# SECTION PWC

# POWER WINDOW CONTROL SYSTEM



## CONTENTS

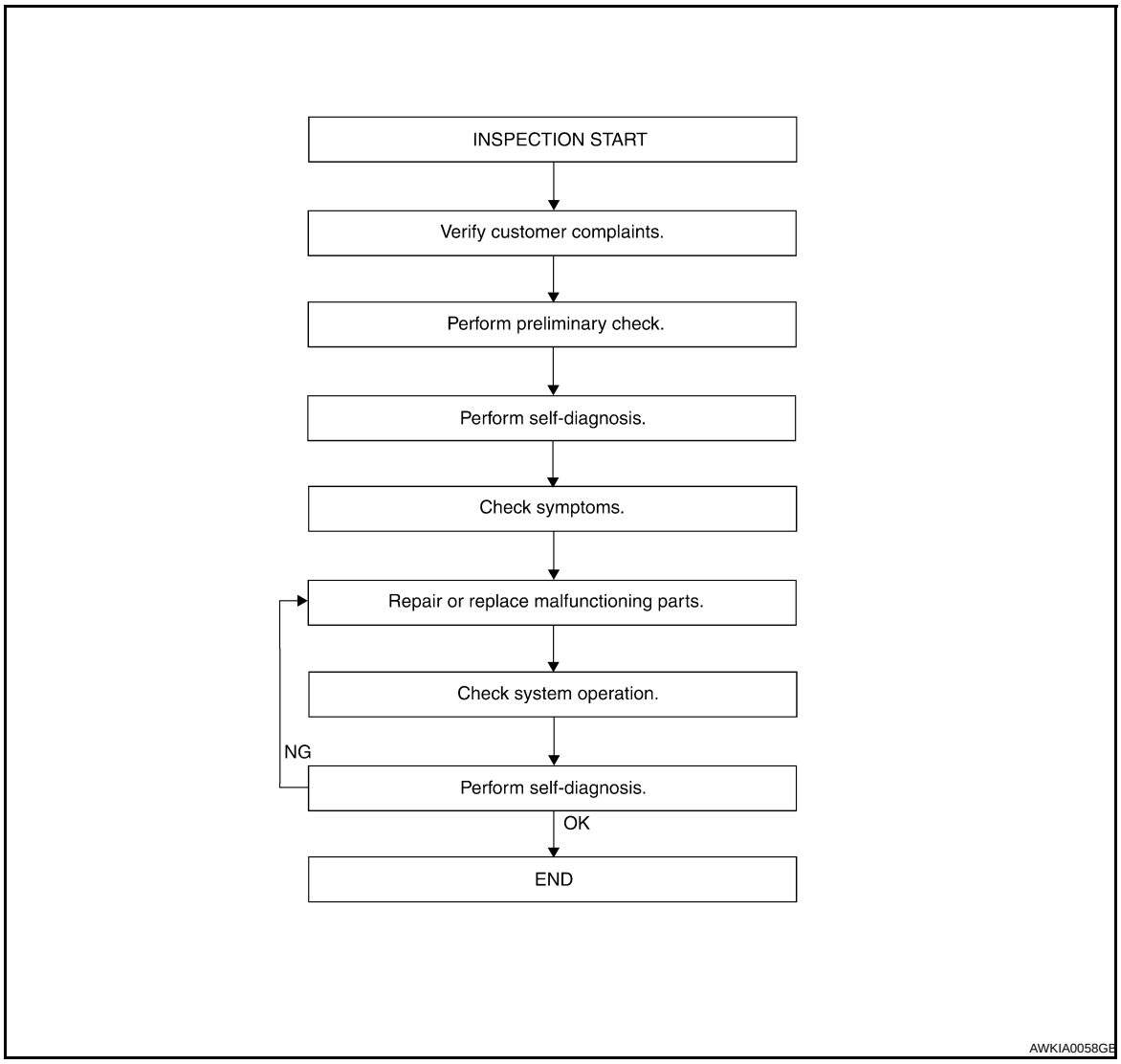
# BASIC INSPECTION

## DIAGNOSIS AND REPAIR WORKFLOW

### Work Flow

INFOID:0000000001675461

WORK FLOW




DETAILED FLOW

#### 1. CUSTOMER INFORMATION

Interview the customer to obtain detailed information about the symptom.

>> GO TO 2

#### 2. PRELIMINARY CHECK

Perform preliminary check. Refer to PWC-6, "System Diagram".

>> GO TO 3

#### 3. SELF-DIAGNOSIS

Perform self-diagnosis. Refer to BCS-47, "DTC Index".

>> GO TO 4

## 4. SYMPTOM

Check for symptoms. Refer to PWC-84, "Diagnosis Procedure".

>> GO TO 5

## 5. MALFUNCTIONING PARTS

Repair or replace the applicable parts.

>> GO TO 6

## 6. SYSTEM OPERATION

Check system operation.

>> GO TO 7

## 7. SELF-DIAGNOSIS

Perform self-diagnosis. Refer to BCS-47, "DTC Index".

Are any fault codes indicated?

YES >> GO TO 5
NO >> Inspection End.

# FUNCTION DIAGNOSIS

## POWER WINDOW SYSTEM

### System Diagram

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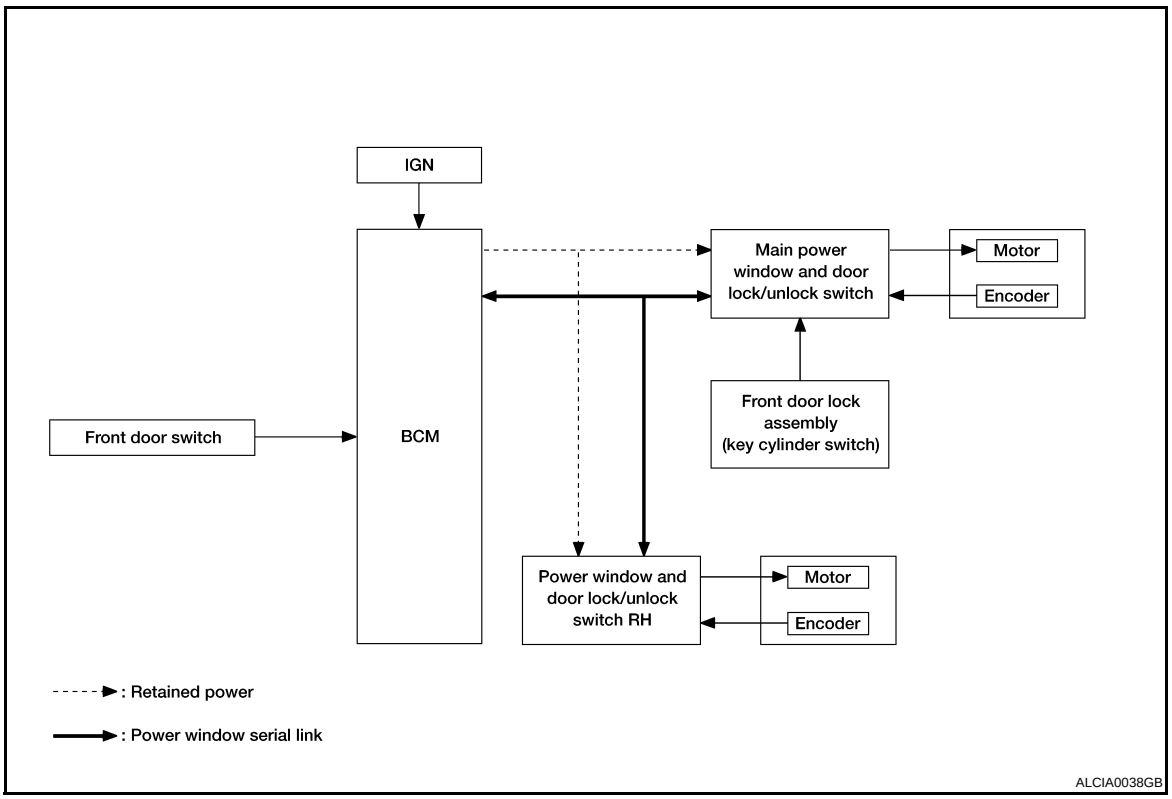
#### FRONT WINDOW ANTI-PINCH SYSTEM




### System Description

INFOID:0000000001675463

#### POWER WINDOW MAIN SWITCH

INPUT/OUTPUT SIGNAL CHART

| Item | Input signal to main power window and door lock/unlock switch | Main power window and door lock/unlock switch function | Actuator |
|---|---|---|---|
| Key cylinder switch | LOCK/UNLOCK signal (more than 1.5 seconds over) | Power window control | Front power window motor |
| Encoder | Encoder pulse signal | | |
| Main power window and door lock/unlock switch | Front power window motor LH UP/ DOWN signal | | |
| Power window and door lock/unlock switch RH | Front power window motor RH UP/ DOWN signal | | |
| BCM | RAP signal | | |
| Rear power window switch (Crew Cab) | Rear power window motor UP/DOWN signal | | Rear power window motor |

#### POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

INPUT/OUTPUT SIGNAL CHART

| Item | Input signal to front power window switch | Front power window switch function | Actuator |
|---|---|---|---|
| Power window and door lock/unlock switch RH | Front power window motor RH UP/ DOWN signal | Power window control | Front power window motor RH |
| Encoder | Encoder pulse signal | | |
| BCM | RAP signal | | |

## POWER WINDOW OPERATION

- Power window system is operable during the retained power operation timer after turning ignition switch ON and OFF.
- Main power window and door lock/unlock switch can open/close all windows.
- Power window and door lock unlock switch RH & rear power window switches LH and RH can open/close the corresponding windows.

## REAR POWER DROP GLASS OPERATION (IF EQUIPPED)

- Rear power drop glass system is operable during the retained power operation timer after turning ignition switch ON and OFF.
- Rear power drop glass switch can open/close the rear power drop glass.

## POWER WINDOW AUTO-OPERATION (FRONT LH & RH)

- AUTO UP/DOWN operation can be performed when main power window and door lock/unlock switch & power window and door lock/unlock switch RH turns to AUTO.
- Encoder continues detecting the movement of power window motor and transmits to power window switch as the encoder pulse signal while power window motor is operating.
- Power window switch reads the changes of encoder signal and stops AUTO operation when door glass is at fully opened/closed position.
- Power window motor is operable in case encoder is malfunctioning.

## RETAINED POWER OPERATION

- Retained power operation is an additional power supply function that enables power window system to operate during the 45 seconds even when ignition switch is turned OFF

Retained power function cancel conditions

- Front door CLOSE (door switch OFF)→OPEN (door switch ON).
- When ignition switch is ON.
- When timer time passes. (45 seconds)

## POWER WINDOW LOCK

Ground circuit inside main power window and door lock/unlock switch shuts off when power window lock switch is ON. This inhibits power window switch operation except with the main power window and door lock/unlock switch.

## ANTI-PINCH OPERATION (FRONT LH & RH)

- Pinch foreign material in the door glass during AUTO-UP operation, and it is the anti-pinch function that lowers the door glass 150 mm (5.91 in) or 2 seconds when detected.
- Encoder continues detecting the movement of power window motor and transmits to power window switch as the encoder pulse signal while power window motor is operating.
- Resistance is applied to the power window motor rotation that changes the frequency of encoder pulse signal if foreign material is trapped in the door glass.
- Power window switch controls to lower the window glass for 150 mm (5.91 in) or 2 seconds after it detects encoder pulse signal frequency change.

OPERATION CONDITION

- When all door glass AUTO-UP operation is performed (anti-pinch function does not operate just before the door glass closes and is fully closed)

**NOTE:**

Depending on environment and driving conditions, if a similar impact or load is applied to the door glass, it may lower.

## KEY CYLINDER SWITCH OPERATION

Hold the door key cylinder to the LOCK or UNLOCK direction for more than 1 second to OPEN or CLOSE front power windows when ignition switch is OFF. In addition, it stops when key position is moved to NEUTRAL when operating.

OPERATION CONDITION

- Ignition switch OFF
- Hold door key cylinder to LOCK position for more than 1 second to perform CLOSE operation of the door glass.
- Hold door key cylinder to UNLOCK position for more than 1 second to perform OPEN operation of the door glass.

### KEYLESS POWER WINDOW DOWN OPERATION (FRONT LH & RH)

Front power windows open when the unlock button on keyfob is activated and kept pressed for more than 3(NOTE) seconds with the ignition switch OFF. The windows keep opening if the unlock button is continuously pressed.

The power window opening stops when the following operations are performed:

- When the unlock button is kept pressed more than 15 seconds.
- When the ignition switch is turned ON while the power window opening is operated.
- When the unlock button is released.

While retained power operation activate, keyless power window down function cannot be operated.

**NOTE:**

Keyless power window down operation mode can be changed by “PW DOWN SET” mode in “WORK SUPPORT”. Refer to DLK-16, "REMOTE KEYLESS ENTRY : CONSULT-III Function (BCM - RKE)".

**NOTE:**

Use CONSULT-III to change settings.

MODE1 (3sec)/MODE2 (OFF)/MODE3 (5sec)

## Component Parts Location

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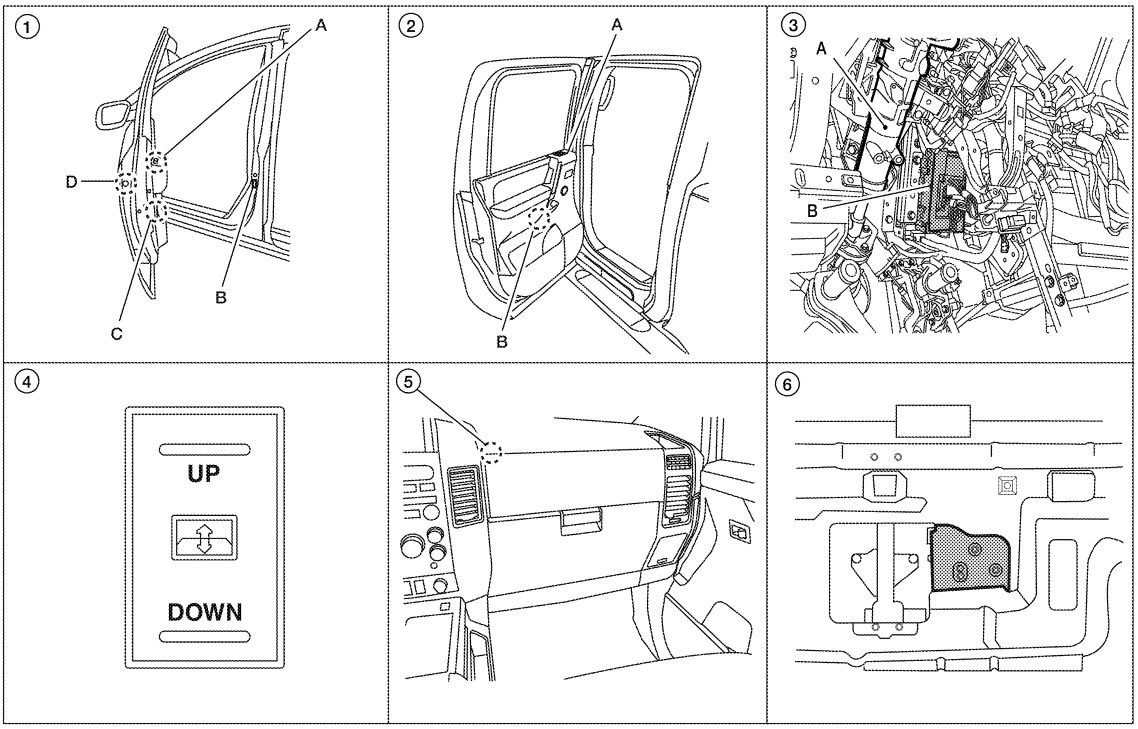


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1. A. Main power window and door lock/unlock switch D7, D8
   Power window and door lock/unlock switch RH D105
   B. Front door switch LH B8, RH B108
   C. Front power window motor LH D9, RH D104
   D. Front door lock assembly LH (key cylinder switch) D14
2. A. Rear power window switch LH D203, RH D303 (Crew Cab)
   B. Rear power window motor LH D204, RH D304 (Crew Cab)
3. A. Steering column (view with instrument panel removed)
   B. BCM M18, M20
4. Rear power drop glass switch R103 (Crew Cab)
5. Rear power drop glass up relay M154 (Crew Cab)
   Rear power drop glass down relay M155 (Crew Cab)
6. Rear power drop glass motor B80 (view with rear finisher removed) (Crew Cab)

## Component Description

INFOID:0000000001675465

### POWER WINDOW SYSTEM

| Component | Function |
|---|---|
| BCM | • Supplies power supply to power window switch.<br>• Controls retained power. |
| Main power window and door lock/unlock switch | • Directly controls all power window motor of all doors.<br>• Controls anti-pinch operation of front power window LH. |
| Power window and door lock/unlock switch RH | • Controls front power window motor RH.<br>• Controls anti-pinch operation of front power window RH. |
| Rear power window switch (Crew Cab) | • Controls rear power window motors LH and RH. |
| Rear power drop glass switch (Crew Cab) | • Controls rear power drop glass motor. |
| Front power window motor LH | • Integrates the ENCODER POWER and WINDOW MOTOR.<br>• Starts operating with signals from main power window and door lock/unlock switch.<br>• Transmits power window motor rotation as a pulse signal to main power window and door lock/unlock switch. |
| Front power window motor RH | Starts operating with signals from main power window and door lock/unlock switch & power window and door lock/unlock switch RH. |
| Rear power window motor (Crew Cab) | Starts operating with signals from main power window and door lock/unlock switch & rear power window switch. |
| Rear power drop glass motor (Crew Cab) | Starts operating with signal from rear power drop glass switch. |
| Front door lock assembly LH (key cylinder switch) | Transmits operation condition of key cylinder switch to power window main switch. |
| Front door switch LH or RH | Detects door open/close condition and transmits to BCM. |

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

INFOID:0000000001675466

#### APPLICATION ITEM
CONSULT-III performs the following functions via CAN communication with BCM.

| Diagnosis mode | Function Description |
|---|---|
| WORK SUPPORT | Changes the setting for each system function. |
| SELF-DIAG RESULTS | Displays the diagnosis results judged by BCM. Refer to BCS-47, "DTC Index". |
| CAN DIAG SUPPORT MNTR | Monitors the reception status of CAN communication viewed from BCM. |
| DATA MONITOR | The BCM input/output signals are displayed. |
| ACTIVE TEST | The signals used to activate each device are forcibly supplied from BCM. |
| ECU IDENTIFICATION | The BCM part number is displayed. |
| CONFIGURATION | This function is not used even though it is displayed. |

#### 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.

| System | Sub system selection item | Diagnosis mode | | |
|---|---|---|---|---|
| | | WORK SUPPORT | DATA MONITOR | ACTIVE TEST |
| BCM | BCM | × | | |
| RAP system | RETAINED PWR | | × | |

## RETAINED PWR
### RETAINED PWR : CONSULT-III Function (BCM - RETAINED PWR)

INFOID:0000000001675467

#### Data monitor

| Monitor Item | Description |
|---|---|
| DOOR SW-DR | Indicates [ON/OFF] condition of front door switch LH. |
| DOOR SW-AS | Indicates [ON/OFF] condition of front door switch RH. |

# COMPONENT DIAGNOSIS

## POWER SUPPLY AND GROUND CIRCUIT CHECK (CREW CAB)

## POWER WINDOW MAIN SWITCH

### POWER WINDOW MAIN SWITCH : Description

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- BCM supplies power.
- It operates each power window motor via corresponding power window switch and makes window move up/down when main power window and door lock/unlock switch is operated.

### POWER WINDOW MAIN SWITCH : Component Function Check

INFOID:0000000001675469

Main Power Window And Door Lock/Unlock Switch

1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH FUNCTION

Does power window motor operate with main power window and door lock/unlock switch operation?

Is the inspection result normal?

YES >> Main power window and door lock/unlock switch power supply and ground circuit are OK.
NO >> Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

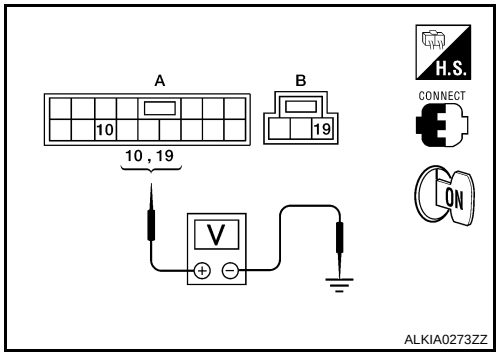
### POWER WINDOW MAIN SWITCH : Diagnosis Procedure

INFOID:0000000001675470

Main Power Window And Door Lock/Unlock Switch Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connectors (A and B) and ground.



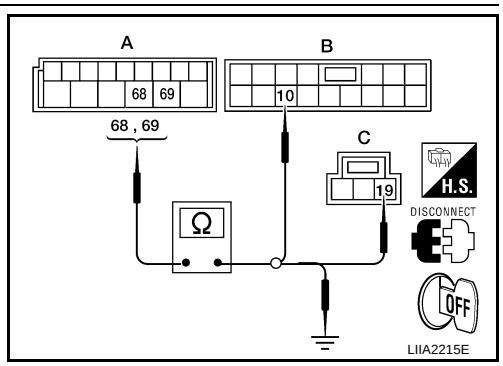

| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Main power window and door lock/unlock switch connector | Terminal | | |
| D7 (A) | 10 | Ground | Battery voltage |
| D8 (B) | 19 | | |

Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and main power window and door lock/unlock switch.
3. Check continuity between BCM connector (A) and main power window and door lock/unlock switch connectors (B and C).




| BCM connector | Terminal | Main power window and door lock/unlock switch connector | Terminal | Continuity |
|---|---|---|---|---|
| M20 (A) | 68 | D7 (B) | 10 | Yes |
| | 69 | D8 (C) | 19 | |

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

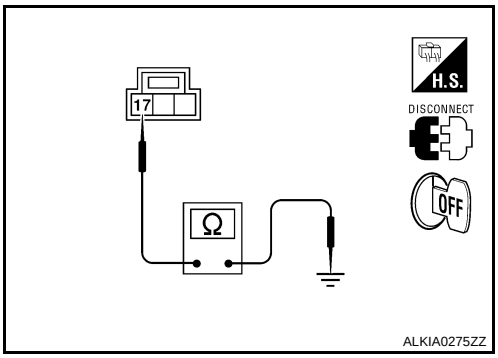
| BCM connector | Terminal | Ground | Continuity |
|---|---|---|---|
| M20 (A) | 68 | | No |
| | 69 | | |

Is the inspection result normal?

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

## 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch.
3. Check continuity between main power window and door lock/unlock switch connector and ground.



