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# **PRECAUTION**

#### **PRECAUTIONS**

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

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

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

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

#### **WARNING:**

Always observe the following items for preventing accidental activation.

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

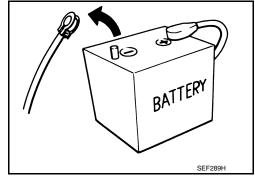
# Precautions for Removing Battery Terminal

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine : 20 minutes YS23DDT : 4 minutes
HRA2DDT : 12 minutes YS23DDTT : 4 minutes
K9K engine : 4 minutes ZD30DDTi : 60 seconds
M9R engine : 4 minutes ZD30DDTT : 60 seconds

R9M engine : 4 minutes V9X engine : 4 minutes YD25DDTi : 2 minutes



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#### NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

 After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.
 NOTE:

#### **PRECAUTIONS**

#### < PRECAUTION >

- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
- Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
- Driving for 30 minutes or more on a steep slope.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
 NOTE:

The removal of 12V battery may cause a DTC detection error.

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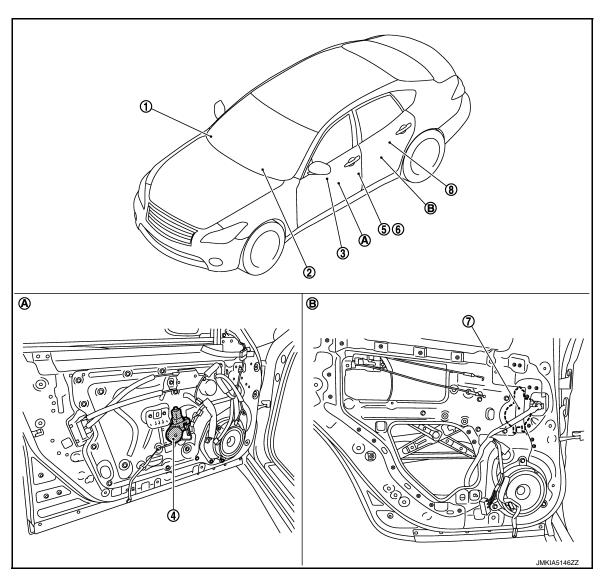
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# SYSTEM DESCRIPTION

# **COMPONENT PARTS**

# Component Parts Location

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- Remote keyless entry receiver
  Refer to <u>DLK-10</u>, "<u>DOOR LOCK</u>
  <u>SYSTEM</u>:
  Component Parts Location"
- 4. Front power window motor (driver side)
- 7. Rear power window motor LH
- A. View with front door finisher removed B.
- 2. BCM
  Refer to BCS-5, "BODY CONTROL
  SYSTEM: Component Parts Location"
- 5. Front door switch (driver side)
- 8. Rear power window switch LH
  - 3. View with rear door finisher removed
- 3. Power window main switch
- 6. Front door lock assembly (driver side) (door key cylinder switch)

# **COMPONENT PARTS**

# < SYSTEM DESCRIPTION >

# **Component Description**

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Component	Function
BCM	<ul><li>Supplies power supply to power window switch.</li><li>Controls retained power.</li></ul>
Power window main switch	<ul> <li>Directly controls all power window motor of all doors.</li> <li>Controls anti-pinch operation of power window.</li> </ul>
Front power window switch (passenger side)	<ul> <li>Controls anti-pinch operation of power window.</li> <li>Controls power window motor of passenger door.</li> </ul>
Rear power window switch	<ul> <li>Controls anti-pinch operation of power window.</li> <li>Controls power window motor of rear right and left doors.</li> </ul>
Power window motor	<ul> <li>Integrates the ENCODER and WINDOW MOTOR.</li> <li>Starts operating with signals from each power window switch.</li> <li>Transmits power window motor rotation as a pulse signal to power window switch.</li> </ul>
Remote keyless entry receiver	Receives lock/unlock signal from the intelligent key, and then transmits to BCM.
Front door lock assembly (door key cylinder switch)	Transmits operation condition of door key cylinder switch to power window main switch.
Front door switch (driver side/passenger side)	Front door open/close condition and transmits to BCM.

