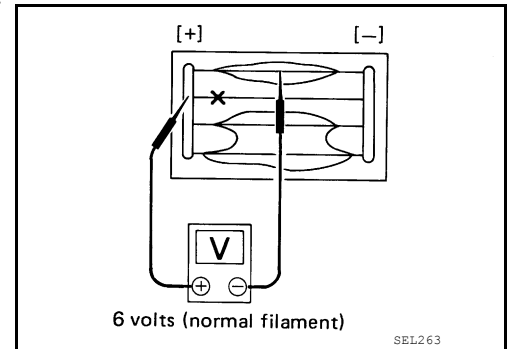
Filament Check

INFOID:000000008789577

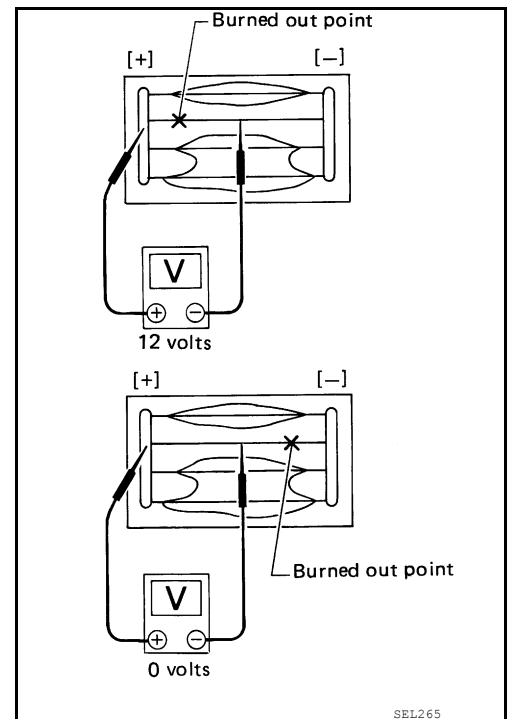
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



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



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



Filament Repair

INFOID:000000008789578

REPAIR EQUIPMENT

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

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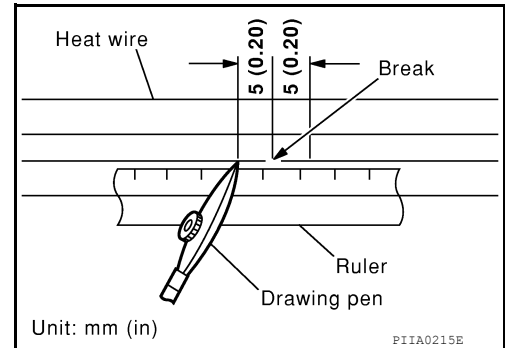
FILAMENT

< REMOVAL AND INSTALLATION >

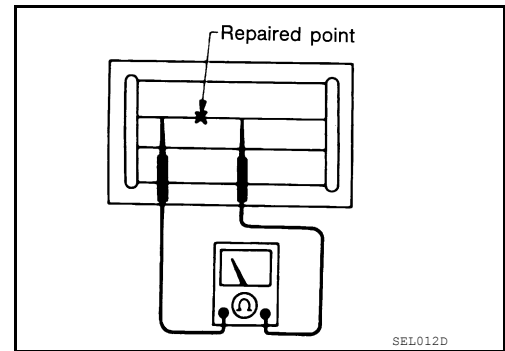
- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. 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.