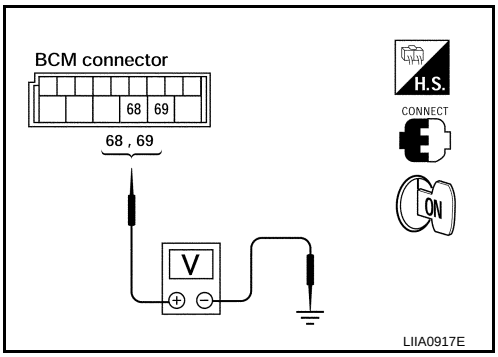

| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D8 | 17 | | Yes |

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".
NO >> Repair or replace harness.

## 4. CHECK BCM OUTPUT SIGNAL

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



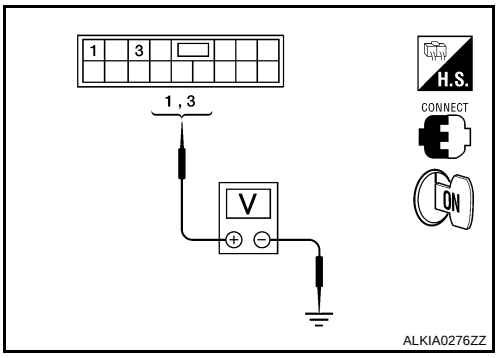

| Terminals | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| BCM connector | Terminal | | |
| M20 | 68 | Ground | Battery voltage |
| | 69 | | |

Is the measurement value within the specification?

YES >> Check main power window and door lock/unlock switch output signal (rear power window switch LH) GO TO 5
YES >> Check main power window and door lock/unlock switch output signal (rear power window switch RH) GO TO 6
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation".

## 5. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL (REAR POWER WINDOW SWITCH LH)

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connector and ground.



| Terminal | | | Window condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Main power window and door lock/unlock switch connector | Terminal | | | |
| D7 | 1 | Ground | UP | Battery voltage |
| | | | DOWN | 0 |
| | 3 | | UP | 0 |
| | | | DOWN | Battery voltage |

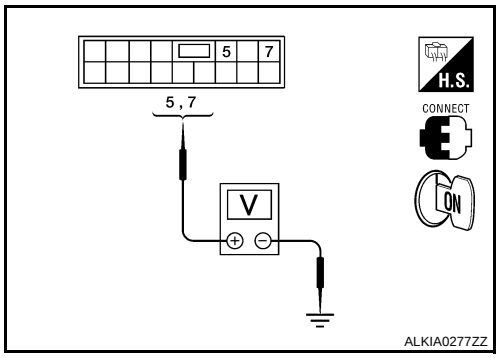
Is the measurement value within the specification?

YES >> GO TO 7

NO >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".

## 6. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL (REAR POWER WINDOW SWITCH RH)

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connector and ground.




| Terminal | | | Window condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Main power window and door lock/unlock switch connector | Terminal | | | |
| D7 | 7 | Ground | UP | Battery voltage |
| | | | DOWN | 0 |
| | 5 | | UP | 0 |
| | | | DOWN | Battery voltage |

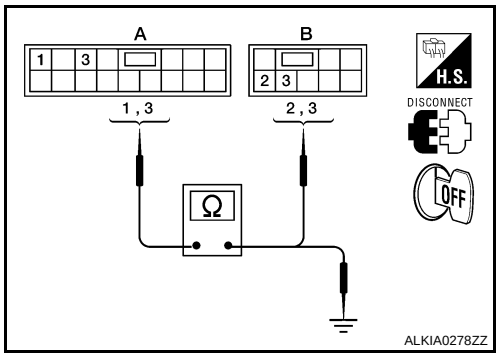
Is the measurement value within the specification?

YES >> GO TO 8

NO >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".

## 7. CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH LH)

1. Turn ignition switch OFF.
2. Disconnect rear power window switch LH.
3. Check continuity between main power window and door lock/unlock switch connector and rear power window switch LH connector.




| Main power window and door lock/unlock switch connector | Terminal | Rear power window switch LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 | 1 | D203 | 2 | Yes |
| | 3 | | 3 | |

4. Check continuity between main power window and door lock/unlock switch connector and ground.

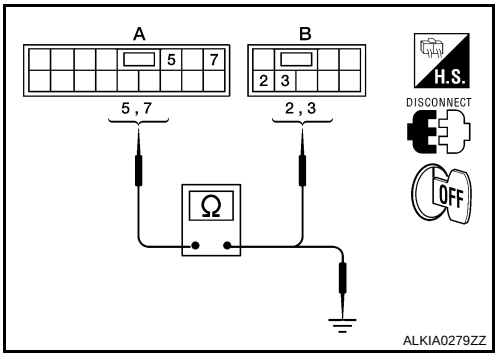
| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 | 1 | | No |
| | 3 | | |

Is the inspection result normal?

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

## 8. CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH RH)

1. Turn ignition switch OFF.
2. Disconnect rear power window switch RH.
3. Check continuity between main power window and door lock/unlock switch connector and rear power window switch RH connector.




| Main power window and door lock/unlock switch connector | Terminal | Rear power window switch RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 | 5 | D303 | 3 | Yes |
| | 7 | | 2 | |

4. Check continuity between main power window and door lock/unlock switch connector and ground.

| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 | 5 | | No |
| | 7 | | |

Is the inspection result normal?

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

## 9. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Check main power window and door lock/unlock switch.
Refer to PWC-14, "POWER WINDOW MAIN SWITCH : Component Inspection".

Is the inspection result normal?

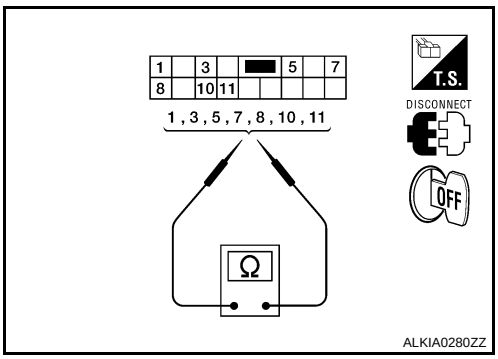
YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".

# POWER WINDOW MAIN SWITCH : Component Inspection

INFOID:0000000001675471

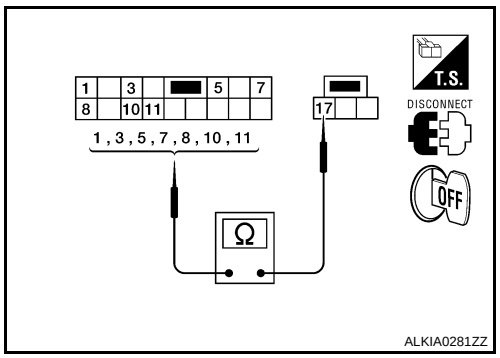
## 1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

1. Check main power window and door lock/unlock switch.



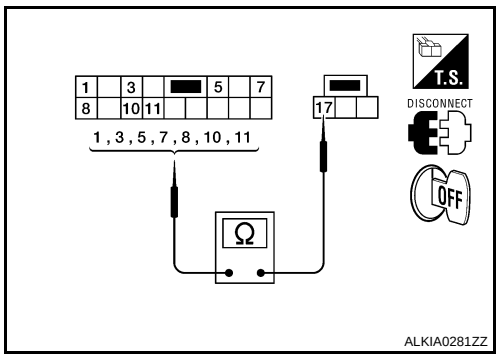

| Terminal | | Main power window and door lock/unlock switch condition | | Continuity |
|---|---|---|---|---|
| 10 | 1 | Rear LH | UP | Yes |
| 10 | 7 | Rear RH | | |
| 1 | 3 | Rear LH | NEUTRAL | |
| 5 | 7 | Rear RH | | |
| 10 | 3 | Rear LH | DOWN | |
| 10 | 5 | Rear RH | | |

2. Check continuity between main power window and door lock/unlock switch (power window lock switch). (Lock operation).




| Terminal | | Main power window and door lock/unlock switch condition | | Continuity |
|---|---|---|---|---|
| 3 | 17 | Rear LH | UP | No |
| 5 | | Rear RH | | |
| 1 | | Rear LH | NEUTRAL | |
| 3 | | | | |
| 5 | | Rear RH | | |
| 7 | | | | |
| 1 | | Rear LH | DOWN | |
| 7 | | Rear RH | | |

3. Check continuity between main power window and door lock/unlock switch (power window lock switch). (Unlock operation).




| Terminal | | Main power window and door lock/unlock switch condition | | Continuity |
|---|---|---|---|---|
| 3 | 17 | Rear LH | UP | Yes |
| 5 | | Rear RH | | |
| 1 | | Rear LH | NEUTRAL | |
| 3 | | | | |
| 5 | | Rear RH | | |
| 7 | | | | |
| 1 | | Rear LH | DOWN | |
| 7 | | Rear RH | | |

Is the inspection result normal?

YES >> Main power window and door lock/unlock switch is OK.
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".

# FRONT POWER WINDOW SWITCH

## FRONT POWER WINDOW SWITCH : Description

INFOID:0000000001675472

- BCM supplies power.
- Front power window motor RH will be operated if power window and door lock/unlock switch RH is operated.

## FRONT POWER WINDOW SWITCH : Component Function Check

INFOID:0000000001675473

### Power Window And Door Lock/Unlock Switch RH

1. CHECK FRONT POWER WINDOW MOTOR RH FUNCTION

Does front power window motor RH operate with power window and door lock/unlock switch RH operation?

Is the inspection result normal?

YES >> Power window and door lock/unlock switch RH power supply and ground circuit are OK.
NO >> Refer to PWC-15, "FRONT POWER WINDOW SWITCH : Diagnosis Procedure".

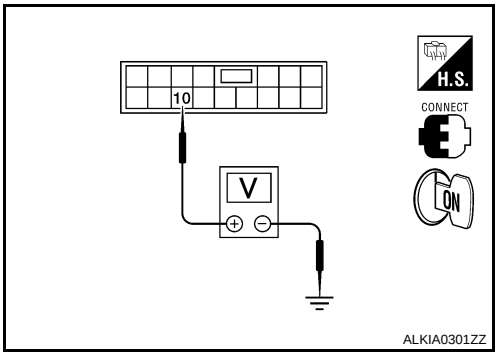
## FRONT POWER WINDOW SWITCH : Diagnosis Procedure

INFOID:0000000001675474

### Power Window And Door Lock/Unlock Switch RH Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between power window and door lock/unlock switch RH connector and ground.



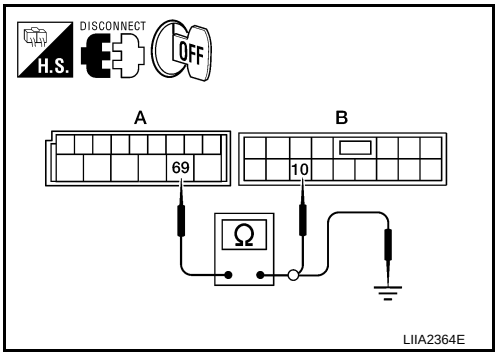

| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Power window and door lock/unlock switch RH connector | Terminal | | |
| D105 | 10 | Ground | Battery voltage |

Is the measurement value within the specification?

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

## 2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and power window and door lock/unlock switch RH.
3. Check continuity between BCM connector (A) and power window and door lock/unlock switch RH connector (B).




| BCM connector | Terminal | Power window and door lock/unlock switch RH connector | Terminal | Continuity |
|---|---|---|---|---|
| M20 (A) | 69 | D105 (B) | 10 | Yes |

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

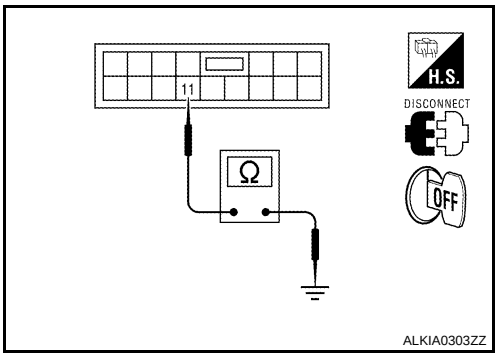
| BCM connector | Terminal | Ground | Continuity |
|---|---|---|---|
| M20 (A) | 69 | | No |

Is the inspection result normal?

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

## 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector and ground.



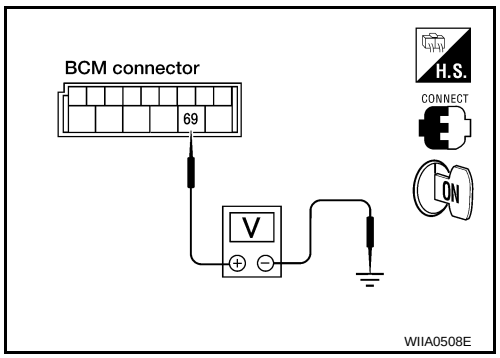

| Power window and door lock/unlock switch RH | Terminal | Ground | Continuity |
|---|---|---|---|
| D105 | 11 | | Yes |

Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".
NO >> Repair or replace harness.

## 4. CHECK BCM OUTPUT SIGNAL

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




| Terminals | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (-) | |
| BCM connector | Terminal | | |
| M20 | 69 | Ground | Battery voltage |

Is the measurement value within the specification?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation".

# REAR POWER WINDOW SWITCH

## REAR POWER WINDOW SWITCH : Description

INFOID:0000000001675475

- BCM supplies power.
- Rear power window motor will be operated if rear power window switch is operated. Rear power window switch.

## REAR POWER WINDOW SWITCH : Component Function Check

INFOID:0000000001675476

### Rear Power Window Switch

1. CHECK REAR POWER WINDOW MOTOR FUNCTION

Does rear power window motor operate with rear power window switch operation?

Is the inspection result normal?

YES >> Rear power window switch power supply and ground circuit are OK.
NO >> Refer to PWC-17, "REAR POWER WINDOW SWITCH : Diagnosis Procedure".

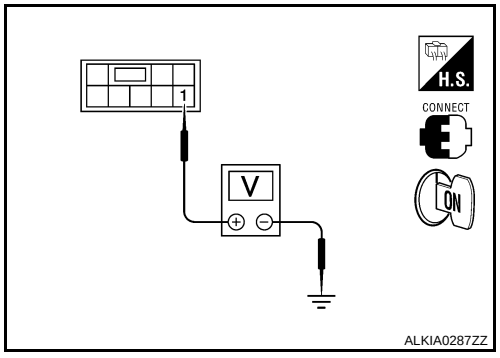
## REAR POWER WINDOW SWITCH : Diagnosis Procedure

INFOID:0000000001675477

### Rear Power Window Switch Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

Check voltage between rear power window switch connector and ground.



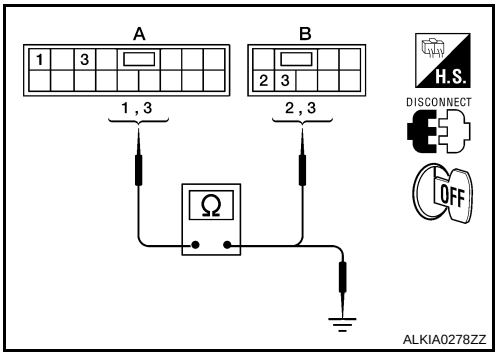

| Terminal | | | | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| (+) | | | (–) | | |
| Rear power window switch connector | | Terminal | | | |
| LH | D203 | 1 | Ground | Ignition switch ON | Battery voltage |
| RH | D303 | | | | |

Is the measurement value within the specification?

YES >> GO TO 2 (Rear power window switch LH)
YES >> GO TO 3 (Rear power window switch RH)
NO >> GO TO 4

2. CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH LH)

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and rear power window switch LH.
3. Check continuity between main power window and door lock/unlock switch connector (A) and rear power window switch LH connector (B).




| Main power window and door lock/unlock switch connector | Terminal | Rear power window switch LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 1 | D203 (B) | 2 | Yes |
| | 3 | | 3 | |

4. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

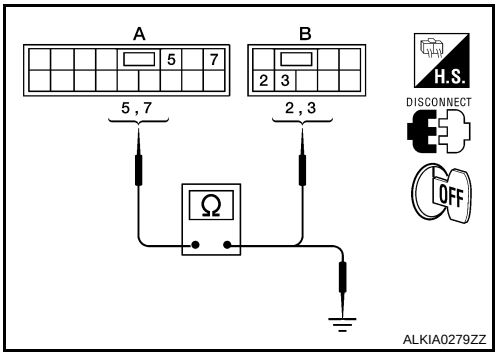
| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 (A) | 1 | | No |
| | 3 | | |

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace harness.

## 3. CHECK HARNESS CONTINUITY (REAR POWER WINDOW SWITCH RH)

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and rear power window switch RH.
3. Check continuity between main power window and door lock/unlock switch connector (A) and rear power window switch RH connector (B).




| Main power window and door lock/unlock switch connector | Terminal | Rear power window switch RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 5 | D303 (B) | 3 | Yes |
| | 7 | | 2 | |

4. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

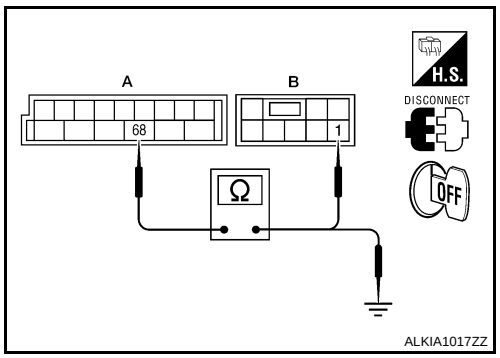
| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 (A) | 5 | | No |
| | 7 | | |

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Repair or replace harness.

## 4. CHECK HARNESS CONTINUITY

1. Disconnect BCM and rear power window switch.
2. Check continuity between BCM connector (A) and rear power window switch connector (B).




| BCM connector | Terminal | Rear power window switch connector | | Terminal | Continuity |
|---|---|---|---|---|---|
| M20 (A) | 68 | LH | D203 (B) | 1 | Yes |
| | | RH | D303 (B) | | |

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

| BCM connector | Terminal | Ground | Continuity |
|---|---|---|---|
| M20 (A) | 68 | | No |

Is the inspection result normal?

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

## 5. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.
Refer to PWC-19, "REAR POWER WINDOW SWITCH : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace rear power window switch. Refer to PWC-101, "Removal and Installation - Rear Door Switch".

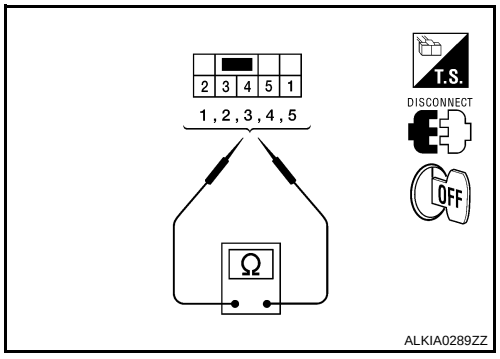
# REAR POWER WINDOW SWITCH : Component Inspection

INFOID:0000000001675478

## COMPONENT INSPECTION

### 1. CHECK REAR POWER WINDOW SWITCH

Check rear power window switch.




| Terminal | | Power window switch condition | Continuity |
|---|---|---|---|
| 1 | 5 | UP | Yes |
| 3 | 4 | | |
| 3 | 4 | NEUTRAL | |
| 5 | 2 | | |
| 1 | 4 | DOWN | |
| 5 | 2 | | |

Is the inspection result normal?

YES >> Rear power window switch is OK.
NO >> Replace rear power window switch. Refer to PWC-101, "Removal and Installation - Rear Door Switch".

# POWER SUPPLY AND GROUND CIRCUIT CHECK (KING CAB)
## POWER WINDOW MAIN SWITCH

### POWER WINDOW MAIN SWITCH : Description

INFOID:0000000001689381

- BCM supplies power.
- It operates each power window motor via corresponding power window switch and makes window move up/down when main power window and door lock/unlock switch is operated.

### POWER WINDOW MAIN SWITCH : Component Function Check

INFOID:0000000001689382

Main Power Window And Door Lock/Unlock Switch

1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH FUNCTION

Does power window motor operate with main power window and door lock/unlock switch operation?

Is the inspection result normal?

YES >> Main power window and door lock/unlock switch power supply and ground circuit are OK.
NO >> Refer to PWC-20, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

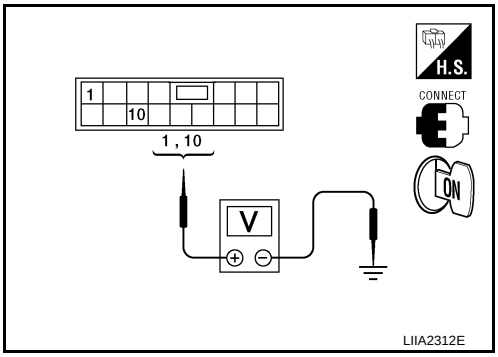
### POWER WINDOW MAIN SWITCH : Diagnosis Procedure

INFOID:0000000001689383

Main Power Window And Door Lock/Unlock Switch Power Supply Circuit Check

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connector and ground.



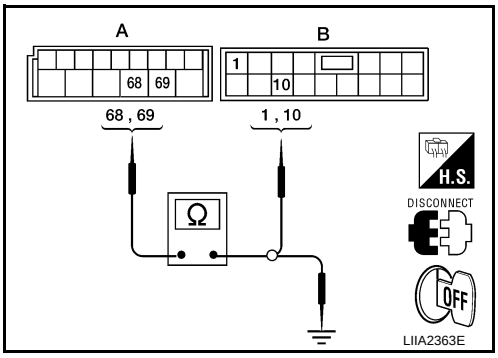

| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Main power window and door lock/unlock switch connector | Terminal | | |
| D7 | 1 | Ground | Battery voltage |
| | 10 | | |

Is the measurement value within the specification?

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

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and main power window and door lock/unlock switch.
3. Check continuity between BCM connector (A) and main power window and door lock/unlock switch connector (B).




| BCM connector | Terminal | Main power window and door lock/unlock switch connector | Terminal | Continuity |
|---|---|---|---|---|
| M20 (A) | 68 | D7 (B) | 10 | Yes |
| | 69 | | 1 | |

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

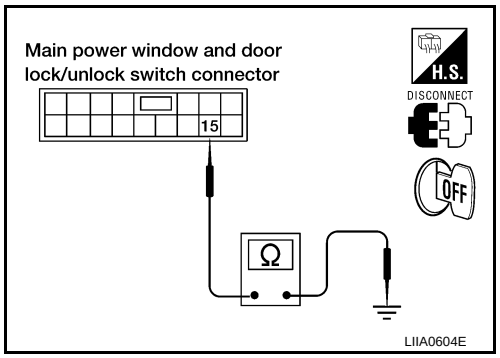
| BCM connector | Terminal | | Continuity |
|---|---|---|---|
| M20 (A) | 68 | Ground | No |
| | 69 | | |

Is the inspection result normal?