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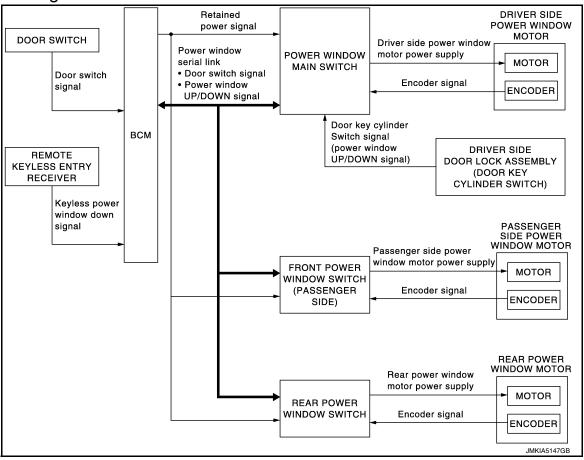
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#### **SYSTEM**

## System Diagram

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# System Description

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#### POWER WINDOW OPERATION

- Power window system is activated by power window switch operation when ignition switch turns ON, or during the retained power operation after ignition switch turns OFF.
- Power window main switch can open/close door glass.
- Front and rear power window switch can open/close the corresponding door glass.
- Power window lock switch can lock all power windows other than driver seat.
- All power windows open when pressing Intelligent Key unlock button for 3 seconds.
- If door glass receives resistance that is the specified value or more while power window of each seat is in AUTO-UP operation, power window operates in the reverse direction.
- Power window serial link transmits the signals from power window main switch to each power window switch.
- AUTO UP/DOWN operation can be performed when front power window switch turns to AUTO.

#### POWER WINDOW AUTO-OPERATION

- AUTO UP/DOWN operation can be performed when each power window motor 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.

#### POWER WINDOW SERIAL LINK

Power window main switch, front power window switch (passenger side), rear power window switch and BCM transmit and receive the signal by power window serial link.

#### SYSTEM

#### < SYSTEM DESCRIPTION >

The signal mentioned below is transmitted from BCM to power window main switch, front power window switch (passenger side) and rear power window switch.

- Keyless power window down signal
- Door switch signal

The signal mentioned below is transmitted from power window main switch to front power window switch (passenger side) and rear power window switch.

- Front passenger side door window and rear door window operation signal
- Power window control by door key cylinder switch signal
- Power window lock switch signal
- Retained power operation signal

#### 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 again.
- When timer time passes. (45 seconds)

#### POWER WINDOW LOCK FUNCTION

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

#### ANTI-PINCH OPERATION

- Anti-pinch foreign lowers door glass 150 mm (5.9 in) when foreign material is pinched in door glass during AUTO-UP operation.
- 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 door glass for 150 mm (5.9 in) 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.

#### DOOR KEY CYLINDER SWITCH OPERATION

Hold the door key cylinder to the LOCK or UNLOCK direction for 1.5 seconds or more to OPEN or CLOSE all 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 1.5 seconds or more to perform CLOSE operation of the door
- Hold door key cylinder to UNLOCK position for 1.5 seconds or more to perform OPEN operation of the door glass.

#### KEYLESS POWER WINDOW DOWN FUNCTION

All power windows open when the unlock button on Intelligent Key is activated and kept pressed for more than 3 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.

Keyless power window down operation mode can be changed by "PW DOWN SET" mode in "WORK SUP-PORT". Refer to DLK-38, "INTELLIGENT KEY: CONSULT Function (BCM - INTELLIGENT KEY)".

#### NOTE:

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#### **SYSTEM**

#### < SYSTEM DESCRIPTION >

Use CONSULT to change settings.
MODE 1 (3 sec) / MODE 2 (OFF) / MODE 3 (5 sec)

Fail-safe

#### **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 a signal that is out of the specified value is detected between the fully closed position and the actual position of the glass.

Malfunction	Malfunction condition
Pulse sensor malfunction	When one pulse signal that is the specified value or more is detected continuously for the specified time or more, while door glass is being operated UP or DOWN.
Both pulse sensors mal- function	When both pulse signals are not detected continuously for the specified time or more, while door glass is being operated UP or DOWN.
Pulse direction malfunction	When a pulse signal indicating that window is moving in the opposite direction against the power window motor is detected for the specified value or more, while door glass is being operated UP or DOWN.
Glass recognition position malfunction 1	When the actual door glass position that is out of specified value is detected compared to the door glass fully closed position memorized in module, while door glass is being operated UP or DOWN.
Glass recognition position malfunction 2	When pulse count that is out of the door glass full stroke value or more is detected, while door glass is being operated UP or DOWN.