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

## 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch.
3. Check continuity between main power window and door lock/unlock switch connector and ground.



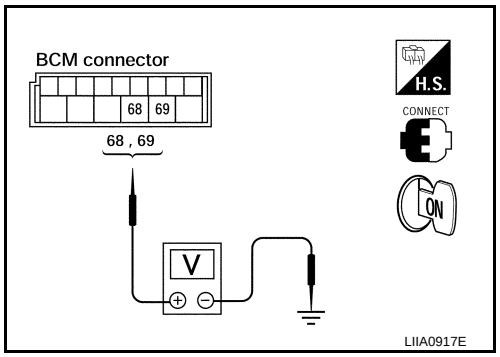

| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 | 15 | | Yes |

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".
NO >> Repair or replace harness.

## 4. CHECK BCM OUTPUT SIGNAL

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




| Terminals | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| BCM connector | Terminal | | |
| M20 | 68 | Ground | Battery voltage |
| | 69 | | |

Is the measurement value within the specification?

YES >> GO TO 5
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation".

## 5. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Check main power window and door lock/unlock switch.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".

# FRONT POWER WINDOW SWITCH

## FRONT POWER WINDOW SWITCH : Description

INFOID:0000000001689385

- BCM supplies power.
- Front power window motor RH will be operated if power window and door lock/unlock switch RH is operated.

## FRONT POWER WINDOW SWITCH : Component Function Check

INFOID:0000000001689386

Power Window And Door Lock/Unlock Switch RH

### 1. CHECK FRONT POWER WINDOW MOTOR RH FUNCTION

Does front power window motor RH operate with power window and door lock/unlock switch RH operation?

Is the inspection result normal?

YES >> Power window and door lock/unlock switch RH power supply and ground circuit are OK.
NO >> Refer to PWC-22, "FRONT POWER WINDOW SWITCH : Diagnosis Procedure".

## FRONT POWER WINDOW SWITCH : Diagnosis Procedure

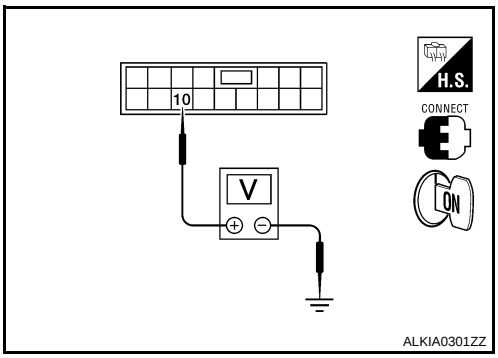
INFOID:0000000001689387

### Power Window And Door Lock/Unlock Switch RH Power Supply Circuit Check

### 1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between power window and door lock/unlock switch RH connector and ground.

| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Power window and door lock/unlock switch RH connector | Terminal | | |
| D105 | 10 | Ground | Battery voltage |



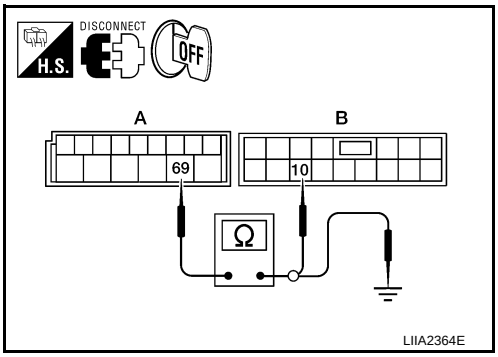

Is the measurement value within the specification?

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

### 2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and power window and door lock/unlock switch RH.
3. Check continuity between BCM connector (A) and power window and door lock/unlock switch RH connector (B).

| BCM connector | Terminal | Power window and door lock/unlock switch RH connector | Terminal | Continuity |
|---|---|---|---|---|
| M20 (A) | 69 | D105 (B) | 10 | Yes |




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

| BCM connector | Terminal | Ground | Continuity |
|---|---|---|---|
| M20 (A) | 69 | | No |

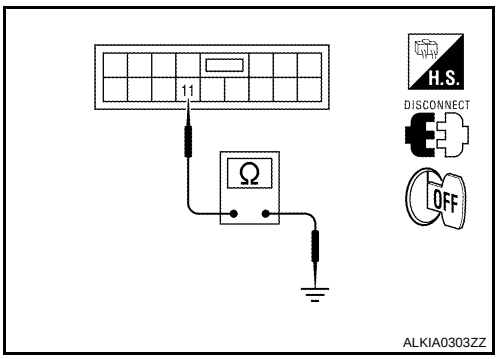
Is the inspection result normal?

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

### 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector and ground.

| Power window and door lock/unlock switch RH | Terminal | Ground | Continuity |
|---|---|---|---|
| D105 | 11 | | Yes |

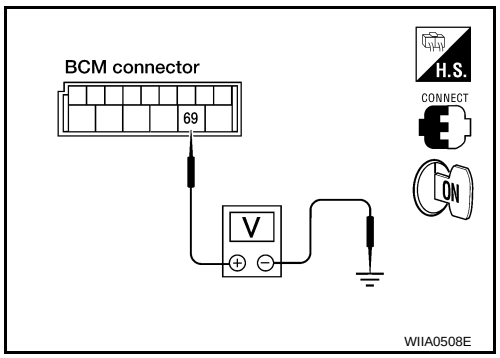



Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".
NO >> Repair or replace harness.

## 4. CHECK BCM OUTPUT SIGNAL

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




| Terminals | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (-) | |
| BCM connector | Terminal | | |
| M20 | 69 | Ground | Battery voltage |

Is the measurement value within the specification?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".

NO >> Replace BCM. Refer to BCS-50, "Removal and Installation".

# POWER WINDOW MOTOR
## DRIVER SIDE

### DRIVER SIDE : Description

INFOID:0000000001675479

Door glass moves UP/DOWN by receiving the signal from power window main switch.

### DRIVER SIDE : Component Function Check

INFOID:0000000001675480

#### 1. CHECK POWER WINDOW MOTOR CIRCUIT

Does front power window motor LH operate with operating main power window and door lock/unlock switch?

Is the inspection result normal?

YES >> Front power window motor LH is OK.
NO >> Refer to PWC-24, "DRIVER SIDE : Diagnosis Procedure".

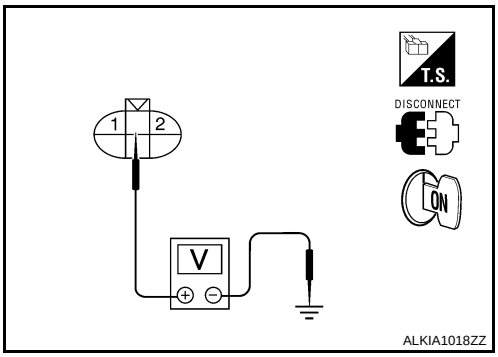
### DRIVER SIDE : Diagnosis Procedure

INFOID:0000000001675481

Front Power Window Motor LH Circuit Check

#### 1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL

1. Disconnect front power window motor LH.
2. Turn ignition switch ON.
3. Check voltage between front power window motor LH connector and ground.



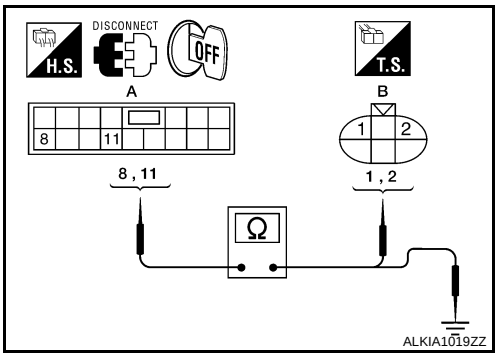

| Terminal | | | Main power window and door lock/unlock switch condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Power window motor LH connector | Terminal | | | |
| D9 | 2 | Ground | UP | Battery voltage |
| | | | DOWN | 0 |
| | 1 | | UP | 0 |
| | | | DOWN | Battery voltage |

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".

#### 2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and front power window motor LH.
3. Check continuity between main power window and door lock/unlock switch connector (A) and front power window motor connector LH (B).




| Main power window and door lock/unlock switch connector | Terminal | Front power window motor LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 8 | D9 (B) | 2 | Yes |
| | 11 | | 1 | |

4. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 (A) | 8 | | No |
| | 11 | | |

Is the inspection result normal?

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

## 3. CHECK POWER WINDOW MOTOR

Check front power window motor LH.
Refer to PWC-25, "DRIVER SIDE : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace power window motor LH. Refer to GW-18, "Removal and Installation".

# DRIVER SIDE : Component Inspection

INFOID:0000000001675482

## COMPONENT INSPECTION

### 1. CHECK FRONT POWER WINDOW MOTOR LH

Does motor operate by connecting the battery voltage directly to power window motor?

| Terminal | | Motor condition |
|---|---|---|
| (+) | (–) | |
| 1 | 2 | DOWN |
| 2 | 1 | UP |

Is the inspection result normal?

YES >> Front power window motor LH is OK.
NO >> Replace front power window motor LH. Refer to GW-18, "Removal and Installation".

# PASSENGER SIDE

# PASSENGER SIDE : Description

INFOID:0000000001675484

Door glass moves UP/DOWN by receiving the signal from main power window and door lock/unlock switch or power window and door lock/unlock switch RH.

# PASSENGER SIDE : Component Function Check

INFOID:0000000001675485

### 1. CHECK POWER WINDOW MOTOR CIRCIUT

Does power window motor operate with operating main power window and door lock/unlock switch or power window and door lock/unlock switch RH?

Is the inspection result normal?

YES >> Front power window motor RH is OK.
NO >> Refer to PWC-25, "PASSENGER SIDE : Diagnosis Procedure".

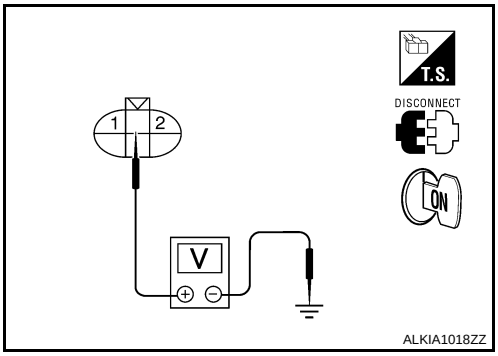
# PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000001675486

## Front Power Window Motor RH Circuit Check

### 1. CHECK FRONT POWER WINDOW SWITCH RH OUTPUT SIGNAL

1. Disconnect front power window motor RH.
2. Turn ignition switch ON.
3. Check voltage between front power window motor RH connector and ground.



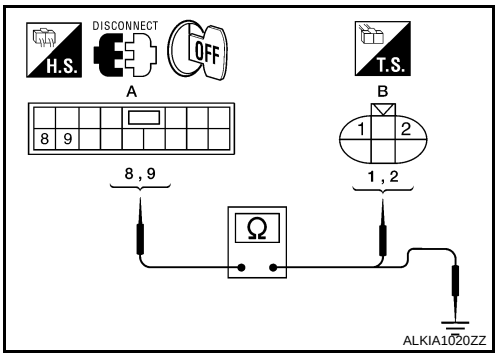

| Terminal | | | Front power window motor RH condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Front power window motor RH connector | Terminal | | | |
| D104 | 2 | Ground | UP | Battery voltage |
| | | | DOWN | 0 |
| | 1 | | UP | 0 |
| | | | DOWN | Battery voltage |

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".

## 2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).




| Power window and door lock/unlock switch RH connector | Terminal | Front power window motor RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D105 (A) | 8 | D104 (B) | 2 | Yes |
| | 9 | | 1 | |

4. Check continuity between power window and door lock/unlock switch RH connector (A) and ground.

| Power window and door lock/unlock switch RH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D105 (A) | 8 | | No |
| | 9 | | |

Is the inspection result normal?

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

## 3. CHECK FRONT POWER WINDOW MOTOR RH

Check front power window motor RH.
Refer to PWC-26, "PASSENGER SIDE : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace front power window motor RH. Refer to GW-18, "Removal and Installation".

# PASSENGER SIDE : Component Inspection

INFOID:0000000001675487

## COMPONENT INSPECTION

### 1. CHECK FRONT POWER WINDOW MOTOR RH

Does motor operate by connecting the battery voltage directly to front power window motor RH?

| Terminal | | Motor condition |
|---|---|---|
| (+) | (–) | |
| 1 | 2 | DOWN |
| 2 | 1 | UP |

Is the inspection result normal?

YES >> Front power window motor RH is OK.
NO >> Replace front power window motor RH. Refer to GW-18, "Removal and Installation".

# REAR LH

## REAR LH : Description

INFOID:0000000001675489

Door glass moves UP/DOWN by receiving the signal from power window main switch or rear power window switch LH.

## REAR LH : Component Function Check

INFOID:0000000001675490

### 1. CHECK REAR POWER WINDOW MOTOR LH CIRCUIT

Does rear power window motor LH operate with main power window and door lock/unlock switch or rear power window switch LH?

Is the inspection result normal?

YES >> Rear power window motor LH is OK.
NO >> Refer to PWC-27, "REAR LH : Diagnosis Procedure"

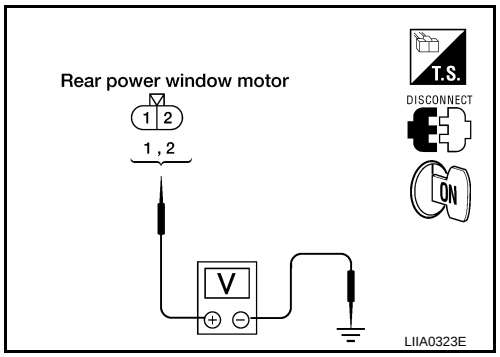
## REAR LH : Diagnosis Procedure

INFOID:0000000001675491

Power Window Motor Circuit Check

### 1. CHECK REAR POWER WINDOW SWITCH OUTPUT SIGNAL

1. Disconnect rear power window motor LH.
2. Turn ignition switch ON.
3. Check voltage between rear power window motor LH connector and ground.



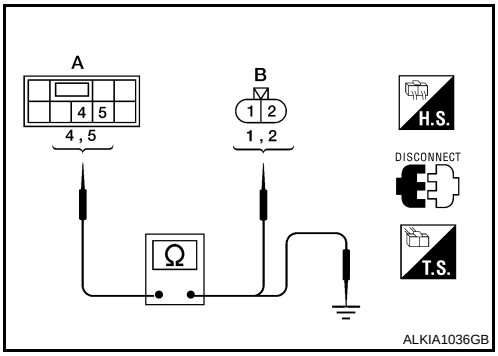

| Terminal | | | Window condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Rear power window motor LH connector | Terminal | | | |
| D204 | 1 | Ground | UP | Battery voltage |
| | | | DOWN | 0 |
| | 2 | | UP | 0 |
| | | | DOWN | Battery voltage |

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Check rear power window switch LH. Refer to PWC-17, "REAR POWER WINDOW SWITCH : Component Function Check".

### 2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect rear power window switch LH.
3. Check continuity between rear power window switch LH connector (A) and rear power window motor LH connector (B).




| Rear power window switch LH connector | Terminal | Rear power window motor LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D203 (A) | 5 | D204 (B) | 2 | Yes |
| | 4 | | 1 | |

4. Check continuity between rear power window switch LH connector (A) and ground.

| Rear power window switch LH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D203 (A) | 5 | | No |
| | 4 | | |

Is the inspection result normal?

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

## 3. CHECK REAR POWER WINDOW MOTOR LH

Check rear power window motor LH.
Refer to PWC-28, "REAR LH : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace rear power window motor LH. Refer to GW-22, "Rear Door Glass Regulator Assembly".

# REAR LH : Component Inspection

INFOID:0000000001675492

## COMPONENT INSPECTION

### 1. CHECK REAR POWER WINDOW MOTOR LH

Does motor operate by connecting the battery voltage directly to rear power window motor LH?

| Terminal | | Motor condition |
|---|---|---|
| (+) | (–) | |
| 2 | 1 | DOWN |
| 1 | 2 | UP |

Is the inspection result normal?

YES >> Rear power window motor LH is OK.
NO >> Replace rear power window motor LH. Refer to GW-22, "Rear Door Glass Regulator Assembly".

# REAR RH

# REAR RH : Description

INFOID:0000000001675493

Door glass moves UP/DOWN by receiving the signal from main power window and door lock/unlock switch or rear power window switch RH.

# REAR RH : Component Function Check

INFOID:0000000001675494

### 1. CHECK REAR POWER WINDOW MOTOR RH CIRCUIT

Does rear power window motor RH operate with operating main power window and door lock/unlock switch or rear power window switch RH?

Is the inspection result normal?

YES >> Rear power window motor RH is OK.
NO >> Refer to PWC-29, "REAR RH : Diagnosis Procedure".

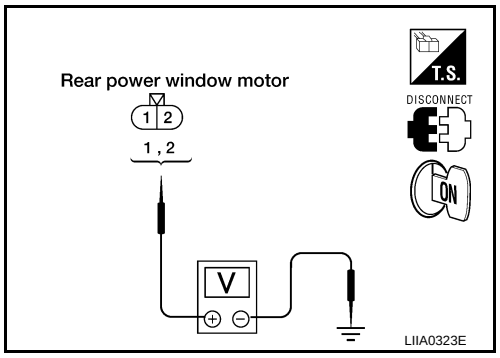
## REAR RH : Diagnosis Procedure

INFOID:0000000001675495

### Rear Power Window Motor RH Circuit Check

### 1. CHECK REAR POWER WINDOW SWITCH RH OUTPUT SIGNAL

1. Disconnect rear power window motor RH.
2. Turn ignition switch ON.
3. Check voltage between rear power window motor RH connector and ground.



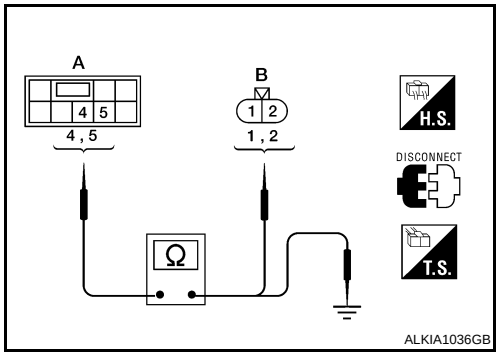

| Terminal | | | Rear power window switch RH condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Rear power window motor RH connector | Terminal | | | |
| D304 | 1 | Ground | UP | Battery voltage |
| | | | DOWN | 0 |
| | 2 | | UP | 0 |
| | | | DOWN | Battery voltage |

Is the measurement value within the specification?

YES >> GO TO 2
NO >> Check rear power window switch RH. Refer to PWC-17, "REAR POWER WINDOW SWITCH : Component Function Check".

### 2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect rear power window switch RH.
3. Check continuity between rear power window switch RH connector (A) and rear power window motor RH connector (B).




| Rear power window switch RH connector | Terminal | Rear power window motor RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D303 (A) | 5 | D304 (B) | 2 | Yes |
| | 4 | | 1 | |

4. Check continuity between rear power window switch RH connector (A) and ground.

| Rear power window switch RH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D303 (A) | 5 | | No |
| | 4 | | |

Is the inspection result normal?

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

### 3. CHECK REAR POWER WINDOW MOTOR RH

Check rear power window motor RH.
Refer to PWC-30, "REAR RH : Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace rear power window motor RH. Refer to GW-22, "Rear Door Glass Regulator Assembly".

## REAR RH : Component Inspection

INFOID:0000000001675496

### COMPONENT INSPECTION

### 1.CHECK REAR POWER WINDOW MOTOR RH

Does motor operate by connecting the battery voltage directly to rear power window motor RH?

| Terminal | | Motor condition |
|---|---|---|
| (+) | (–) | |
| 2 | 1 | DOWN |
| 1 | 2 | UP |

Is the inspection result normal?

YES >> Rear power window motor RH is OK.
NO >> Replace rear power window motor RH. Refer to GW-22, "Rear Door Glass Regulator Assembly".

# ENCODER CIRCUIT CHECK FRONT LH (CREW CAB)
## DRIVER SIDE

### DRIVER SIDE : Description

INFOID:0000000001675497

Detects condition of the front power window motor LH operation and transmits to main power window and door lock/unlock switch as pulse signal.

### DRIVER SIDE : Component Function Check

INFOID:0000000001675498

#### 1. CHECK ENCODER OPERATION

Does front door glass LH perform AUTO open/close operation normally when operating main power window and door lock/unlock switch?

Is the inspection result normal?

YES >> Encoder operation is OK.
NO >> Refer to PWC-31, "DRIVER SIDE : Diagnosis Procedure"

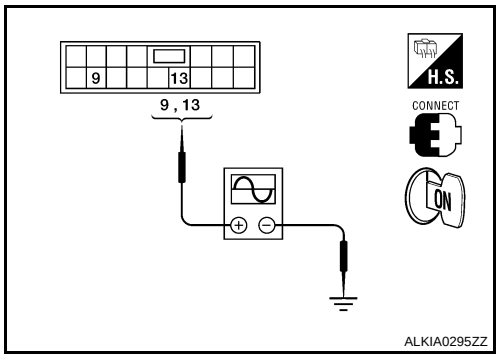
### DRIVER SIDE : Diagnosis Procedure

INFOID:0000000001675499

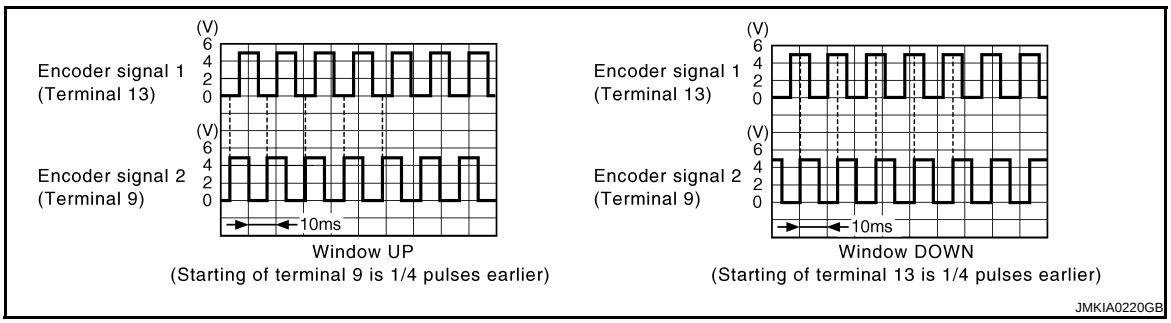
Encoder Circuit Check

#### 1. CHECK ENCODER OPERATION

1. Disconnect front power window motor LH.
2. Turn ignition switch ON.
3. Check signal between main power window and door lock/unlock switch connector and ground with oscilloscope.




| Terminals | | | Signal (Reference value) |
|---|---|---|---|
| (+) | | (–) | |
| Main power window and door lock/unlock switch connector | Terminal | | |
| D7 | 9 | Ground | Refer to following signal |
| | 13 | | |



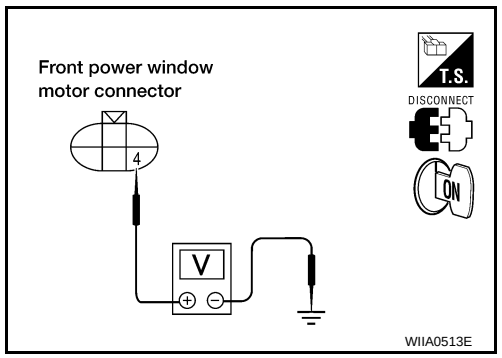

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 2

#### 2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

1. Disconnect front power window motor LH.

2. Turn ignition switch ON.
3. Check voltage between front power window motor LH connector and ground.



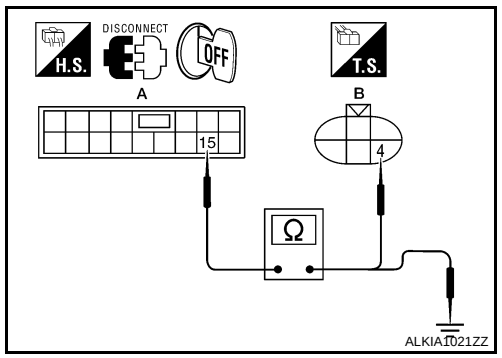

| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Front power window motor LH connector | Terminal | | |
| D9 | 4 | Ground | 10 |

Is the measurement value within the specification?

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

## 3. CHECK HARNESS CONTINUITY 1

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch.
3. Check continuity between main power window and door lock/unlock switch connector (A) and front power window motor LH connector (B).




| Main power window and door lock/unlock switch connector | Terminal | Front power window motor LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 15 | D9 (B) | 4 | Yes |

4. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

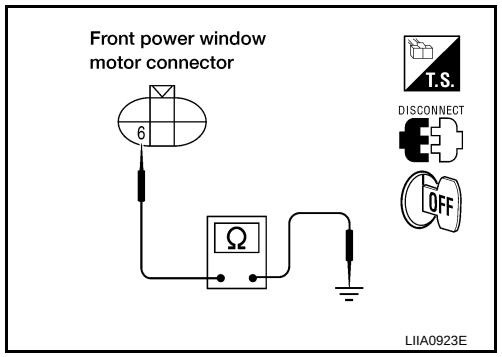
| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 (A) | 15 | | No |

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".
NO >> Repair or replace harness.

## 4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between front power window motor LH connector and ground.



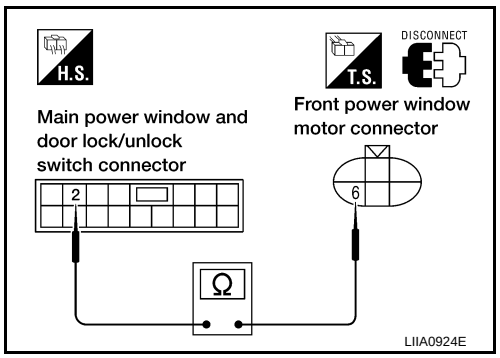

| Front power window motor LH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D9 | 6 | | Yes |

Is the inspection result normal?

YES >> GO TO 6
NO >> GO TO 5

## 5. CHECK HARNESS CONTINUITY 2

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between main power window and door lock/unlock switch connector and front power window motor LH connector.



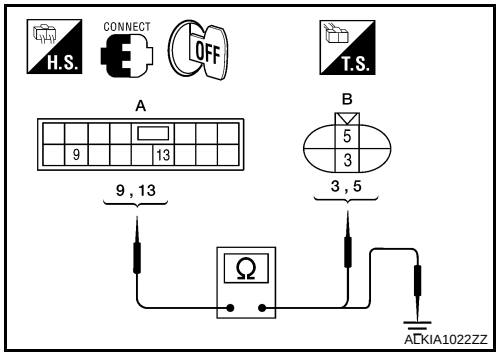

| Main power window and door lock/unlock switch connector | Terminal | Front power window motor LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 | 2 | D9 | 6 | Yes |

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".
NO >> Repair or replace harness.

## 6. CHECK HARNESS CONTINUITY 3

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between main power window and door lock/unlock switch connector (A) and front power window motor LH connector (B).




| Main power window and door lock/unlock switch connector | Terminal | Front power window motor LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 9 | D9 (B) | 5 | Yes |
| | 13 | | 3 | |

3. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 (A) | 9 | | No |
| | 13 | | |

Is the inspection result normal?

YES >> Replace front power window motor LH. Refer to GW-18, "Removal and Installation".
NO >> Repair or replace harness.

# PASSENGER SIDE

## PASSENGER SIDE : Description

INFOID:0000000001675500

Detects condition of the front power window motor RH operation and transmits to power window and door lock/unlock switch RH as pulse signal.

## PASSENGER SIDE : Component Function Check

INFOID:0000000001675501

## 1. CHECK ENCODER OPERATION

Does front door glass RH perform AUTO open/close operation normally when operating power window and door lock/unlock switch RH?

Is the inspection result normal?

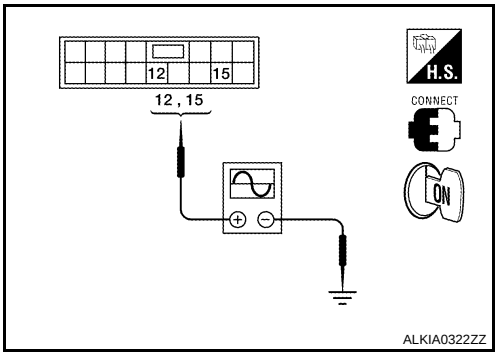
YES >> Encoder operation is OK.
NO >> Refer to PWC-33, "PASSENGER SIDE : Diagnosis Procedure".

## PASSENGER SIDE : Diagnosis Procedure

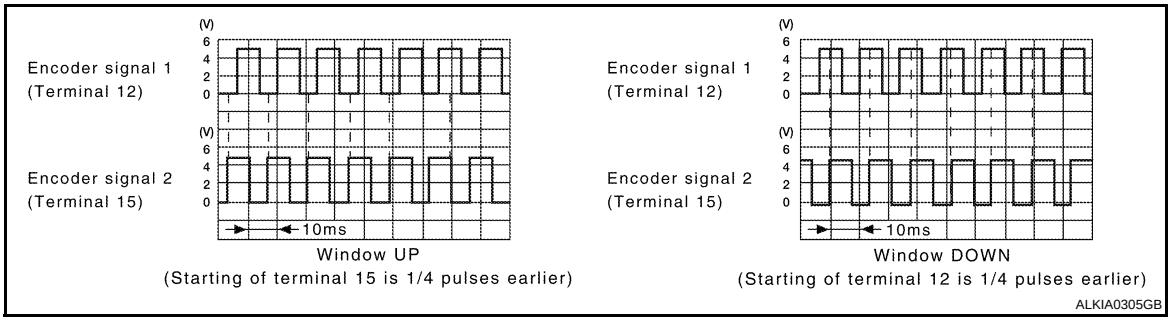
INFOID:0000000001675502

## 1. CHECK ENCODER SIGNAL

1. Disconnect front power window motor RH.
2. Turn ignition switch ON.
3. Check signal between power window and door lock/unlock switch RH connector and ground with oscilloscope.




| Terminals | | | Signal (Reference value) |
|---|---|---|---|
| (+) | | (–) | |
| Power window and door lock/unlock switch RH connector | Terminal | | |
| D105 | 12 | Ground | Refer to following signal |
| | 15 | | |

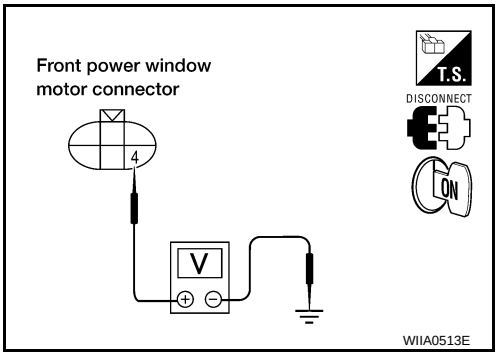



Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 2

## 2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

1. Disconnect front power windo motor RH.
2. Turn ignition switch ON.
3. Check voltage between front power window motor RH connector and ground.



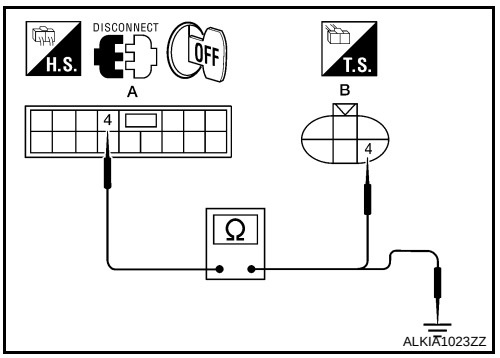

| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Front power window motor RH connector | Terminal | | |
| D105 | 4 | Ground | 10 |

Is the measurement value within the specification?

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

## 3. CHECK HARNESS CONTINUITY 1

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).




| Power window and door lock/unlock switch RH connector | Terminal | Front power window motor RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D105 (A) | 4 | D104 (B) | 4 | Yes |

4. Check continuity between power window and door lock/unlock switch RH connector (A) and ground.

| Power window and door lock/unlock switch RH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D105 (A) | 4 | | No |

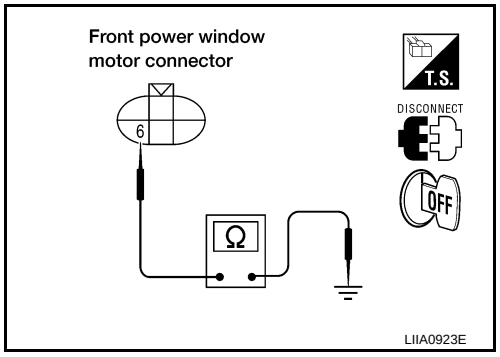
Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".

NO >> Repair or replace harness.

## 4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between front power window motor RH connector and ground.




| Front power window motor RH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D104 | 6 | | Yes |

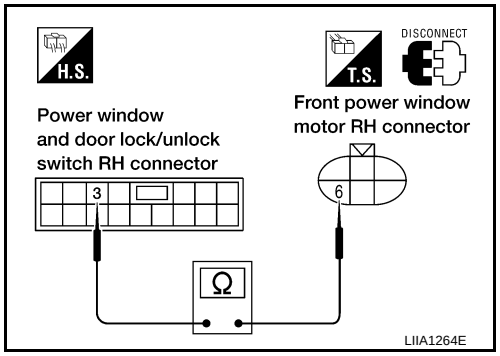
Is the inspection result normal?

YES >> GO TO 6

NO >> GO TO 5

## 5. CHECK HARNESS CONTINUITY 2

1. Disconnect power window and door lock/unlock switch RH.
2. Check continuity between power window and door lock/unlock switch RH connector and front power window motor RH connector.




| Power window and door lock/unlock switch RH connector | Terminal | Front power window motor RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D105 | 3 | D104 | 6 | Yes |

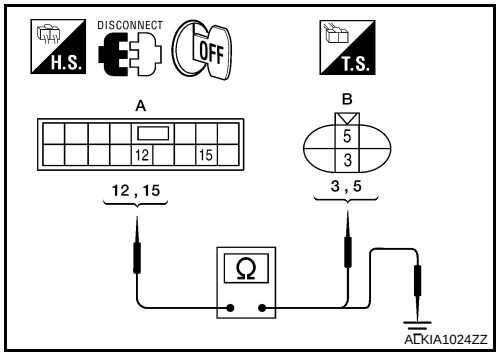
Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".

NO >> Repair or replace harness.

## 6. CHECK HARNESS CONTINUITY 3

1. Disconnect power window and door lock/unlock switch RH.
2. Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).




| Power window and door lock/unlock switch RH connector | Terminal | Front power window motor RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D105 (A) | 12 | D104 (B) | 3 | Yes |
| | 15 | | 5 | |

3. Check continuity between power window and door lock/unlock switch RH connector (A) and ground.

| Power window and door lock/unlock switch RH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D105 (A) | 12 | | No |
| | 15 | | |

Is the inspection result normal?

YES >> Replace front power window motor RH. Refer to GW-18, "Removal and Installation".
NO >> Repair or replace harness.

# ENCODER CIRCUIT CHECK FRONT LH (KING CAB)
## DRIVER SIDE

### DRIVER SIDE : Description

INFOID:0000000001689388

Detects condition of the front power window motor LH operation and transmits to main power window and door lock/unlock switch as pulse signal.

### DRIVER SIDE : Component Function Check

INFOID:0000000001689389

#### 1. CHECK ENCODER OPERATION

Does front door glass LH perform AUTO open/close operation normally when operating main power window and door lock/unlock switch?

Is the inspection result normal?

YES >> Encoder operation is OK.
NO >> Refer to PWC-37, "DRIVER SIDE : Diagnosis Procedure"

### DRIVER SIDE : Diagnosis Procedure

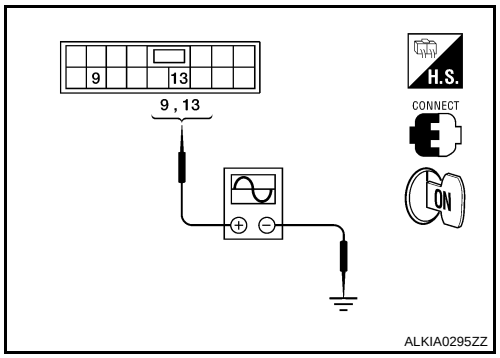
INFOID:0000000001689390

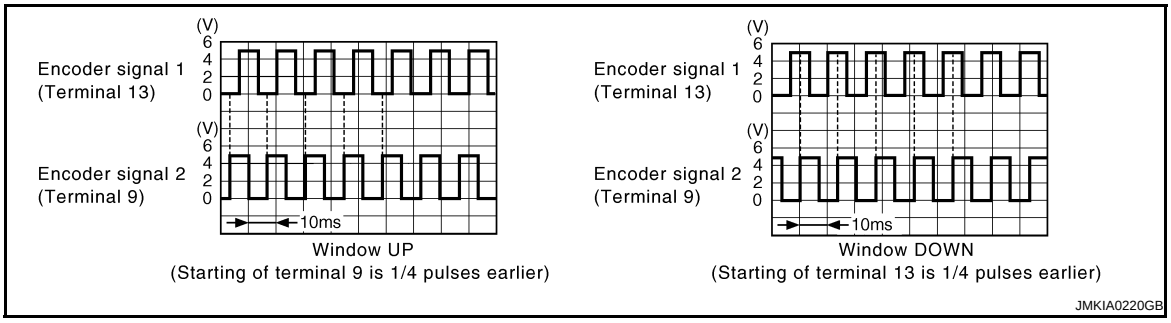
Encoder Circuit Check

#### 1. CHECK ENCODER OPERATION

1. Turn ignition switch ON.
2. Check signal between main power window and door lock/unlock switch connector and ground with oscilloscope.

| Terminals | | | Signal (Reference value) |
|---|---|---|---|
| (+) | | (–) | |
| Main power window and door lock/unlock switch connector | Terminal | | |
| D7 | 9 | Ground | Refer to following signal |
| | 13 | | |



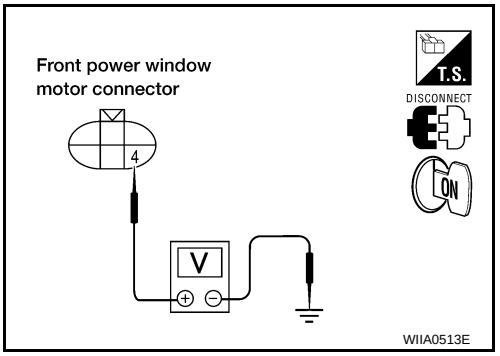




Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 2

#### 2. CHECK FRONT POWER WINDOW MOTOR LH POWER SUPPLY

1. Disconnect front power window motor LH.
2. Turn ignition switch ON.
3. Check voltage between front power window motor LH connector and ground.



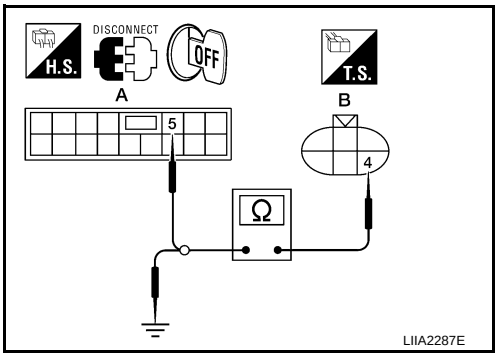

| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Front power window motor LH connector | Terminal | | |
| D9 | 4 | Ground | 10 |

Is the measurement value within the specification?

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

## 3. CHECK HARNESS CONTINUITY 1

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch.
3. Check continuity between main power window and door lock/unlock switch connector (A) and front power window motor LH connector (B).




| Main power window and door lock/unlock switch connector | Terminal | Front power window motor LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 5 | D9 (B) | 4 | Yes |

4. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

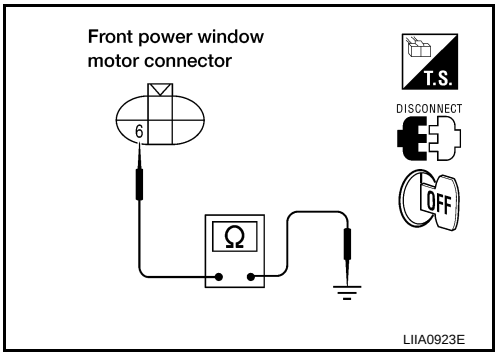
| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D9 (B) | 4 | | No |

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".
NO >> Repair or replace harness.

## 4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between front power window motor LH connector and ground.



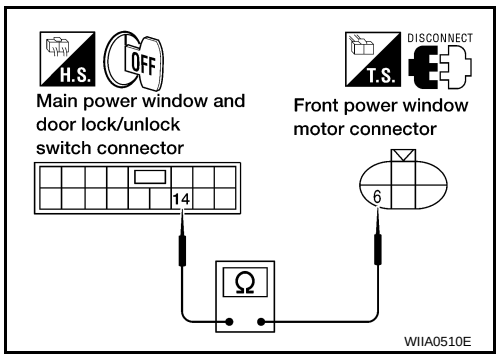

| Front power window motor LH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D9 | 6 | | Yes |

Is the inspection result normal?

YES >> GO TO 6
NO >> GO TO 5

## 5. CHECK HARNESS CONTINUITY 2

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between main power window and door lock/unlock switch connector and front power window motor LH connector.



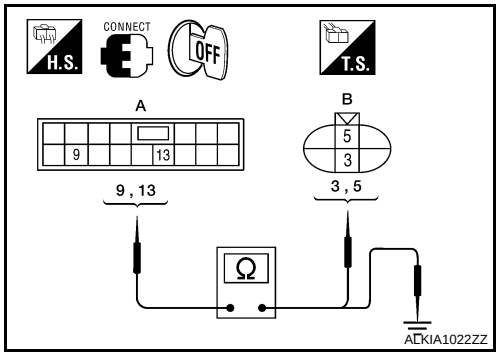

| Main power window and door lock/unlock switch connector | Terminal | Front power window motor LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 | 14 | D9 | 6 | Yes |

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".
NO >> Repair or replace harness.

## 6. CHECK HARNESS CONTINUITY 3

1. Disconnect main power window and door lock/unlock switch.
2. Check continuity between main power window and door lock/unlock switch connector (A) and front power window motor LH connector (B).




| Main power window and door lock/unlock switch connector | Terminal | Front power window motor LH connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 9 | D9 (B) | 5 | Yes |
| | 13 | | 3 | |

3. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 (A) | 9 | | No |
| | 13 | | |

Is the inspection result normal?

YES >> Replace front power window motor LH. Refer to GW-18, "Removal and Installation".
NO >> Repair or replace harness.

# PASSENGER SIDE

## PASSENGER SIDE : Description

INFOID:0000000001689391

Detects condition of the front power window motor RH operation and transmits to power window and door lock/unlock switch RH as pulse signal.

## PASSENGER SIDE : Component Function Check

INFOID:0000000001689392

### 1. CHECK ENCODER OPERATION

Does front door glass RH perform AUTO open/close operation normally when operating power window and door lock/unlock switch RH?

Is the inspection result normal?

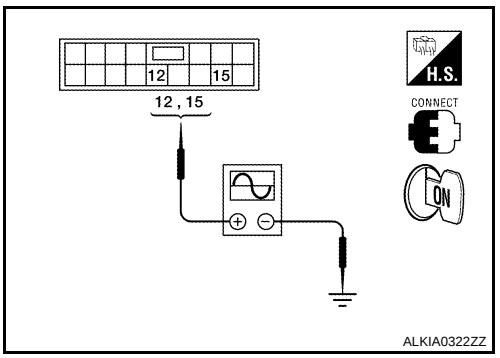
YES >> Encoder operation is OK.
NO >> Refer to PWC-39, "PASSENGER SIDE : Diagnosis Procedure".