If fail-safe control, the system changes to a non-initialized condition and the following function do not operate.

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

When fail-safe control is activated, perform initialization procedure to recover. If a malfunction is detected in power window switch or more, fail-safe control is activated again.

# **DIAGNOSIS SYSTEM (BCM)**

#### < SYSTEM DESCRIPTION >

# **DIAGNOSIS SYSTEM (BCM)**

**COMMON ITEM** 

COMMON ITEM: CONSULT Function (BCM - COMMON ITEM)

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#### APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description		
Work Support	Changes the setting for each system function.		
Self Diagnostic Result	Displays the diagnosis results judged by BCM.		
CAN Diag Support Monitor	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  • Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.			

#### SYSTEM APPLICATION

BCM can perform the following functions for each system.

#### NOTE:

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

x: Applicable item

System	Sub system selection item	Diagnosis mode			
System	Sub system selection item	Work Support	Data Monitor	Active Test	
Door lock	DOOR LOCK	×	×	×	
Rear window defogger	REAR DEFOGGER		×	×	
Warning chime	BUZZER		×	×	
Interior room lamp timer	INT LAMP	×	×	×	
Exterior lamp	HEAD LAMP	×	×	×	
Wiper and washer	WIPER	×	×	×	
Turn signal and hazard warning lamps	FLASHER	×	×	×	
_	AIR CONDITONER*		×	×	
<ul><li>Intelligent Key system</li><li>Engine start system</li></ul>	INTELLIGENT KEY	×	×	×	
Combination switch	COMB SW		×		
Body control system	ВСМ	×			
IVIS - NATS	IMMU	×	×	×	
Interior room lamp battery saver	BATTERY SAVER	×	×	×	
Trunk lid open	TRUNK		×		
Vehicle security system	THEFT ALM	×	×	×	
RAP system	RETAINED PWR		×		
Signal buffer system	SIGNAL BUFFER		×	×	
_	AIR PRESSURE MONITOR*	×	×	×	

<sup>\*:</sup> This item is not used.

#### FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT.

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# **DIAGNOSIS SYSTEM (BCM)**

#### < SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description		
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected		
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected		
	SLEEP>LOCK		While turning BCM status from low power consumption mode to normal mode (Power supply position is "LOCK"*)	
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode (Power supply position is "OFF".)	
	LOCK>ACC		While turning power supply position from "LOCK" *to "ACC"	
	ACC>ON		While turning power supply position from "ACC" to "IGN"	
	RUN>ACC		While turning power supply position from "RUN" to "ACC" (Vehicle is stopping and selector lever is except P position.)	
	CRANK>RUN		While turning power supply position from "CRANKING" to "RUN" (From cranking up the engine to run it)	
	RUN>URGENT		While turning power supply position from "RUN" to "ACC" (Emergency stop operation)	
	ACC>OFF		While turning power supply position from "ACC" to "OFF"	
	OFF>LOCK	Power position status of the moment a particular DTC is detected*	While turning power supply position from "OFF" to "LOCK"*	
Vehicle Condition	OFF>ACC		While turning power supply position from "OFF" to "ACC"	
	ON>CRANK		While turning power supply position from "IGN" to "CRANKI	
	OFF>SLEEP		While turning BCM status from normal mode (Power supply position is "OFF".) to low power consumption mode	
	LOCK>SLEEP		While turning BCM status from normal mode (Power supply position is "LOCK"*.) to low power consumption mode	
	LOCK		Power supply position is "LOCK" (Ignition switch OFF with steering is locked.)*	
	OFF		Power supply position is "OFF" (Ignition switch OFF with steering is unlocked.)	
	ACC		Power supply position is "ACC" (Ignition switch ACC)	
	ON		Power supply position is "IGN" (Ignition switch ON with engine stopped)	
	ENGINE RUN		Power supply position is "RUN" (Ignition switch ON with engine running)	
	CRANKING		Power supply position is "CRANKING" (At engine cranking)	
IGN Counter	0 - 39	<ul> <li>The number of times that ignition switch is turned ON after DTC is detected</li> <li>The number is 0 when a malfunction is detected now.</li> <li>The number increases like 1 → 2 → 338 → 39 after returning to the normal condition whenever ignition switch OFF → ON.</li> <li>The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.</li> </ul>		

#### NOTE:

- \*: Power supply position shifts to "LOCK" from "OFF", when ignition switch is in the OFF position, selector lever is in the P position, and any of the following conditions are met.
- Closing door
- Opening door
- · Door is locked using door request switch
- Door is locked using Intelligent Key

The power supply position shifts to "ACC" when the push-button ignition switch (push switch) is pushed at "LOCK".