## PASSENGER SIDE : Diagnosis Procedure

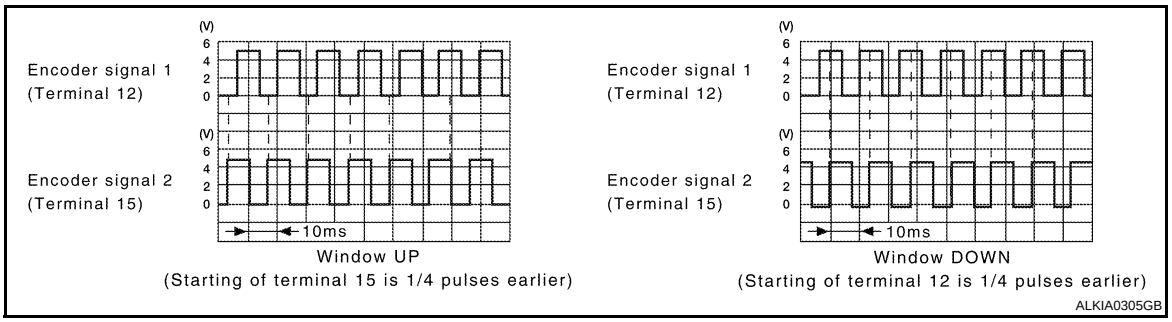
INFOID:0000000001689393

### 1. CHECK ENCODER SIGNAL

1. Turn ignition switch ON.
2. Check signal between power window and door lock/unlock switch RH connector and ground with oscilloscope.




| Terminals | | | Signal (Reference value) |
|---|---|---|---|
| (+) | | (–) | |
| Power window and door lock/unlock switch RH connector | Terminal | | |
| D105 | 12 | Ground | Refer to following signal |
| | 15 | | |

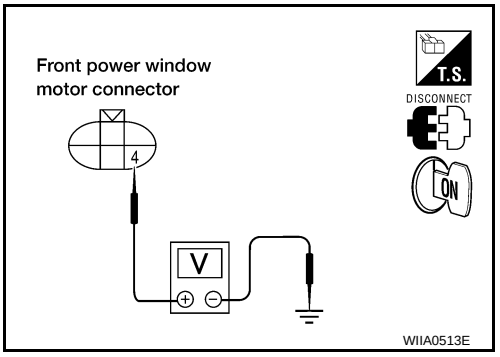



Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> GO TO 2

## 2. CHECK FRONT POWER WINDOW MOTOR RH POWER SUPPLY

1. Disconnect front power window motor RH.
2. Turn ignition switch ON.
3. Check voltage between front power window motor RH connector and ground.



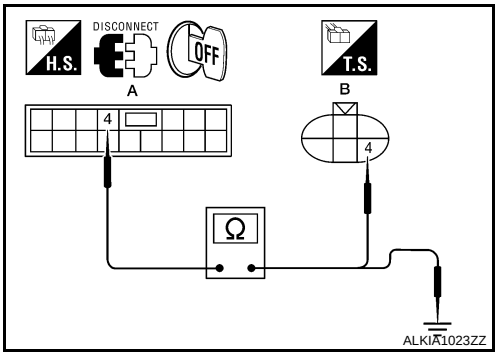

| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| Front power window motor RH connector | Terminal | | |
| D105 | 4 | Ground | 10 |

Is the measurement value within the specification?

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

## 3. CHECK HARNESS CONTINUITY 1

1. Turn ignition switch OFF.
2. Disconnect power window and door lock/unlock switch RH.
3. Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).




| Power window and door lock/unlock switch RH connector | Terminal | Front power window motor RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D105 (A) | 4 | D104 (B) | 4 | Yes |

4. Check continuity between power window and door lock/unlock switch RH connector (A) and ground.

| Power window and door lock/unlock switch RH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D105 (A) | 4 | | No |

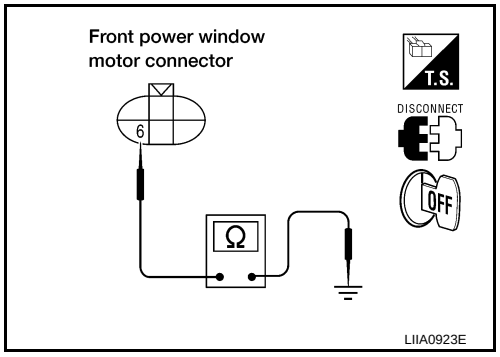
Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".

NO >> Repair or replace harness.

## 4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between front power window motor RH connector and ground.




| Front power window motor RH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D104 | 6 | | Yes |

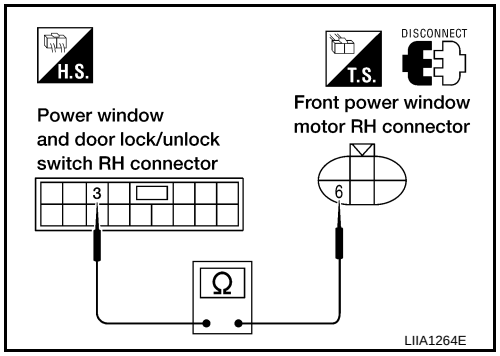
Is the inspection result normal?

YES >> GO TO 6

NO >> GO TO 5

## 5. CHECK HARNESS CONTINUITY 2

1. Disconnect power window and door lock/unlock switch RH.
2. Check continuity between power window and door lock/unlock switch RH connector and front power window motor RH connector.




| Power window and door lock/unlock switch RH connector | Terminal | Front power window motor RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D105 | 3 | D104 | 6 | Yes |

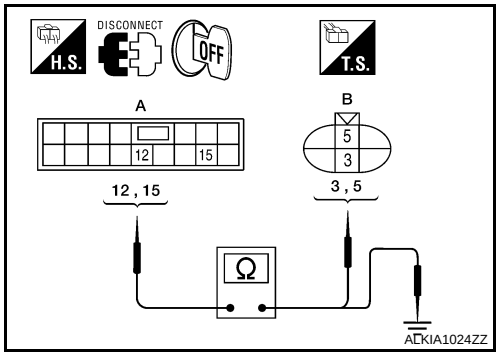
Is the inspection result normal?

YES >> Replace power window and door lock/unlock switch RH. Refer to PWC-100, "Removal and Installation".

NO >> Repair or replace harness.

## 6. CHECK HARNESS CONTINUITY 3

1. Disconnect power window and door lock/unlock switch RH.
2. Check continuity between power window and door lock/unlock switch RH connector (A) and front power window motor RH connector (B).




| Power window and door lock/unlock switch RH connector | Terminal | Front power window motor RH connector | Terminal | Continuity |
|---|---|---|---|---|
| D105 (A) | 12 | D104 (B) | 3 | Yes |
| | 15 | | 5 | |

3. Check continuity between power window and door lock/unlock switch RH connector (A) and ground.

| Power window and door lock/unlock switch RH connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D105 (A) | 12 | | No |
| | 15 | | |

Is the inspection result normal?

YES >> Replace front power window motor RH. Refer to GW-18, "Removal and Installation".
NO >> Repair or replace harness.

# DOOR SWITCH

## Description

INFOID:0000000001675503

Detects door open/close condition and transmits the signal to BCM.

## Component Function Check

INFOID:0000000001675504

### 1. CHECK FRONT DOOR SWITCH INPUT SIGNAL

Check (“DOOR SW-DR” and “DOOR SW-AS”) in “DATA MONITOR” mode with CONSULT-III. Refer to PWC-10, "RETAINED PWR : CONSULT-III Function (BCM - RETAINED PWR)".

| Monitor item | Condition | |
|---|---|---|
| DOOR SW-DR | OPEN | : ON |
| | CLOSE | : OFF |
| DOOR SW-AS | OPEN | : ON |
| | CLOSE | : OFF |

Is the inspection result normal?

YES >> Front door switch circuit is OK.
NO >> Refer to PWC-43, "Diagnosis Procedure".

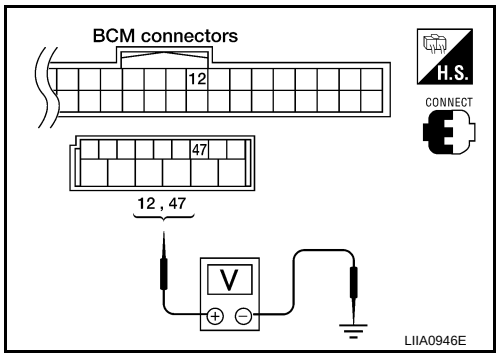
## Diagnosis Procedure

INFOID:0000000001675505

### 1. CHECK FRONT DOOR SWITCH

Check voltage between BCM connector and ground.

| Terminals (+) BCM connector | Terminals (+) Terminal | Terminals (–) | Door condition | | Voltage (V) (Approx.) |
|---|---|---|---|---|---|
| M18 | 12 | Ground | Front door RH | OPEN | 0 |
| | | | | CLOSE | Battery voltage |
| M19 | 47 | | Front door LH | OPEN | 0 |
| | | | | CLOSE | Battery voltage |




Is the measurement value within the specification?

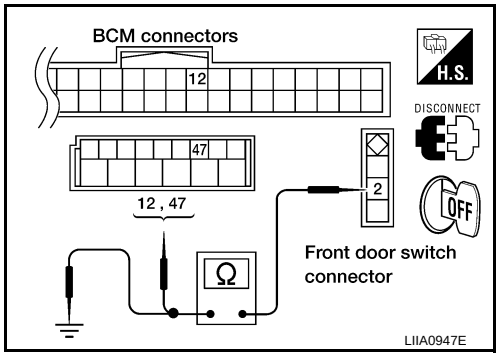
YES >> Replace BCM. Refer to BCS-50, "Removal and Installation".
NO >> GO TO 2

### 2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and front door switch.
3. Check continuity between BCM connector and front door switch connector.

| BCM connector | Terminal | Front door switch connector | Terminal | Continuity |
|---|---|---|---|---|
| M18 | 12 | RH: B108 | 2 | Yes |
| M19 | 47 | LH: B8 | | |

4. Check continuity between front door switch connector and ground.



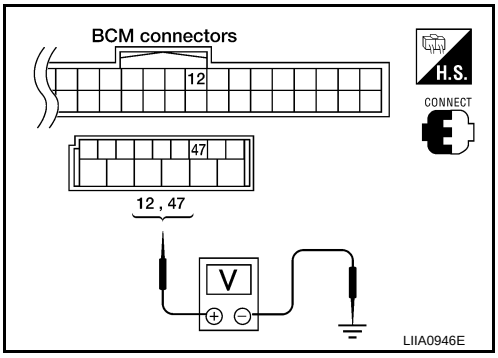
| Front door switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| B8 (LH) | 2 | | No |
| B108 (RH) | | | |

Is the inspection result normal?

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

## 3. CHECK BCM OUTPUT SIGNAL

1. Connect BCM connector.
2. Check voltage between BCM connector and ground.




| Terminal | | | Voltage (V) (Approx.) |
|---|---|---|---|
| (+) | | (–) | |
| BCM connector | Terminal | | |
| M18 | 12 | Ground | Battery voltage |
| M19 | 47 | | |

Is the measurement value within the specification?

YES >> GO TO 4
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation".

## 4. CHECK FRONT DOOR SWITCH

Check front door switch.
Refer to PWC-44, "Component Inspection".

Is the inspection result normal?

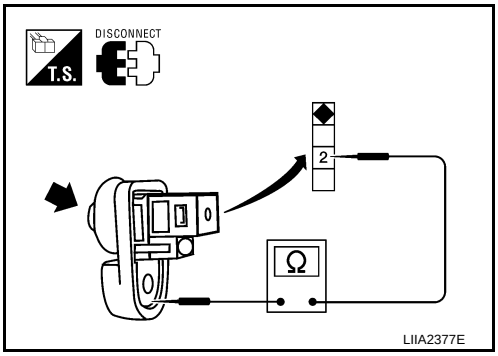
YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace front door switch.

# Component Inspection

INFOID:0000000001675506

## 1. CHECK FRONT DOOR SWITCH

Check front door switches.




| Terminal | | Door switch | Continuity |
|---|---|---|---|
| Door switches | | | |
| 2 | Ground part of door switch | Pressed | No |
| | | Released | Yes |

Is the inspection result normal?

YES >> Front door switch is OK.
NO >> Replace front door switch.

# FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (CREW CAB)

## Description

INFOID:0000000001675507

Main power window and door lock/unlock switch detects condition of the door key cylinder and transmits to BCM as the LOCK or UNLOCK signals.

## Component Function Check

INFOID:0000000001675508

### 1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

Check (“KEY CYL LK-SW”, “KEY CYL UN-SW”) in “DATA MONITOR” mode for “POWER DOOR LOCK SYSTEM” with CONSULT-III. Refer to DLK-15, "DOOR LOCK : CONSULT-III Function (BCM - DOOR LOCK)".

| Monitor item | Condition | |
|---|---|---|
| KEY CYL LK-SW | Lock | : ON |
| | Neutral / Unlock | : OFF |
| KEY CYL UN-SW | Unlock | : ON |
| | Neutral / Lock | : OFF |

Is the inspection result normal?

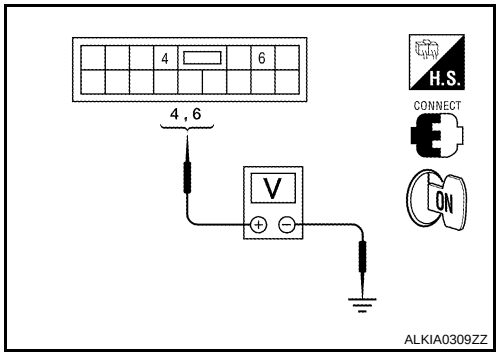
YES >> Key cylinder switch is OK.
NO >> Refer to PWC-45, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000001675509

### 1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connector and ground.



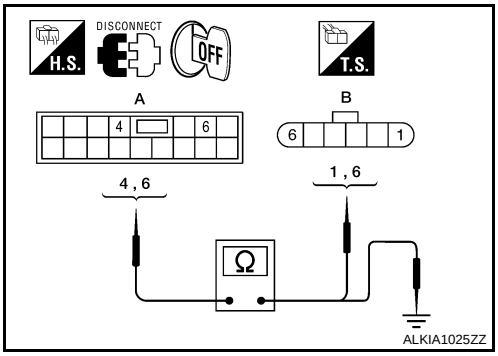

| Terminals | | | Key position | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Main power window and door lock/unlock switch connector | Terminal | | | |
| D7 | 4 | Ground | Lock | 0 |
| | | | Neutral/Unlock | 5 |
| | 6 | | Unlock | 0 |
| | | | Neutral/Lock | 5 |

Is the measurement value within the specification?

YES >> Replace main power window and door lock/unlock switch.
NO >> GO TO 2

### 2. CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and front door lock assembly LH (key cylinder switch).
3. Check continuity between main power window and door lock/unlock switch connector (A) and front door lock assembly LH (key cylinder switch) connector (B).




| Main power window and door lock/unlock switch connector | Terminal | Front door lock assembly LH (key cylinder switch) connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 4 | D14 (B) | 1 | Yes |
| | 6 | | 6 | |

4. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

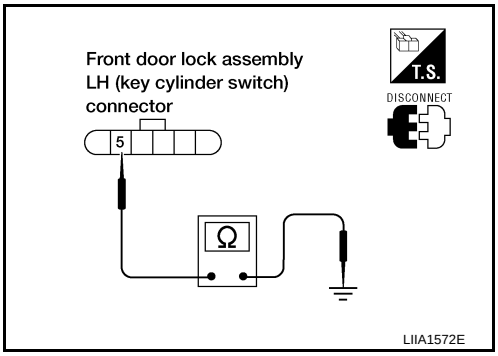
| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 (A) | 4 | | No |
| | 6 | | |

Is the inspection result normal?

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

## 3. CHECK DOOR KEY CYLINDER SWITCH GROUND CIRCUIT

Check continuity between front door lock assembly LH (key cylinder switch) connector and ground.




| Front door lock assembly LH (key cylinder switch) connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D14 | 5 | | Yes |

Is the inspection result normal?

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

## 4. CHECK DOOR KEY CYLINDER SWITCH

Check door key cylinder switch.
Refer to PWC-46, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace front door lock assembly LH (key cylinder switch).

# Component Inspection

INFOID:0000000001675510

## COMPONENT INSPECTION

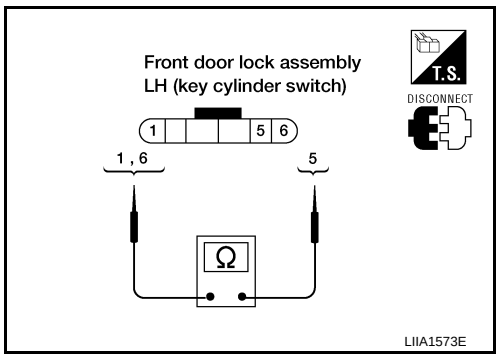
### 1. CHECK DOOR KEY CYLINDER SWITCH

# FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (CREW CAB)

< COMPONENT DIAGNOSIS >

Check front door lock assembly LH (key cylinder switch).

| Terminal | | Key position | Continuity |
|---|---|---|---|
| Front door lock assembly LH (key cylinder switch) connector | | | |
| 6 | 5 | Unlock | Yes |
| | | Neutral/Lock | No |
| 1 | | Lock | Yes |
| | | Neutral/Unlock | No |




Is the inspection result normal?

YES >> Key cylinder switch is OK.
NO >> Replace front door lock assembly LH (key cylinder switch).

# FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (KING CAB)

## Description

INFOID:0000000001689394

Main power window and door lock/unlock switch detects condition of the door key cylinder and transmits to BCM as the LOCK or UNLOCK signals.

## Component Function Check

INFOID:0000000001689395

### 1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

Check (“KEY CYL LK-SW”, “KEY CYL UN-SW”) in “DATA MONITOR” mode for “POWER DOOR LOCK SYSTEM” with CONSULT-III. Refer to DLK-15, "DOOR LOCK : CONSULT-III Function (BCM - DOOR LOCK)".

| Monitor item | Condition | |
|---|---|---|
| KEY CYL LK-SW | Lock | : ON |
| | Neutral / Unlock | : OFF |
| KEY CYL UN-SW | Unlock | : ON |
| | Neutral / Lock | : OFF |

Is the inspection result normal?

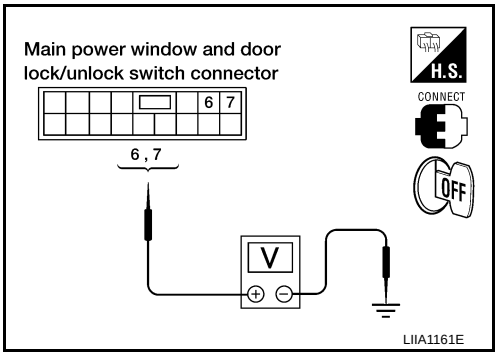
YES >> Key cylinder switch is OK.
NO >> Refer to PWC-48, "Diagnosis Procedure".

## Diagnosis Procedure

INFOID:0000000001689396

### 1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

1. Turn ignition switch ON.
2. Check voltage between main power window and door lock/unlock switch connector and ground.



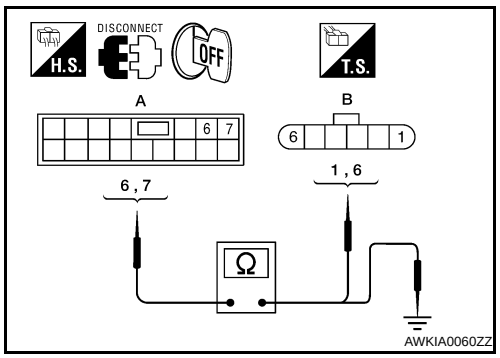

| Terminals | | | Key position | Voltage (V) (Approx.) |
|---|---|---|---|---|
| (+) | | (–) | | |
| Main power window and door lock/unlock switch connector | Terminal | | | |
| D7 | 6 | Ground | Lock | 0 |
| | | | Neutral/Unlock | 5 |
| | 7 | | Unlock | 0 |
| | | | Neutral/Lock | 5 |

Is the measurement value within the specification?

YES >> Replace main power window and door lock/unlock switch.
NO >> GO TO 2

### 2. CHECK DOOR KEY CYLINDER SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect main power window and door lock/unlock switch and front door lock assembly LH (key cylinder switch).
3. Check continuity between main power window and door lock/unlock switch connector (A) and front door lock assembly LH (key cylinder switch) connector (B).




| Main power window and door lock/unlock switch connector | Terminal | Front door lock assembly LH (key cylinder switch) connector | Terminal | Continuity |
|---|---|---|---|---|
| D7 (A) | 6 | D14 (B) | 1 | Yes |
| | 7 | | 5 | |

4. Check continuity between main power window and door lock/unlock switch connector (A) and ground.

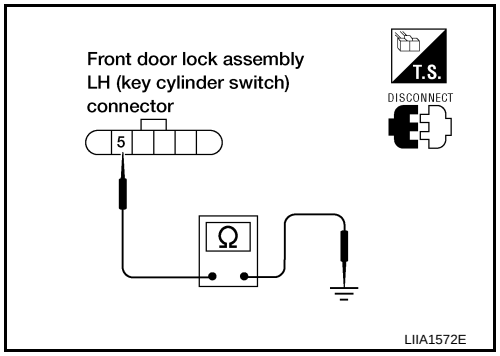
| Main power window and door lock/unlock switch connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D7 (A) | 6 | | No |
| | 7 | | |

Is the inspection result normal?

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

## 3. CHECK DOOR KEY CYLINDER SWITCH GROUND CIRCUIT

Check continuity between front door lock assembly LH (key cylinder switch) connector and ground.




| Front door lock assembly LH (key cylinder switch) connector | Terminal | Ground | Continuity |
|---|---|---|---|
| D14 | 5 | | Yes |

Is the inspection result normal?

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

## 4. CHECK DOOR KEY CYLINDER SWITCH

Check door key cylinder switch.
Refer to PWC-49, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace front door lock assembly LH (key cylinder switch).

# Component Inspection

INFOID:0000000001689397

## COMPONENT INSPECTION

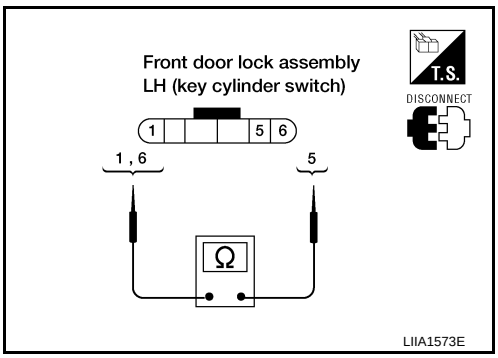
### 1. CHECK DOOR KEY CYLINDER SWITCH

# FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH) CHECK (KING CAB)

< COMPONENT DIAGNOSIS >

Check front door lock assembly LH (key cylinder switch).

| Terminal | | Key position | Continuity |
|---|---|---|---|
| Front door lock assembly LH (key cylinder switch) connector | | | |
| 6 | 5 | Unlock | Yes |
| | | Neutral/Lock | No |
| 1 | | Lock | Yes |
| | | Neutral/Unlock | No |




Is the inspection result normal?

YES >> Key cylinder switch is OK.
NO >> Replace front door lock assembly LH (key cylinder switch).

# POWER WINDOW SERIAL LINK
## POWER WINDOW MAIN SWITCH

### POWER WINDOW MAIN SWITCH : Description

INFOID:0000000001675511

Main power window and door lock/unlock switch, power window and door lock/unlock switch RH and BCM transmit and receive the signal by power window serial link.
The signal mentioned below is transmitted from BCM to main power window and door lock/unlock switch and power window and door lock/unlock switch RH
- Keyless power window down signal

The signal mentioned below is transmitted from main power window and door lock/unlock switch to power window and door lock/unlock switch RH
- Front door window RH operation signal
- Power window control by key cylinder switch signal
- Power window lock switch signal
- Retained power operation signal

### POWER WINDOW MAIN SWITCH : Component Function Check

INFOID:0000000001675512

#### 1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL

Check (“CDL LOCK SW ”, “CDL UNLOCK SW”) in “DATA MONITOR” mode for “POWER DOOR LOCK SYSTEM” with CONSULT-III. Refer to DLK-15, "DOOR LOCK : CONSULT-III Function (BCM - DOOR LOCK)".

| Monitor item | Condition | |
|---|---|---|
| CDL LOCK SW | LOCK | : ON |
| | UNLOCK | : OFF |
| CDL UNLOCK SW | LOCK | : OFF |
| | UNLOCK | : ON |

Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> Refer to PWC-51, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

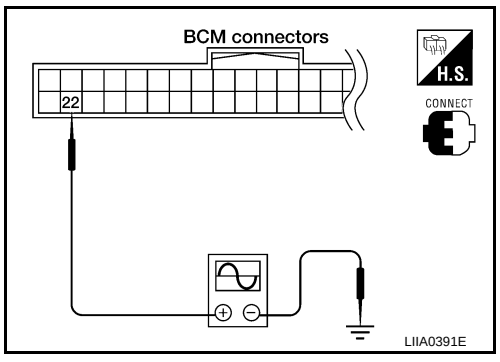
### POWER WINDOW MAIN SWITCH : Diagnosis Procedure

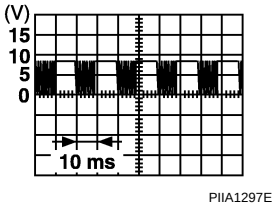
INFOID:0000000001675513

Power Window Serial Link Check

#### 1. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH OUTPUT SIGNAL

1. Remove ignition key and close front door LH and RH.
2. Check signal between BCM connector and ground with oscilloscope when door lock and unlock switch (LH and RH) is turned to “LOCK” or “UNLOCK”.
3. Check that signals which are shown in the figure below can be detected during 10 second just after door lock and unlock switch (LH and RH) is turned to “LOCK” or “UNLOCK”.



| Terminal | | | Signal (Reference value) |
|---|---|---|---|
| (+) | | (–) | |
| BCM connector | Terminal | | |
| M18 | 22 | Ground |  |



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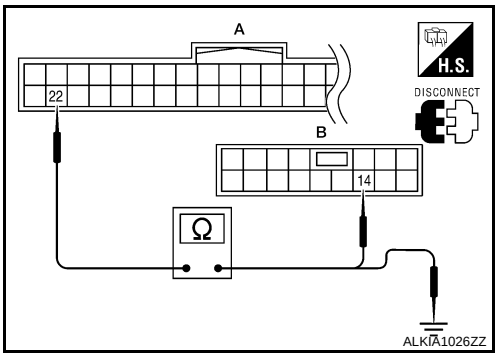
Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> GO TO 2

## 2. CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM and main power window and door lock/unlock switch.
3. Check continuity between BCM connector (A) and main power window and door lock/unlock switch connector (B).





ALKIA1026ZZ

| BCM connector | Terminal | Main power window and door lock/unlock switch connector | Terminal | Continuity |
|---|---|---|---|---|
| M18 (A) | 22 | D7 (B) | 14 | Yes |

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

| BCM connector | Terminal | Ground | Continuity |
|---|---|---|---|
| M18 (A) | 22 | | No |

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".
NO >> Repair or replace harness.

# FRONT POWER WINDOW SWITCH

## FRONT POWER WINDOW SWITCH : Description

INFOID:0000000001675514

Main power window and door lock/unlock switch, power window and door lock/unlock switch RH and BCM transmit and receive the signal by power window serial link.
The signal mentioned below is transmitted from BCM to main power window and door lock/unlock switch and power window and door lock/unlock switch RH

- Keyless power window down signal

The signal mentioned below is transmitted from main power window and door lock/unlock switch to power window and door lock/unlock switch RH

- Front door window RH operation signal
- Power window control by key cylinder switch signal
- Retained power operation signal
- Power window lock switch signal

## FRONT POWER WINDOW SWITCH : Component Function Check

INFOID:0000000001675515

### 1. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH OUTPUT SIGNAL

Check (“CDL LOCK SW ”, “CDL UNLOCK SW”) in “DATA MONITOR” mode for “POWER DOOR LOCK SYSTEM” with CONSULT-III. Refer to DLK-15, "DOOR LOCK : CONSULT-III Function (BCM - DOOR LOCK)".

| Monitor item | Condition | |
|---|---|---|
| CDL LOCK SW | LOCK | : ON |
| | UNLOCK | : OFF |
| CDL UNLOCK SW | LOCK | : OFF |
| | UNLOCK | : ON |

Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> Refer to PWC-53, "FRONT POWER WINDOW SWITCH : Diagnosis Procedure".

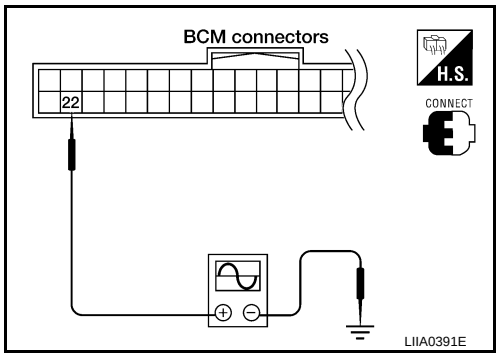
## FRONT POWER WINDOW SWITCH : Diagnosis Procedure

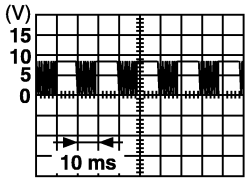
INFOID:0000000001675516

### Power Window Serial Link Check

### 1. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

1. Remove ignition key, and close the front door LH and RH.
2. Check signal between BCM connector and ground with oscilloscope when door lock and unlock switch (LH and RH) is turned to “LOCK” or “UNLOCK”.
3. Check that signals which are shown in the figure below can be detected during 10 second just after door lock and unlock switch (LH and RH) is turned to “LOCK” or “UNLOCK”.




| Terminal | | | Signal (Reference value) |
|---|---|---|---|
| (+) | | (–) | |
| BCM connector | Terminal | | |
| M18 | 22 | Ground |  |

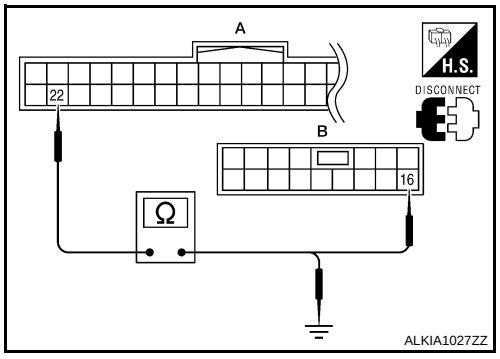


Is the inspection result normal?

YES >> Power window serial link is OK.
NO >> GO TO 2

### 2. CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM.
3. Check continuity between BCM connector (A) and power window and door lock/unlock switch RH connector (B).




| BCM connector | Terminal | Power window and door lock/unlock switch RH connector | Terminal | Continuity |
|---|---|---|---|---|
| M18 (A) | 22 | D105 (B) | 16 | Yes |

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

| BCM connector | Terminal | Ground | Continuity |
|---|---|---|---|
| M18 (A) | 22 | | No |

Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".

NO >> Repair or replace harness.

# POWER WINDOW LOCK SWITCH

## Description

INFOID:0000000001675517

Ground circuit of main power window and door lock/unlock switch shuts off if power window lock switch of main power window and door lock/unlock switch is operated. This inhibits all operation, except for the main switch.

## Component Function Check

INFOID:0000000001675518

### 1. CHECK POWER WINDOW LOCK SIGNAL

Exchanges for a normal main power window and door lock/unlock switch, and operation is checked.

Does power window lock operate?

YES >> Replace main power window and door lock/unlock switch. Refer to PWC-99, "Removal and Installation".

NO >> Check condition of harness and connector.

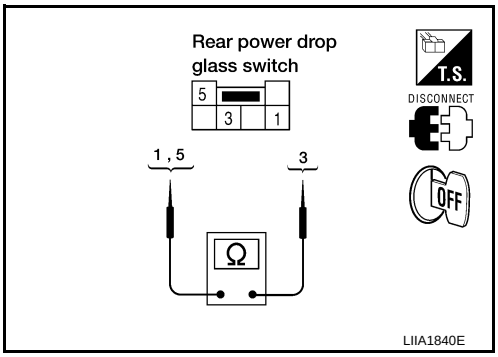
# REAR POWER DROP GLASS CIRCUIT CHECK

## Rear Power Drop Glass Circuit Inspection

INFOID:0000000001689380

### 1. CHECK REAR POWER DROP GLASS SWITCH OPERATION

1. Turn ignition switch OFF.
2. Disconnect rear power drop glass switch.
3. Check continuity between rear power drop glass switch terminals 1, 3 and 5.




| Terminal | | Condition | Continuity |
|---|---|---|---|
| 5 | 3 | Rear power drop glass switch is pressed UP. | Yes |
| 1 | 3 | Rear power drop glass switch is pressed DOWN. | Yes |

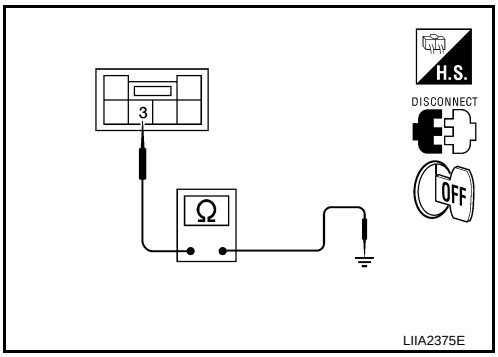
OK or NG

OK >> GO TO 2
NG >> Replace rear power drop glass switch. Refer to PWC-102, "Removal and Installation - Power Drop Glass Switch".

### 2. CHECK REAR POWER DROP GLASS SWITCH GROUND CIRCUIT HARNESS CONTINUITY

Check continuity between rear power drop glass switch connector R103 terminal 3 and ground.

**3 - Ground : Continuity should exist.**

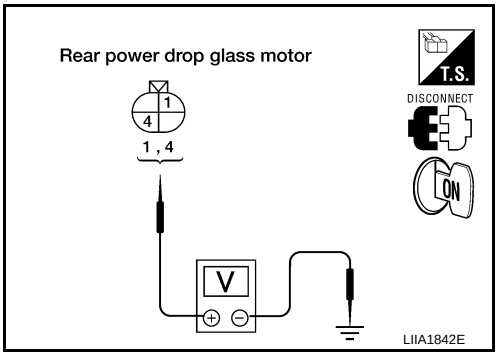



OK or NG

OK >> GO TO 3
NG >> Repair or replace harness.

### 3. CHECK REAR POWER DROP GLASS SIGNAL

1. Connect rear power drop glass switch.
2. Disconnect rear power drop glass motor.
3. Turn ignition switch ON.
4. Check voltage between rear power drop glass motor connector B80 terminals 1, 4 and ground.




| Connector | Terminals (+) | Terminals (-) | Condition | Voltage (V) (Approx.) |
|---|---|---|---|---|
| B80 | 1 | Ground | Up | Battery voltage |
| | | | Down | 0 |
| | 4 | | Up | 0 |
| | | | Down | Battery voltage |

OK or NG

OK >> Replace rear power drop glass motor. Refer to GW-13, "Removal and Installation" .
NG >> Repair or replace harness.

# REAR POWER DROP GLASS DOWN RELAY CHECK

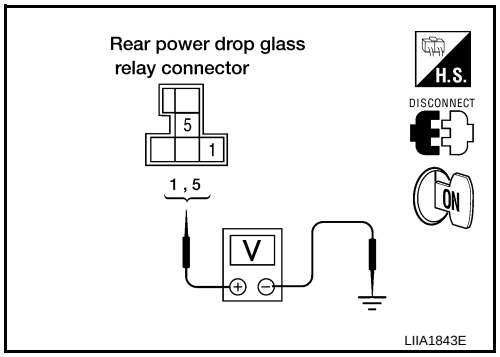
## Rear Power Drop Glass Down Relay Check

INFOID:0000000001689378

### 1. CHECK REAR POWER DROP GLASS UP RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear power drop glass down relay.
3. Turn ignition switch ON.
4. Check voltage between rear power drop glass down relay connector and ground.

| Connector | Terminals | | Voltage (V) (Approx.) |
|---|---|---|---|
| | (+) | (-) | |
| M155 | 1 | Ground | Battery voltage |
| | 5 | | |



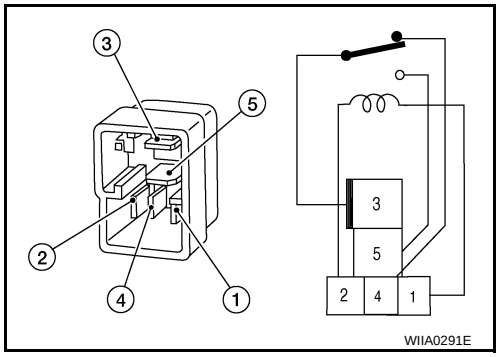

OK or NG

OK >> GO TO 2
NG >> Repair or replace harness.

### 2. CHECK REAR POWER DROP GLASS DOWN RELAY

Check continuity between rear power drop glass down relay terminals 3 and 4, 3 and 5.

| Terminal | | Condition | Continuity |
|---|---|---|---|
| 3 | 4 | 12V direct current supply between terminals 1 and 2 | No |
| | | No current supply | Yes |
| 3 | 5 | 12V direct current supply between terminals 1 and 2 | Yes |
| | | No current supply | No |




OK or NG

OK >> GO TO 3.
NG >> Replace rear power drop glass down relay.

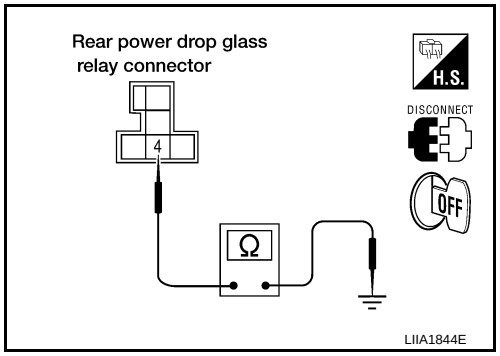
### 3. CHECK REAR POWER DROP GLASS DOWN RELAY GROUND CIRCUIT

Check continuity between rear power drop glass down relay connector M155 terminal 4 and ground.

**4 - Ground : Continuity should exist.**

OK or NG

OK >> GO TO 4
NG >> Repair or replace harness.



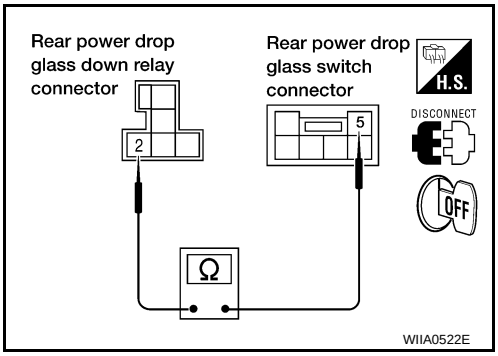

### 4. CHECK REAR POWER DROP GLASS DOWN RELAY CIRCUIT

# REAR POWER DROP GLASS DOWN RELAY CHECK



1. Disconnect rear power drop glass switch.
2. Check continuity between rear power drop glass down relay connector M155 terminal 2 and rear power drop glass switch connector R103 terminal 5.

**2 - 5 : Continuity should exist.**




OK or NG

OK >> Replace rear power drop glass switch. Refer to PWC-102, "Removal and Installation - Power Drop Glass Switch".

NG >> Repair or replace harness.

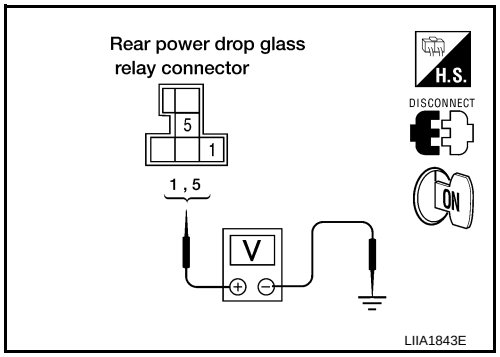
# REAR POWER DROP GLASS UP RELAY CHECK

## Rear Power Drop Glass Up Relay Check

INFOID:0000000001689379

### 1. CHECK REAR POWER DROP GLASS UP RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear power drop glass up relay.
3. Turn ignition switch ON.
4. Check voltage between rear power drop glass up relay connector and ground.



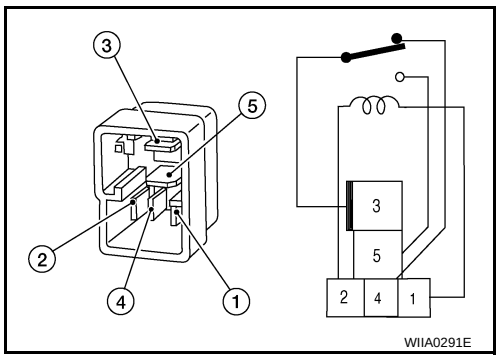

| Connector | Terminals | | Voltage (V) (Approx.) |
|---|---|---|---|
| | (+) | (-) | |
| M154 | 1 | Ground | Battery voltage |
| | 5 | | |

OK or NG

OK >> GO TO 2
NG >> Repair or replace harness.

### 2. CHECK REAR POWER DROP GLASS UP RELAY

Check continuity between rear power drop glass down relay terminals 3 and 4, 3 and 5.




| Terminal | | Condition | Continuity |
|---|---|---|---|
| 3 | 4 | 12V direct current supply between terminals 1 and 2 | No |
| | | No current supply | Yes |
| 3 | 5 | 12V direct current supply between terminals 1 and 2 | Yes |
| | | No current supply | No |

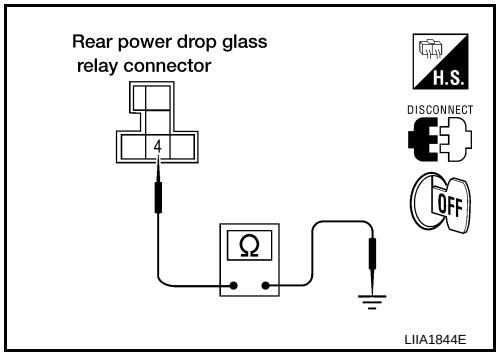
OK or NG

OK >> GO TO 3
NG >> Replace rear power drop glass up relay.

### 3. CHECK REAR POWER DROP GLASS UP RELAY GROUND CIRCUIT

Check continuity between rear power drop glass up relay connector M154 terminal 4 and ground.

**4 - Ground : Continuity should exist.**



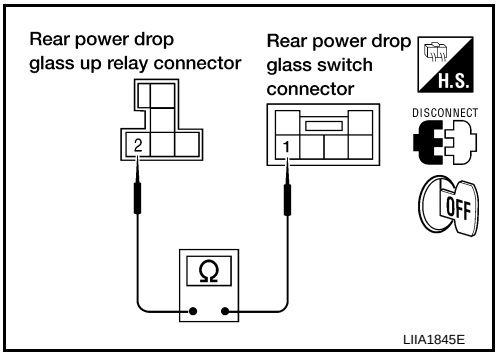

OK or NG

OK >> GO TO 4
NG >> Repair or replace harness.

### 4. CHECK REAR POWER DROP GLASS UP RELAY CIRCUIT

1. Disconnect rear power drop glass switch.
2. Check continuity between rear power drop glass up relay connector M154 terminal 2 and rear power drop glass switch connector R103 terminal 1.

**2 - 1 : Continuity should exist.**




OK or NG

OK >> Replace rear power drop glass switch. Refer to PWC-102, "Removal and Installation - Power Drop Glass Switch".

NG >> Repair or replace harness.

# ECU DIAGNOSIS

## BCM (BODY CONTROL MODULE)

### Reference Value

INFOID:0000000001675529

#### VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

| Monitor Item | Condition | Value/Status |
|---|---|---|
| DOOR SW-DR | Front door LH closed | OFF |
| | Front door LH opened | ON |
| DOOR SW-AS | Front door RH closed | OFF |
| | Front door RH opened | ON |
| KEY CYL LK-SW | Other than front door key cylinder LH LOCK position | OFF |
| | Front door key cylinder LH LOCK position | ON |
| KEY CYL UN-SW | Other than front door key cylinder LH UNLOCK position | OFF |
| | Front door key cylinder LH UNLOCK position | ON |
| KEY CYL SW-TR | **NOTE:**<br>The item is indicated, but not monitored. | OFF |

#### TERMINAL LAYOUT

Refer to BCS-37, "Terminal Layout".

#### PHYSICAL VALUES

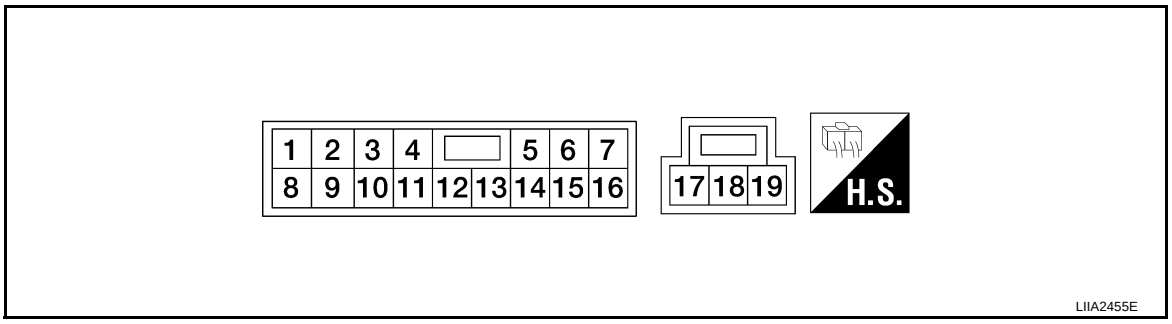
Refer to BCS-37, "Physical Values".