#### **RETAIND PWR**

RETAIND PWR: CONSULT Function (BCM - RETAINED PWR)

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Data monitor

# **DIAGNOSIS SYSTEM (BCM)**

# < SYSTEM DESCRIPTION >

Monitor Item	Description
DOOR SW-DR	Indicates [ON/OFF] condition of driver side door switch.
DOOR SW-AS	Indicates [ON/OFF] condition of passenger side door switch.

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# **BCM (BODY CONTROL MODULE)**

< ECU DIAGNOSIS INFORMATION >

# **ECU DIAGNOSIS INFORMATION**

# BCM (BODY CONTROL MODULE)

List of ECU Reference

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ECU	Reference
	BCS-37, "Reference Value"
BCM	BCS-57, "Fail-safe"
BCIVI	BCS-58, "DTC Inspection Priority Chart"
	BCS-59, "DTC Index"

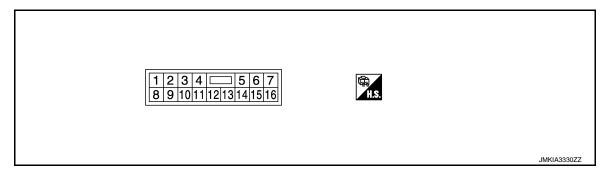
## **POWER WINDOW MAIN SWITCH**

# < ECU DIAGNOSIS INFORMATION >

# **POWER WINDOW MAIN SWITCH**

Reference Value

**TERMINAL LAYOUT** 



# PHYSICAL VALUES

Terminal No. (wire color) Description			Condition	Voltage [V]		
+	-	Signal name	Input/ Output	Condition	(Approx.)	
3 (B)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates.	12	
4 (Y)	Ground	Battery power supply	Input	_	12	
5 (G)	Ground	Front power window motor (driver side) DOWN signal	Output	When front LH switch in power window main switch is operated DOWN	12	
6 (L)	Ground	Front power window motor (driver side) UP signal	Output	When front LH switch in power window main switch is operated UP	12	
7 (B)	Ground	Ground	_	_	0	
				ignition switch ON	12	
9	Ground	Retained power signal	Input	Within 45 second after ignition switch is turned to OFF	12	
(O)				When driver side or pas- senger side door is opened during retained power operation	0	
10 (LG)	Ground	Encoder ground	_	_	0	
11 (P)	Ground	Encoder signal 1	Input	When power window motor operates.	(V) 6 4 2 0 10 ms  JMKIA0070GB	

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#### **POWER WINDOW MAIN SWITCH**

#### < ECU DIAGNOSIS INFORMATION >

	inal No. color)	Description		Condition	Voltage [V]
+	-	Signal name	Input/ Output	Condition	(Approx.)
12 (LG)	Ground	Encoder signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms
13 (W)	Ground	Power window serial link	Input/ Output	Ignition switch ON or power window timer operating.	(V) 15 10 5 0 10 ms JPMIA0013GB
15 (R)	Ground	Door key cylinder switch LOCK signal	Input	Key position (Neutral →Locked)	5 → 0
16 (G)	Ground	Door key cylinder switch UN- LOCK signal	Input	Key position (Neutral →Unlocked)	5 → 0

Fail-safe

#### **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 a signal that is out of the specified value is detected between the fully closed position and the actual position of the glass.

Malfunction	Malfunction condition
Pulse sensor malfunction	When one pulse signal that is the specified value or more is detected continuously for the specified time or more, while door glass is being operated UP or DOWN.
Both pulse sensors mal- function	When both pulse signals are not detected continuously for the specified time or more, while door glass is being operated UP or DOWN.
Pulse direction malfunction	When a pulse signal indicating that window is moving in the opposite direction against the power window motor is detected for the specified value or more, while door glass is being operated UP or DOWN.
Glass recognition position malfunction 1	When the actual door glass position that is out of specified value is detected compared to the door glass fully closed position memorized in module, while door glass is being operated UP or DOWN.
Glass recognition position malfunction 2	When pulse count that is out of the door glass full stroke value or more is detected, while door glass is being operated UP or DOWN.