# POWER WINDOW MAIN SWITCH

## Reference Value (Crew Cab)

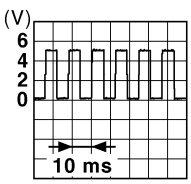
INFOID:0000000001675530

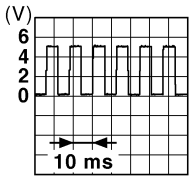
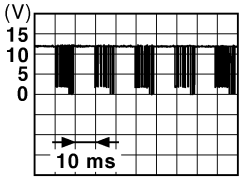
### TERMINAL LAYOUT




### PHYSICAL VALUES

#### MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

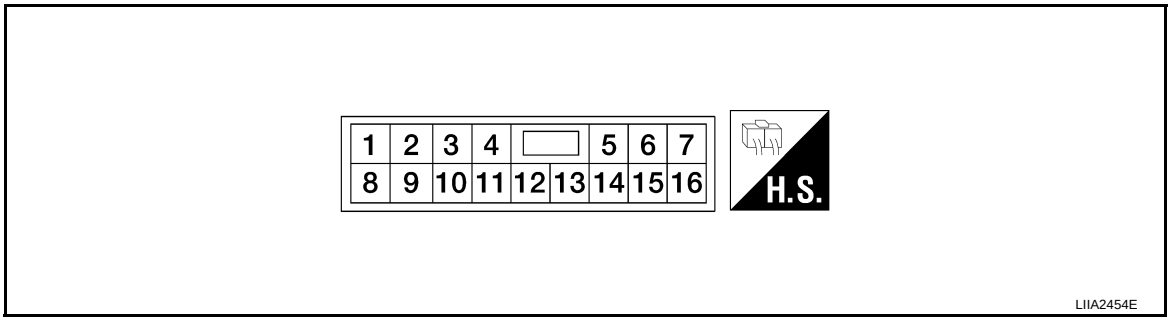
| Terminal No. (Wire color) | | Description | | Condition | Voltage [V] (Approx.) |
|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | |
| 1 (R/Y) | Ground | Rear power window motor LH UP signal | Output | When rear LH switch in power window main switch is operated UP. | Battery voltage |
| 2 (W/B) | Ground | Encoder ground | — | — | 0 |
| 3 (R/B) | Ground | Rear power window motor LH DOWN signal | Output | When rear LH switch in power window main switch is operated DOWN. | Battery voltage |
| 4 (L) | Ground | Door key cylinder switch LH LOCK signal | Input | Key position (Neutral → Locked) | 5 → 0 |
| 5 (L) | Ground | Rear power window motor RH DOWN signal | Output | When rear RH switch in power window main switch is operated DOWN. | Battery voltage |
| 6 (R) | Ground | Door key cylinder switch LH UNLOCK signal | Input | Key position (Neutral → Unlocked) | 5 → 0 |
| 7 (R) | Ground | Rear power window motor RH UP signal | Output | When rear RH switch in power window main switch is operated UP. | Battery voltage |
| 8 (G/R) | 11 | Front door power window motor LH UP signal | Output | When front LH switch in power window main switch is operated UP. | Battery voltage |
| 9 (O) | 2 | Encoder pulse signal 2 | Input | When power window motor operates. |   JMKIA0070GB |

| Terminal No. (Wire color) | | Description | | Condition | Voltage [V] (Approx.) |
|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | |
| 10 (W/L) | Ground | RAP signal | Input | IGN SW ON | Battery voltage |
| | | | | Within 45 second after ignition switch is turned to OFF. | Battery voltage |
| | | | | When front LH or RH door is opened during retained power operation. | 0 |
| 11 (G/W) | 8 | Front door power window motor LH DOWN signal | Output | When front LH switch in power window main switch is operated DOWN. | Battery voltage |
| 13 (G/Y) | 2 | Encoder pulse signal 1 | Input | When power window motor operates. |  JMKIA0070GB |
| 14 (LG/W) | Ground | Power window serial link | Input/ Output | IGN SW ON or power window timer operating. |  JPMIA0013GB |
| 15 (BR) | Ground | Encoder power supply | Output | When ignition switch ON or power window timer operates. | 10 |
| 17 (B) | Ground | Ground | — | — | 0 |
| 19 (W/R) | Ground | Battery power supply | Input | — | Battery voltage |

## Reference Value (King Cab)

INFOID:0000000001689404

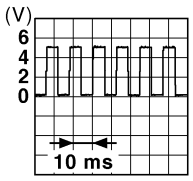
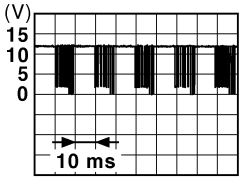
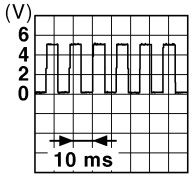
### TERMINAL LAYOUT



LIIA2454E

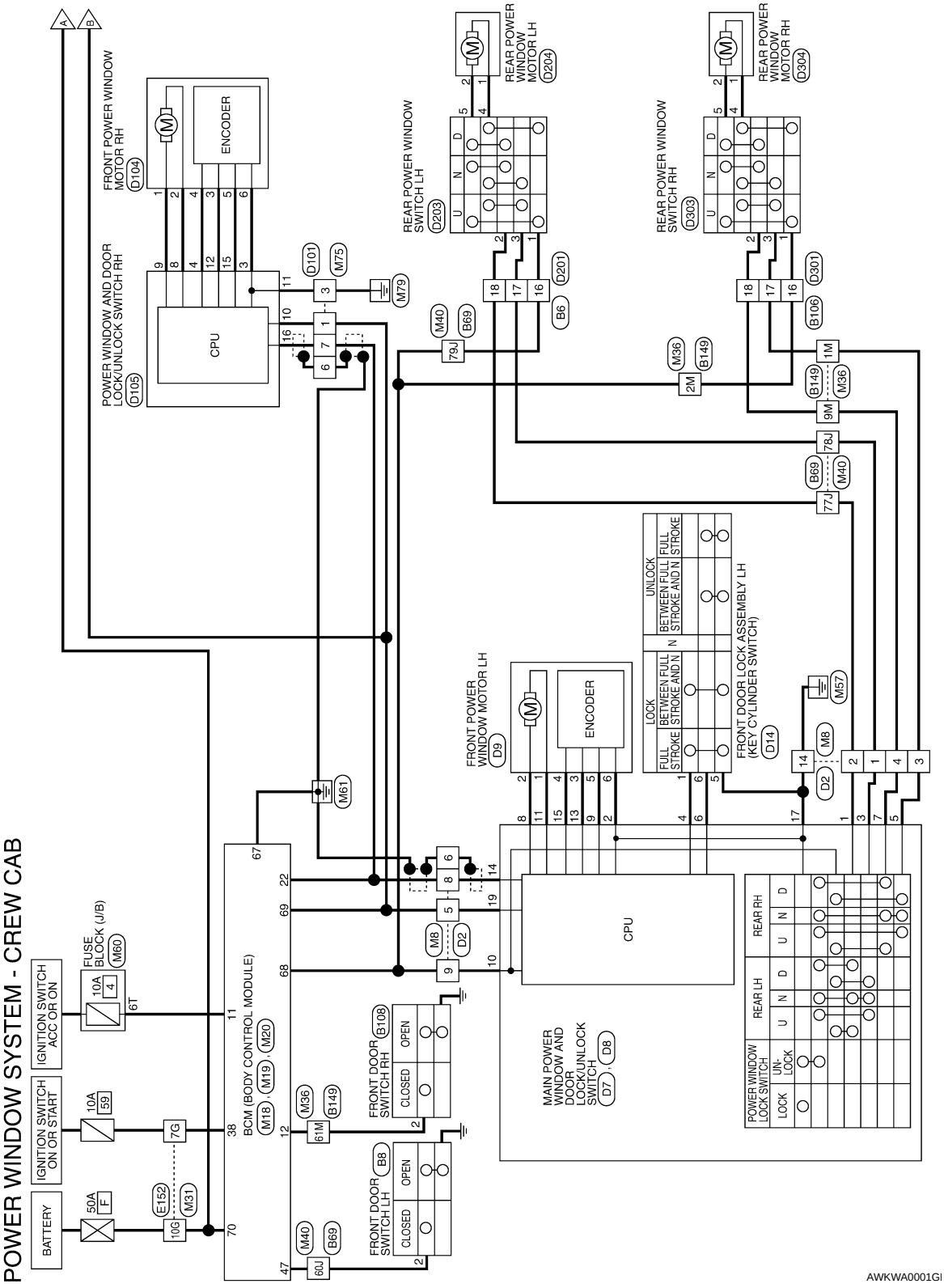
### PHYSICAL VALUES

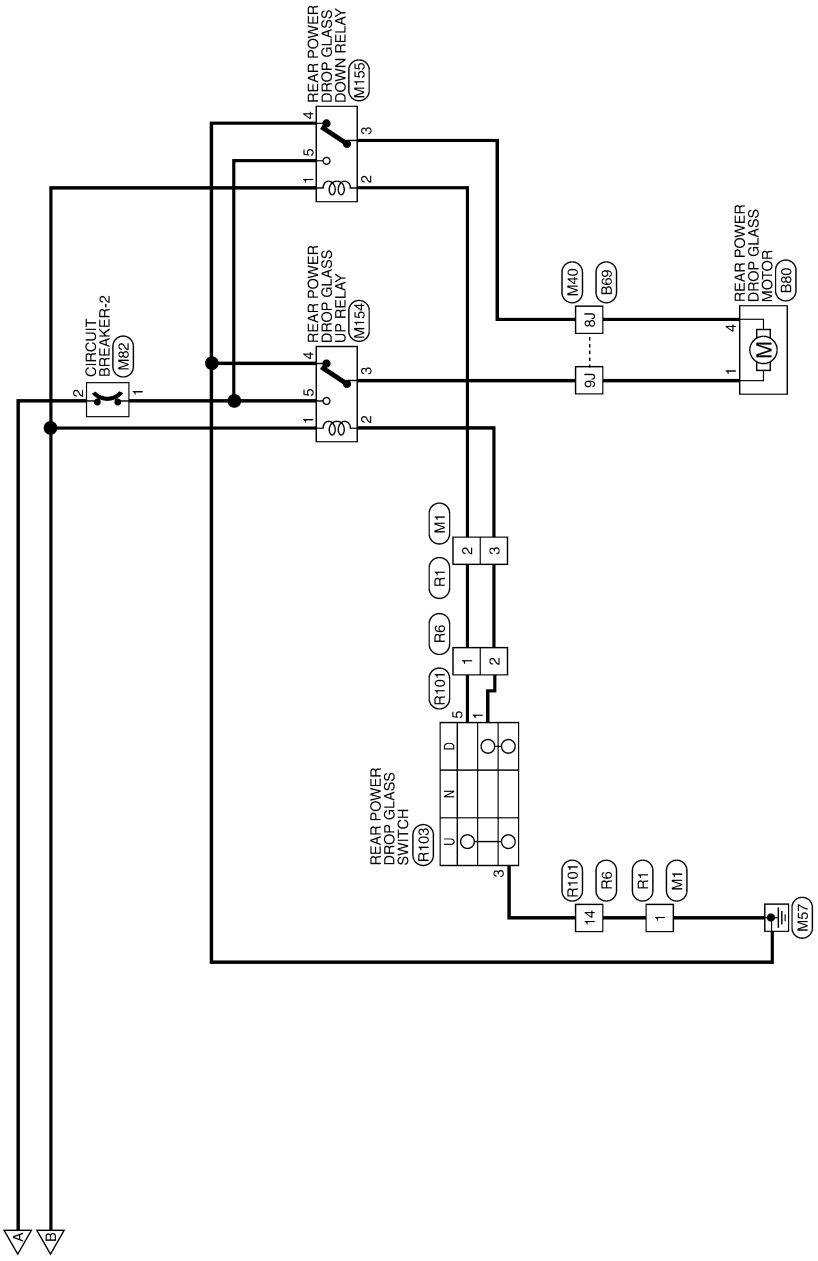
MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

| Terminal No. (Wire color) | | Description | | Condition | Voltage [V] (Approx.) |
|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | |
| 1 (W/R) | Ground | Battery power supply | Input | — | Battery voltage |
| 5 (BR) | Ground | Encoder power supply | Output | When ignition switch ON or power window timer operates | 10 |
| 6 (L) | Ground | Door key cylinder switch LH LOCK signal | Input | Key position (Neutral → Locked) | 5 → 0 |
| 7 (R) | Ground | Door key cylinder switch LH UNLOCK signal | Input | Key position (Neutral → Unlocked) | 5 → 0 |
| 8 (G/R) | 11 | Front door power window motor LH UP signal | Output | When front LH switch in power window main switch is operated UP. | Battery voltage |
| 9 (O) | 3 | Encoder pulse signal 2 | Input | When power window motor operates. |  JMKIA0070GB |
| 10 (W/L) | Ground | RAP signal | Input | IGN SW ON | Battery voltage |
| | | | | Within 45 second after ignition switch is turned to OFF. | Battery voltage |
| | | | | When front LH or RH door is opened during retained power operation. | 0 |
| 11 (G/W) | 8 | Front door power window motor LH DOWN signal | Output | When front LH switch in power window main switch is operated DOWN. | Battery voltage |
| 12 (LG/W) | Ground | Power window serial link | Input/ Output | IGN SW ON or power window timer operating. |  JPMIA0013GB |
| 13 (G/Y) | 3 | Encoder pulse signal 1 | Input | When power window motor operates. |  JMKIA0070GB |
| 14 (W/B) | Ground | Encoder ground | — | — | 0 |
| 15 (B) | Ground | Ground | — | — | 0 |

## Wiring Diagram (Crew Cab)

INFOID:0000000001675531






ALKWA0161GE

POWER WINDOW SYSTEM - CREW CAB CONNECTORS

| Connector No. | M1 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | B | – |
| 2 | L/W | – |
| 3 | G | – |

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

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | R/B | – |
| 2 | R/Y | – |
| 3 | L | – |
| 4 | R | – |
| 5 | W/R | – |
| 6 | SHIELD | – |
| 8 | G | – |
| 9 | W/L | – |
| 14 | B | – |

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

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 11 | O | ACC SW |
| 12 | R/L | DOOR SW (AS) |
| 22 | W/V | ANTI-PINCH SERIAL LINK BUS |
| 38 | W/L | IGN SW |

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

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 47 | SB | DOOR SW (DR) |

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

H.S.

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

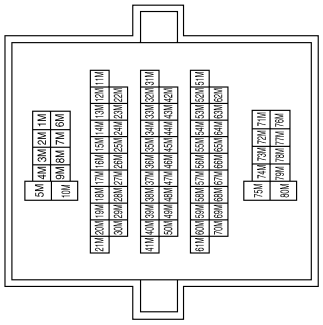
| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 67 | B | GND (POWER) |
| 68 | W/L | POWER WINDOW POWER SUPPLY (RAP) |
| 69 | W/R | POWER WINDOW POWER SUPPLY(BAT) |
| 70 | W/B | BATT (FL) |

AWKIA0038GB

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1M | L | – |
| 2M | W/L | – |
| 9M | R | – |
| 61M | R/L | – |

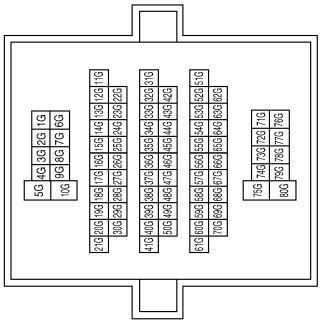
| Connector No. | M36 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.



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

H.S.

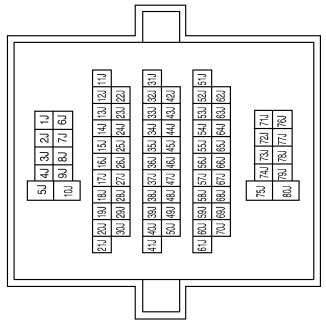


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7G | W/L | – |
| 10G | W/B | – |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 8J | B/R | – |
| 9J | L/Y | – |
| 60J | SB | – |
| 77J | R/Y | – |
| 78J | R/B | – |
| 79J | W/L | – |

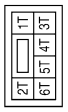
| Connector No. | M40 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.



| Connector No. | M60 |
|---|---|
| Connector Name | FUSE BLOCK (J/B) |
| Connector Color | WHITE |

H.S.



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6T | O | – |

AWKIA0039GB

| Connector No. | M154 |
|---|---|
| Connector Name | REAR POWER DROP GLASS UP RELAY |
| Connector Color | BLACK |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/L | – |
| 2 | G | – |
| 3 | L/Y | – |
| 4 | B | – |
| 5 | L/B | – |

| Connector No. | M82 |
|---|---|
| Connector Name | CIRCUIT BREAKER-2 |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L/B | – |
| 2 | W/B | – |

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

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/R | – |
| 3 | B | – |
| 6 | SHIELD | – |
| 7 | G | – |

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

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7G | L/W | – |
| 10G | W/B | – |

| Connector No. | M155 |
|---|---|
| Connector Name | REAR POWER DROP GLASS DOWN RELAY |
| Connector Color | BLACK |

H.S.

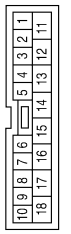



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/L | – |
| 2 | L/W | – |
| 3 | B/R | – |
| 4 | B | – |
| 5 | L/B | – |

AWKIA0040GB

| Connector No. | B6 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

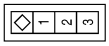
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 16 | W/L | – |
| 17 | R/B | – |
| 18 | R/Y | – |

| Connector No. | B8 |
|---|---|
| Connector Name | FRONT DOOR SWITCH LH |
| Connector Color | WHITE |

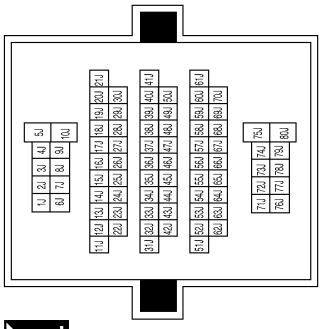
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | SB | – |

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

H.S.



| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 8J | B/R | – |
| 9J | L/Y | – |
| 60J | SB | – |
| 77J | R/Y | – |
| 78J | R/B | – |
| 79J | W/L | – |

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

H.S.


| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L/Y | – |
| 4 | B/R | – |

AWKIA0041GB

| Connector No. | B106 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 16 | W/R | – |
| 17 | L | – |
| 18 | R | – |

| Connector No. | B108 |
|---|---|
| Connector Name | FRONT DOOR SWITCH RH |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | R/L | – |

| Connector No. | B149 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1M | L | – |
| 2M | W/L | – |
| 9M | R | – |
| 61M | R/L | – |

| Connector No. | R1 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | B | – |
| 2 | L/W | – |
| 3 | G | – |

| Connector No. | R6 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L/W | – |
| 2 | G | – |
| 14 | B | – |

| Connector No. | R101 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L/W | – |
| 2 | G | – |
| 14 | B | – |

AWKIA0042GB

| Connector No. | R103 |
|---|---|
| Connector Name | REAR POWER DROP GLASS SWITCH |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – |
| 3 | B | – |
| 5 | L/W | – |

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

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | R/B | – |
| 2 | R/Y | – |
| 3 | L | – |
| 4 | R | – |
| 5 | W/R | – |
| 8 | LG/W | – |
| 9 | W/L | – |
| 14 | B | – |

| Connector No. | D7 |
|---|---|
| Connector Name | MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | R/Y | – |
| 2 | W/B | – |
| 3 | R/B | – |
| 4 | L | – |
| 5 | L | – |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | R | – |
| 7 | R | – |
| 8 | G/R | – |
| 9 | O | – |
| 10 | W/L | – |
| 11 | G/W | – |
| 13 | G/Y | – |
| 14 | LG/W | – |
| 15 | BR | – |

| Connector No. | D8 |
|---|---|
| Connector Name | MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 17 | B | GND |
| 19 | W/R | – |

AWKIA0043GB

| Connector No. | D9 |
|---|---|
| Connector Name | FRONT POWER WINDOW MOTOR LH |
| Connector Color | GRAY |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G/W | – |
| 2 | G/R | – |
| 3 | G/Y | – |
| 4 | BR | – |
| 5 | O | – |
| 6 | W/B | – |

| Connector No. | D14 |
|---|---|
| Connector Name | FRONT DOOR LOCK ASSEMBLY LH |
| Connector Color | BLACK |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L | LOCK |
| 5 | B | GND |
| 6 | R | UNLOCK |

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

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/R | – |
| 3 | B | – |
| 6 | SHIELD | – |
| 7 | LG/W | – |

| Connector No. | D104 |
|---|---|
| Connector Name | FRONT POWER WINDOW MOTOR RH |
| Connector Color | GRAY |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – |
| 2 | L | – |
| 3 | G/Y | – |
| 4 | G/R | – |
| 5 | G/W | – |
| 6 | W/B | – |

| Connector No. | D105 |
|---|---|
| Connector Name | POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | W/B | – |
| 4 | G/R | – |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 8 | L | – |
| 9 | G | – |
| 10 | W/R | – |
| 11 | B | GND |
| 12 | G/Y | – |
| 15 | G/W | – |
| 16 | LG/W | ANTI_PINCH_SERIAL_LINK |

AWKIA0044GB

| Connector No. | D201 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 16 | W/L | – |
| 17 | R/B | – |
| 18 | R/Y | – |

| Connector No. | D203 |
|---|---|
| Connector Name | REAR POWER WINDOW SWITCH LH |
| Connector Color | WHITE |

H.S.

| | | | | | 7 | |
|---|---|---|---|---|---|---|
| 2 | 3 | 4 | 5 | 1 | | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/L | BAT |
| 2 | R/Y | UP |
| 3 | R/B | DOWN |
| 4 | G | DOWN |
| 5 | L | UP |

| Connector No. | D204 |
|---|---|
| Connector Name | REAR POWER WINDOW MOTOR LH |
| Connector Color | GRAY |

H.S.

| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – |
| 2 | L | – |

| Connector No. | D301 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 16 | W/L | – |
| 17 | L | – |
| 18 | R | – |

| Connector No. | D303 |
|---|---|
| Connector Name | REAR POWER WINDOW SWITCH RH |
| Connector Color | WHITE |

H.S.

| | | | | | 7 | |
|---|---|---|---|---|---|---|
| 2 | 3 | 4 | 5 | 1 | | |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/L | BAT |
| 2 | R | UP |
| 3 | L | DOWN |
| 4 | Y/B | DOWN |
| 5 | BR | UP |

| Connector No. | D304 |
|---|---|
| Connector Name | REAR POWER WINDOW MOTOR RH |
| Connector Color | GRAY |

H.S.

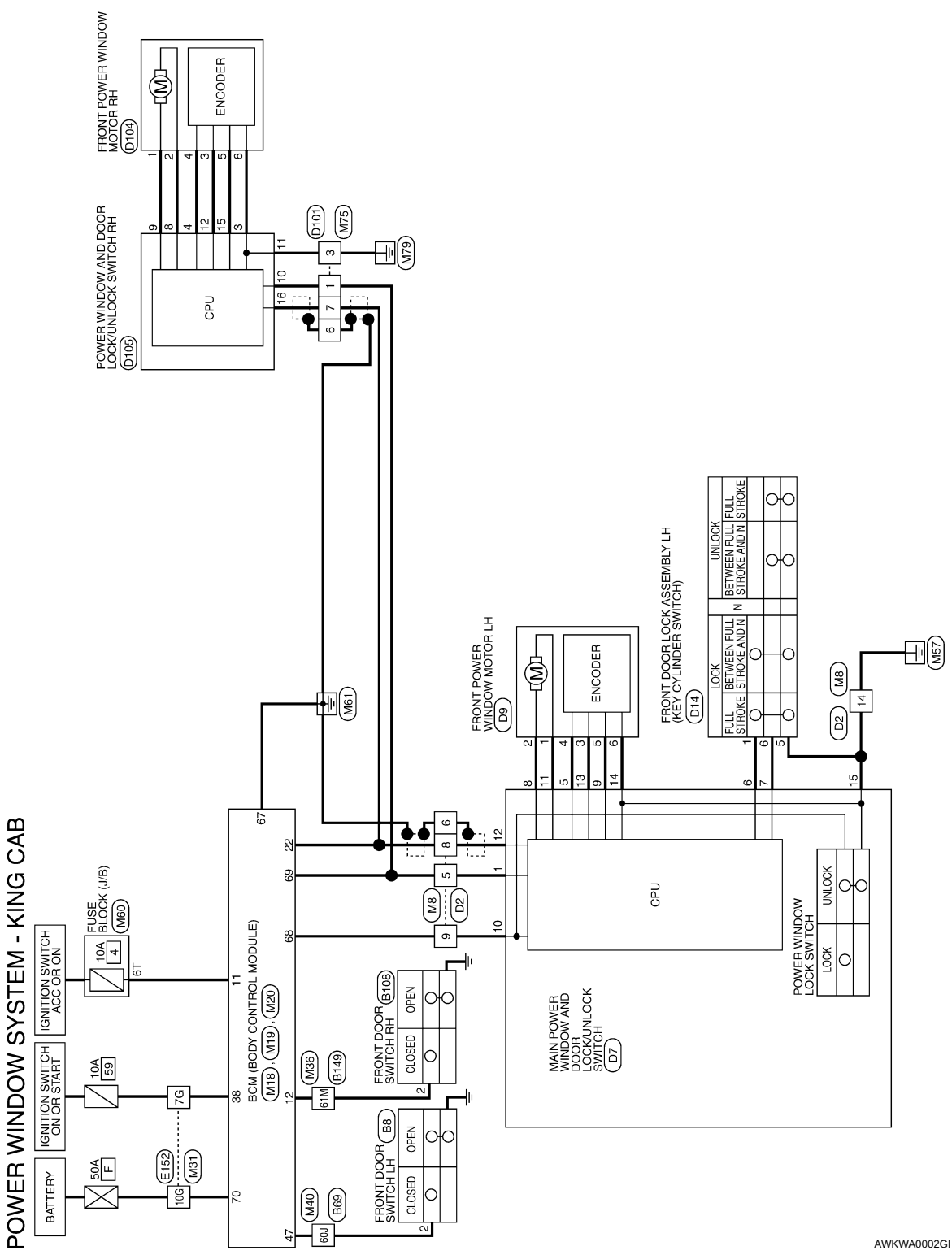
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | Y/B | – |
| 2 | BR | – |

AWKIA0045GB

## Wiring Diagram (King Cab)

INFOID:0000000001689405



POWER WINDOW SYSTEM - KING CAB CONNECTORS

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

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 5 | W/R | – |
| 6 | SHIELD | – |
| 8 | G | – |
| 9 | W/L | – |
| 14 | B | – |

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

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 11 | O | ACC SW |
| 12 | R/L | DOOR SW (AS) |
| 22 | W/V | ANTI-PINCH SERIAL LINK BUS |
| 38 | W/L | IGN SW |

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

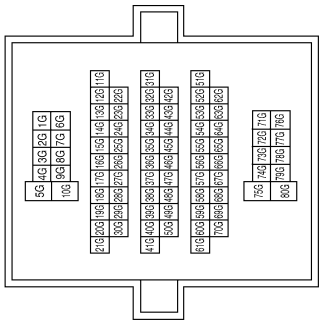
H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 47 | SB | DOOR SW (DR) |

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

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7G | W/L | – |
| 10G | W/B | – |

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

H.S.

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

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 67 | B | GND (POWER) |
| 68 | W/L | POWER WINDOW POWER SUPPLY (RAP) |
| 69 | W/R | POWER WINDOW POWER SUPPLY(BAT) |
| 70 | W/B | BATT (FL) |

AWKIA0047GB

| Connector No. | M60 |
|---|---|
| Connector Name | FUSE BLOCK (J/B) |
| Connector Color | WHITE |

H.S.

| 2T | | 1T |
|---|---|---|
| 6T | 5T | 4T | 3T |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6T | O | – |

| Connector No. | M40 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 60J | SB | – |

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

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 7G | L/W | – |
| 10G | W/B | – |

| Connector No. | M36 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 61M | R/L | – |

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

H.S.

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/R | – |
| 3 | B | – |
| 6 | SHIELD | – |
| 7 | G | – |

AWKIA0048GB

| Connector No. | B8 |
|---|---|
| Connector Name | FRONT DOOR SWITCH LH |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | SB | – |

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

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 60J | SB | – |

| Connector No. | B108 |
|---|---|
| Connector Name | FRONT DOOR SWITCH RH |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 2 | R/L | – |

| Connector No. | B149 |
|---|---|
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 61M | R/L | – |

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

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 5 | W/R | – |
| 6 | SHIELD | – |
| 8 | LG/W | – |
| 9 | W/L | – |
| 14 | B | – |

AWKIA0049GB

| Connector No. | D7 |
|---|---|
| Connector Name | MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH |
| Connector Color | WHITE |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/R | – |
| 5 | BR | – |

| Connector No. | D9 |
|---|---|
| Connector Name | FRONT POWER WINDOW MOTOR LH |
| Connector Color | GRAY |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G/W | – |
| 2 | G/R | – |
| 3 | G/Y | – |
| 4 | BR | – |
| 5 | O | – |
| 6 | W/B | – |

| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 6 | L | – |
| 7 | R | – |
| 8 | G/R | – |
| 9 | O | – |
| 10 | W/L | – |
| 11 | G/W | – |
| 12 | LG/W | – |
| 13 | G/Y | – |
| 14 | W/B | – |
| 15 | B | – |

| Connector No. | D14 |
|---|---|
| Connector Name | FRONT DOOR LOCK ASSEMBLY LH |
| Connector Color | BLACK |

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | L | LOCK |
| 5 | B | GND |
| 6 | R | UNLOCK |

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

H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | W/R | – |
| 3 | B | – |
| 6 | SHIELD | – |
| 7 | LG/W | – |

| Connector No. | D104 |
|---|---|
| Connector Name | FRONT POWER WINDOW MOTOR RH |
| Connector Color | GRAY |

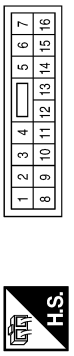
H.S.




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 1 | G | – |
| 2 | L | – |
| 3 | G/Y | – |
| 4 | G/R | – |
| 5 | G/W | – |
| 6 | W/B | – |

AWKIA0050GB

| | |
|---|---|
| Connector No. | D105 |
| Connector Name | POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH |
| Connector Color | WHITE |




| Terminal No. | Color of Wire | Signal Name |
|---|---|---|
| 3 | W/B | – |
| 4 | G/R | – |
| 8 | L | – |
| 9 | G | – |
| 10 | W/R | – |
| 11 | B | GND |
| 12 | G/Y | – |
| 15 | G/W | – |
| 16 | LG/W | ANTI_PINCH_SERIAL_LINK |

AWKIA0051GB

## Fail Safe

*INFOID:0000000001675532*

### FAIL-SAFE CONTROL

Switches to fail-safe control when malfunction is detected in encoder signal that detects up/down speed and direction of door glass. Switches to fail-safe control when error beyond regulation value is detected between the fully closed position and the actual position of the glass.

| Error | Error condition |
|---|---|
| Pulse sensor malfunction | When only one side of pulse signal is being detected for more than the specified value. |
| Both pulse sensors malfunction | When both pulse signals have not been detected for more than the specified value during glass open/close operation. |
| Pulse direction malfunction | When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction. |
| Glass recognition position malfunction 1 | When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value. |
| Glass recognition position malfunction 2 | When it detects pulse count more than the value of glass full stroke during glass open/close operation. |
| Malfunction of not yet updated closed position of glass | When glass open/close operation is continuously performed without fully closing more than the specified value (approximately 10 strokes). |

It changes to condition before initialization and the following functions do not operate when switched to fail-safe control.
- Auto-up operation
- Anti-pinch function
- Retained power function

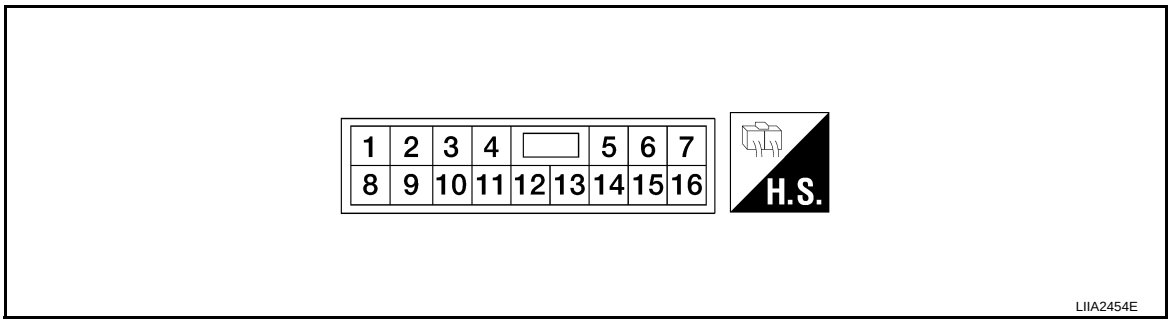
Perform initial operation to recover when switched to fail-safe mode. However, it switches back to fail-safe control when malfunction is found in power window switch or in motor.

# FRONT POWER WINDOW SWITCH

## Reference Value

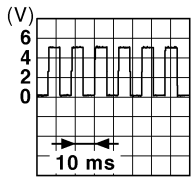
INFOID:0000000001675533

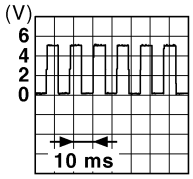
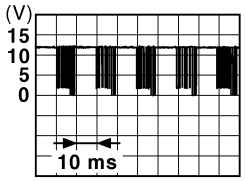
### TERMINAL LAYOUT




### PHYSICAL VALUES

#### POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

| Terminal No. (Wire color) | | Description | | Condition | Voltage [V] (Approx.) |
|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | |
| 3 (W/B) | Ground | Encoder ground | — | — | 0 |
| 4 (G/R) | Ground | Encoder power supply | Output | When ignition switch ON or power window timer operates | 10 |
| 8 (L) | 9 | Power window motor UP signal | Output | When power window motor is UP at operated. | Battery voltage |
| 9 (G) | 8 | Power window motor DOWN signal | Output | When power window motor is DOWN at operated. | Battery voltage |
| 10 (W/R) | Ground | Battery power supply | Input | — | Battery voltage |
| 11 (B) | Ground | Ground | — | — | 0 |
| 12 (G/Y) | 3 | Encoder pulse signal 1 | Input | When power window motor operates. |  JMKIA0070GB |

| Terminal No. (Wire color) | | Description | | Condition | Voltage [V] (Approx.) |
|---|---|---|---|---|---|
| + | – | Signal name | Input/ Output | | |
| 15 (G/W) | 3 | Encoder pulse signal 2 | Input | When power window motor operates. |  JMKIA0070GB |
| 16 (LG/W) | Ground | Power window serial link | Input/ Output | IGN SW ON or power window timer operating. |  JPMIA0013GB |

## Wiring Diagram

INFOID:0000000001675534

Refer to PWC-65, "Wiring Diagram (Crew Cab)" or PWC-75, "Wiring Diagram (King Cab)".

## Fail Safe

INFOID:0000000001675535

### FAIL-SAFE CONTROL

Switches to fail-safe control when malfunction is detected in encoder signal that detects up/down speed and direction of door glass. Switches to fail-safe control when error beyond regulation value is detected between the fully closed position and the actual position of the glass.

| Error | Error condition |
|---|---|
| Pulse sensor malfunction | When only one side of pulse signal is being detected for more than the specified value. |
| Both pulse sensors malfunction | When both pulse signals have not been detected for more than the specified value during glass open/close operation. |
| Pulse direction malfunction | When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction. |
| Glass recognition position malfunction 1 | When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value. |
| Glass recognition position malfunction 2 | When it detects pulse count more than the value of glass full stroke during glass open/close operation. |
| Malfunction of not yet updated closed position of glass | When glass open/close operation is continuously performed without fully closing more than the specified value (approximately 10 strokes). |

It changes to condition before initialization and the following functions do not operate when switched to fail-safe control.

- Auto-up operation
- Anti-pinch function
- Retained power function

Perform initial operation to recover when switched to fail-safe mode. However, it switches back to fail-safe control when malfunction is found in power window switch or in motor.

# SYMPTOM DIAGNOSIS

## NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

### Diagnosis Procedure

INFOID:0000000001675536

#### 1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-29, "Diagnosis Procedure".

Is the inspection result normal?

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

#### 2. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check power window switch main power supply and ground circuit.
Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Component Function Check".

Is the inspection result normal?

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

#### 3. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH SERIAL CIRCUIT

Check main power window and door lock/unlock switch serial circuit.
Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Component Function Check".

Is the inspection result normal?

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

#### 4. CHECK MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Check main power window and door lock/unlock switch.
Refer to PWC-11, "POWER WINDOW MAIN SWITCH : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE

## Diagnosis Procedure

INFOID:0000000001675537

### 1. CHECK FRONT POWER WINDOW MOTOR LH

Check front power window motor LH.
Refer to PWC-24, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# FRONT PASSENGER SIDE POWER WINDOW ALONE DOES NOT OPERATE

## Diagnosis Procedure

INFOID:0000000001675538

### 1. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH

Check power window and door lock/unlock switch RH.
Refer to PWC-15, "FRONT POWER WINDOW SWITCH : Component Function Check".

Is the inspection result normal?

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

### 2. CHECK POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH SERIAL LINK CIRCUIT

Check power window and door lock/unlock switch RH serial link circuit.
Refer to PWC-52, "FRONT POWER WINDOW SWITCH : Component Function Check".

Is the inspection result normal?

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

### 3. CHECK FRONT POWER WINDOW MOTOR RH CIRCUIT

Check front power window motor RH circuit.
Refer to PWC-25, "PASSENGER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE

## Diagnosis Procedure

INFOID:0000000001675539

### 1. CHECK REAR POWER WINDOW SWITCH LH

Check rear power window switch LH.
Refer to PWC-17, "REAR POWER WINDOW SWITCH : Component Function Check".

Is th e inspection result normal?

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

### 2. CHECK REAR POWER WINDOW MOTOR LH

Check rear power window motor LH.
Refer to PWC-27, "REAR LH : Component Function Check".

Is th e inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

## Diagnosis Procedure

INFOID:0000000001675540

### 1. CHECK REAR POWER WINDOW SWITCH RH

Check rear power window switch RH.
Refer to PWC-17, "REAR POWER WINDOW SWITCH : Component Function Check".

Is the inspection result normal?

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

### 2. CHECK REAR POWER WINDOW MOTOR RH

Check rear power window motor RH.
Refer to PWC-28, "REAR RH : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (DRIVER SIDE)

## Diagnosis Procedure

INFOID:0000000001675541

### 1. CHECK DOOR WINDOW SLIDING PART

- A foreign material adheres to window glass or glass run rubber.
- Glass run rubber wear or deformation.
- Sash is tilted too much or not enough.

Is the inspection result normal?

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

### 2. CHECK ENCODER CIRCUIT

Check encoder circuit.
Refer to PWC-31, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# ANTI-PINCH SYSTEM DOES NOT OPERATE NORMALLY (PASSENGER SIDE)

## Diagnosis Procedure

INFOID:0000000001675542

### 1. CHECK DOOR WINDOW SLIDING PART

- A foreign material adheres to window glass or glass run rubber.
- Glass run rubber wear or deformation.
- Sash is tilted too much or not enough.

Is the inspection result normal?

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

### 2. CHECK ENCODER CIRCUIT

Check encoder circuit.
Refer to PWC-33, "PASSENGER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATE NORMALLY (DRIVER SIDE)

## Diagnosis Procedure

INFOID:0000000001675543

### 1. CHECK ENCODER

Check encoder.
Refer to PWC-31, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATE NORMALLY (PASSENGER SIDE)

## Diagnosis Procedure

INFOID:0000000001675544

### 1. CHECK ENCODER

Check encoder.
Refer to PWC-33, "PASSENGER SIDE : Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

## Diagnosis Procedure

INFOID:0000000001675545

### 1. CHECK FRONT DOOR SWITCH

Check front door switch.
Refer to PWC-43, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# DOES NOT OPERATE BY KEY CYLINDER SWITCH

## Diagnosis Procedure

INFOID:0000000001675546

### 1. CHECK FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH)

Check front door lock assembly LH (key cylinder switch).
Refer to PWC-45, "Component Function Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

## Diagnosis Procedure

INFOID:0000000001675547

### 1. CHECK KEYFOB FUNCTION

Check keyfob function.
Refer to DLK-16, "REMOTE KEYLESS ENTRY : CONSULT-III Function (BCM - RKE)" with remote keyless entry system.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".
NO >> Replace BCM. Refer to BCS-50, "Removal and Installation".

# POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

## Diagnosis Procedure

INFOID:0000000001675548

### 1. REPLACE MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH

Replace main power window and door lock/unlock switch.
Refer to PWC-99, "Removal and Installation".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# REAR POWER DROP GLASS DOES NOT OPERATE

## Diagnosis Procedure

INFOID:0000000001675549

### 1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-29, "Diagnosis Procedure".

Is the inspection result normal?

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

### 2. CHECK REAR POWER DROP GLASS SWITCH

Check rear power drop glass switch.
Refer to PWC-56, "Rear Power Drop Glass Circuit Inspection".

Is the inspection result normal?

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

### 3. CHECK REAR POWER DROP GLASS MOTOR CIRCUIT

Check rear power drop glass motor circuit.
Refer to PWC-56, "Rear Power Drop Glass Circuit Inspection".

Is the inspection result normal?

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

### 4. CHECK REAR POWER DROP GLASS RELAYS

Check rear power drop glass relays.
Refer to PWC-57, "Rear Power Drop Glass Down Relay Check" and PWC-59, "Rear Power Drop Glass Up Relay Check".

Is the inspection result normal?

YES >> Inspection End.
NO >> Check intermittent incident. Refer to GI-41, "Intermittent Incident".

# PRECAUTION

## PRECAUTIONS

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

INFOID:0000000001534457

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.**

# ON-VEHICLE REPAIR

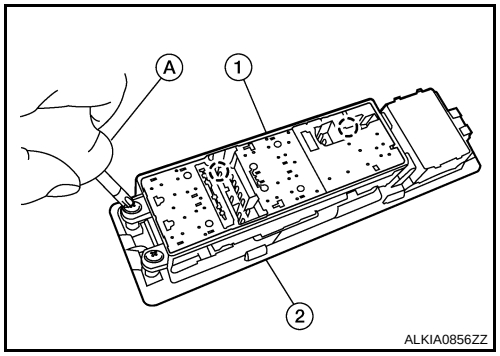
## POWER WINDOW MAIN SWITCH

### Removal and Installation

INFOID:0000000001534445

REMOVAL

1. Remove the power window main switch finisher (2) from the front door finisher LH. Refer to Body INTERIOR.
2. Using a screwedriver (A), remove the power window main switch (1) screws, then release from the finisher (2).




INSTALLATION

Install in the reverse order of removal.

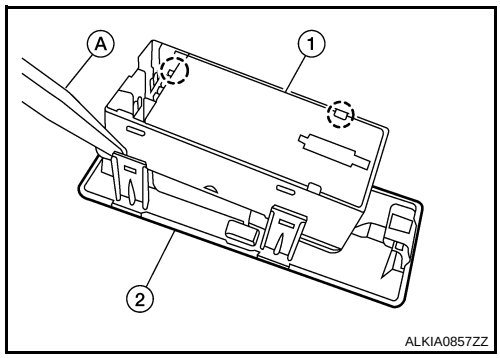
# FRONT POWER WINDOW SWITCH

## Removal and Installation

INFOID:0000000001534444

### REMOVAL

1. Remove the front power window switch finisher (2) from the front door finisher RH. Refer to BODY DOOR FINISHER.
2. Using a suitable tool (A) release the tabs, then remove the front power window switch (1).




### INSTALLATION

Install in the reverse order of removal.

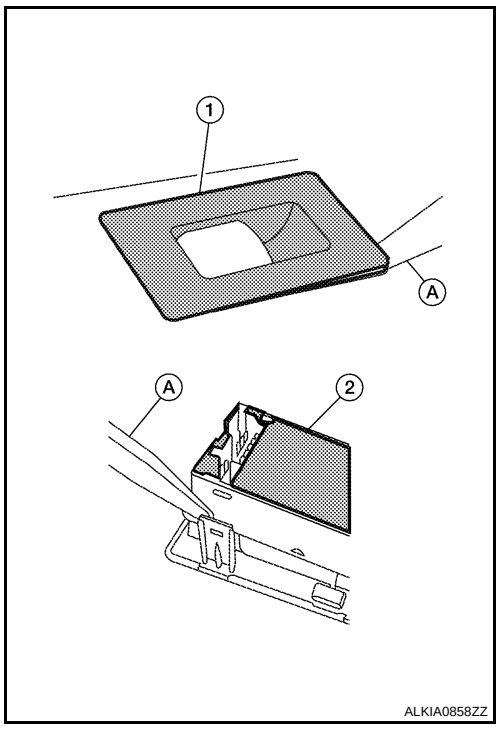
# REAR POWER WINDOW SWITCH

## Removal and Installation - Rear Door Switch

INFOID:0000000001534558

### REMOVAL

1. Remove the rear power window switch finisher (1) from the rear door finisher. Refer to BODY DOOR FINISHER.
2. Using a suitable tool (A) release the tabs, then remove the rear power window switch (2).




### INSTALLATION

Installation is in the reverse order of removal.

# REAR POWER WINDOW SWITCH

## Removal and Installation - Power Drop Glass Switch

INFOID:0000000001675570

### REMOVAL

1. Remove the overhead console. Refer to HEADLINER.
2. Using a suitable tool, release the tabs and remove the power drop glass switch from the overhead console.

### INSTALLATION

Installation is in the reverse order of removal.