If fail-safe control, the system changes to a non-initialized condition and the following function do not operate.

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

When fail-safe control is activated, perform initialization procedure to recover. If a malfunction is detected in power window switch or more, fail-safe control is activated again.

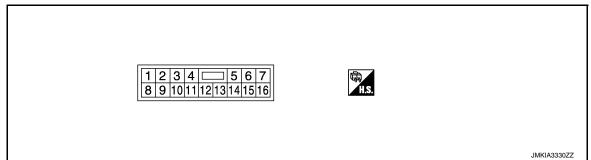
# FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

< ECU DIAGNOSIS INFORMATION >

# FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

Reference Value

#### **TERMINAL LAYOUT**



#### PHYSICAL VALUES

	nal No. color)	Description		Condition	Voltage [V]
+	-	Signal name	Input/ Output	Condition	(Approx.)
3 (LG)	Ground	Encoder ground	_	_	0
4 (B)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates	12
8 (L)	Ground	Front power window motor (passenger side) UP signal	Output	When front power window motor (passenger side) is operated UP	12
9 (G)	Ground	Front power window motor (passenger side) DOWN signal	Output	When front power window motor (passenger side) is operated DOWN	12
10 (GR)	Ground	Battery power supply	Input	_	12
11 (B/W)	Ground	Ground	_	_	0
12 (P)	Ground	Encoder signal 1	Input	When power window motor operates	(V) 6 4 2 0 10 ms JMKIA0070GB

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# FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

#### < ECU DIAGNOSIS INFORMATION >

_		nal No. color)	Description		Condition	Voltage [V]
	+	-	Signal name	Input/ Output	Condition	(Approx.)
	15 (O)	Ground	Encoder signal 2	Input	When power window motor operates	(V) 6 4 2 0 10 ms JMKIA0070GB
	16 (V)	Ground	Power window serial link	Input/ Output	When ignition switch ON or power window timer operates	(V) 15 10 5 0 10 ms JPMIA0013GB

Fail-safe

#### **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 a signal that is out of the specified value is detected between the fully closed position and the actual position of the glass.

Malfunction	Malfunction condition
Pulse sensor malfunction	When one pulse signal that is the specified value or more is detected continuously for the specified time or more, while door glass is being operated UP or DOWN.
Both pulse sensors mal- function	When both pulse signals are not detected continuously for the specified time or more, while door glass is being operated UP or DOWN.
Pulse direction malfunction	When a pulse signal indicating that window is moving in the opposite direction against the power window motor is detected for the specified value or more, while door glass is being operated UP or DOWN.
Glass recognition position malfunction 1	When the actual door glass position that is out of specified value is detected compared to the door glass fully closed position memorized in module, while door glass is being operated UP or DOWN.
Glass recognition position malfunction 2	When pulse count that is out of the door glass full stroke value or more is detected, while door glass is being operated UP or DOWN.

If fail-safe control, the system changes to a non-initialized condition and the following function do not operate.

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

When fail-safe control is activated, perform initialization procedure to recover. If a malfunction is detected in power window switch or more, fail-safe control is activated again.

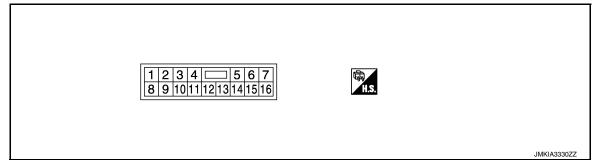
## **REAR POWER WINDOW SWITCH**

## < ECU DIAGNOSIS INFORMATION >

# REAR POWER WINDOW SWITCH

Reference Value

## **TERMINAL LAYOUT**



#### PHYSICAL VALUES

_	ninal No. e color)	Description		Condition	Voltage [V]
+	-	Signal name	Input/ Output	Condition	(Approx.)
3 (BR)	Ground	Encoder ground	_	_	0
4 (V)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates	12
8 (P)	Ground	Rear power window motor UP signal	Output	When rear power window motor is operated UP	12
9 (G)	Ground	Rear power window motor DOWN signal	Output	When rear power window motor is operated DOWN	12
10 (P)	Ground	Battery power supply	Input	_	12
11 (B)	Ground	Ground	_	_	0
12 (W)	Ground	Encoder signal 1	Input	When power window motor operates	(V) 6 4 2 0 10 ms JMKIA0070GB

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#### REAR POWER WINDOW SWITCH

#### < ECU DIAGNOSIS INFORMATION >

	ninal No. e color)	Description		Condition	Voltage [V]
+	-	Signal name	Input/ Output	Condition	(Approx.)
15 (O)	Ground	Encoder signal 2	Input	When power window motor operates.	(V) 6 4 2 0 10 ms
16 (LG)	Ground	Power window serial link	Input/ Output	When ignition switch ON or power window timer operates	(V) 15 10 5 0 10 ms JPMIA0013GB

Fail-safe

#### **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 a signal that is out of the specified value is detected between the fully closed position and the actual position of the glass.

Malfunction	Malfunction condition
Pulse sensor malfunction	When one pulse signal that is the specified value or more is detected continuously for the specified time or more, while door glass is being operated UP or DOWN.
Both pulse sensors mal- function	When both pulse signals are not detected continuously for the specified time or more, while door glass is being operated UP or DOWN.
Pulse direction malfunction	When a pulse signal indicating that window is moving in the opposite direction against the power window motor is detected for the specified value or more, while door glass is being operated UP or DOWN.
Glass recognition position malfunction 1	When the actual door glass position that is out of specified value is detected compared to the door glass fully closed position memorized in module, while door glass is being operated UP or DOWN.
Glass recognition position malfunction 2	When pulse count that is out of the door glass full stroke value or more is detected, while door glass is being operated UP or DOWN.

If fail-safe control, the system changes to a non-initialized condition and the following function do not operate.

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

When fail-safe control is activated, perform initialization procedure to recover. If a malfunction is detected in power window switch or more, fail-safe control is activated again.

#### POWER WINDOW SYSTEM < WIRING DIAGRAM > WIRING DIAGRAM Α POWER WINDOW SYSTEM Wiring Diagram INFOID:0000000012353981 В REAR POWER WINDOW MOTOR LH (D52) REAR POWER WINDOW MOTOR RH (D72) FRONT POWER WINDOW MOTOR (PASSENGER SIDE) (D40) ENCODER ENCODER \$ \$ С (B204) D D38 (B) **D**48 **\***(D48) **K**640 Е REAR POWER WINDOW SWITCH RH (D74) FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (D50) REAR POWER WINDOW SWITCH LH (D54) MODULE MODULE F ILLUMI-NATION ILLUMI-NATION ILLUMI-NATION Н 12 8 42 FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) (DOOR KEY CYLINDER SWITCH) (D15) B218 B18 BETWEEN FULL STROKE AND N 21 97 ★: This connector is not shown in "Harness Layout" <u>M</u> M117 J BETWEEN FULL STROKE AND N FRONT POWER WINDOW MOTOR (DRIVER SIDE) ENCODER 9 K \$ PCB HARNESS (M22), (M30) PWC L 8 8 ā (2) REWOTE KEYLESS ENTRY RECEIVER (M104) **(**610) 13 4 5 13 M **D**18 \*610

**PWC-21** 2016 Q70 **Revision: September 2015** 

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(a) \*E

[<u>a</u>

POWER WINDOW

MODULE

ILLUMI-NATION

POWER WINDOW MAIN SWITCH (D22)

2014/07/11

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3/ BCM (BODY CONTROL MODULE) (M120) · (M121) · (M122) · (M123)

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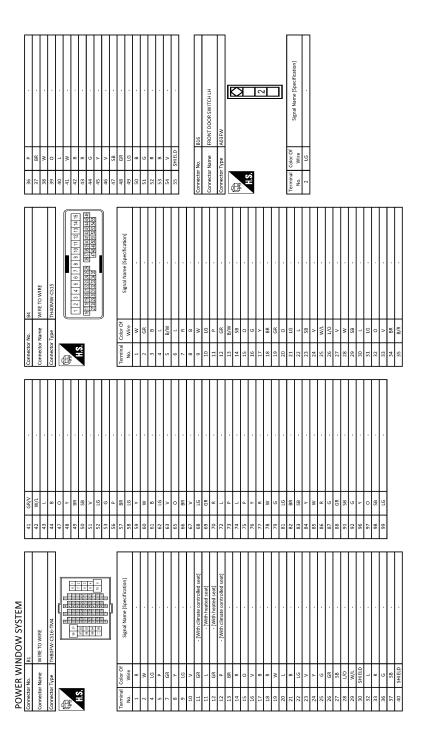
PCB HARNESS (M30) 411

M6 M221 E106

FUSE BLOCK (J/B) (M1)

POWER WINDOW SYSTEM

BATTERY



JRKWF4839GB

15   CF   19   19   CF   19   CF   19   CF   19   19   19   19   19   19   19   1	. : (With climate controlled sent)	
15		
18		
18   86		
19   284		
1   22   CR   CR   CR   CR   CR   CR   CR		
1   21   V   V   V   V   V   V   V   V   V		
1		
7   23   GR		. ·
7   2.2		
7   24   V		>
1		88
25		No.
256 W		
28    V   Separation   Separa		. ·
238   V		
13   15   17   18   18   18   18   18   18   18		
10		
31   8/R		SHIELD
31   8/R		
10   10   10   10   10   10   10   10		
10   SMEED   1   1   1   1   1   1   1   1   1		ď
41   W/R     1   1   1   1   1   1   1   1   1		
41 W/R   .		
45   54   1.05	37	B/R
45   59   167	- 38	
46	2	
46	G F	2, 4
46   Y   With heated seal   100   Y     48   Y   GR	66	
47   GR	- 44	. · · · · · · · · · · · · · · · · · · ·
487   GR	46	
448 V Connector No. 181  54 R V Connector No. 181  55 R R Connector No. 181  56 R Connector No. 181  57 R Connector No. 181  58 P Connector No. 181  58 P Connector No. 181  58 V Connector No. 181  59 V V Connector No. 181  50 V V Connector No. 181  50 V V Connector No. 181  50 V V V V V V V V V V V V V V V V V V V	65	
10   10   10   10   10   10   10   10		
10   10   10   10   10   10   10   10		
Si	WIRE TO WIRE	
SS   GR   Commetter Type   The SS   The SS		
Size   Lice	TH40MW-CS15	
Size   P	Connector No.	No. R218
150   150		Т
18   19   19   19   19   19   19   19	Connector Name	Vame WIRE TO WIRE
SS	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	T
1   1   1   1   1   1   1   1   1   1	Connector Type	Pype NH10FW-CS10
1970   1970	301313013013111111111111111111111111111	
51   58	2/12/2/3/3/3/3/3/3/3/3/3/3/3/3/3/3/3/3/3	
62         L         .         Tremnal Cote Of Each	事	
63         L         .         Terminal Cate of Parameter           64         SB         .         No.         Wire           65         L         .         2         B/W           66         L         .         9         W           67         Y         .         9         R           70         B         .         9         R           71         B         .         11         V           72         L         .         12         Y           74         B         B         .         13         B           74         B         B         .         14         16		0 5 4 3 2 1
63         W         .         Terminal Color Of Incomo	Ġ L	]
No. 10   N		
654         538          00.0.           665         1.0          2         2           667         1.0          3         6         3         6         3         6         3         6         3         6         3         6         3         6         3         6         3         6         3         6         3         3         6         3	Signal Name [Specification]	13 12 11 10 9
665 ILG		8 1 6 07
1   1   3   3   5   5   5   5   5   5   5   5	•	
7		
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0.000	. No.	Wire
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	20 1	- d S	91 9		١	Connector No. D15	Connector Mama CPONT DOOR LOCK ASSEMBLY (DBIVER SIDE)		Connector Type E06FGY-RS	Œ			(123456)			Terminal Color Of	No. Wire Signal Name [Specification]	1 Р	, [G	A 00	2 00	. 9		- 1	Connector No. D18	Connector Name WIRE TO WIRE	Connector Type TH24MW-NH	1				13 14 15 16 17 18 19 20 21 22 23 24			) le	No. Wire		7 V/W	┥	9 V/B	11 V/W	╀	13 LG .	ŀ
ŀ		+	+	$\dashv$	20 SB -	21 R -	23 B .	24 SB -		Connector No		Connector Name WIRE TO WIRE	Connector Type NS08FW-CS	á		H.S. 3 2 1	8 7 6 5 4			Tarminal Color Of	No. Wire Signal Name [Specification]	H	3 0	4 B/W	+	9 :	- 42	$\frac{1}{2}$		Connector No. D10	Connector Name FRONT POWER WINDOW MOTOR (DRIVER SIDE)	Connector Type NS06FW-CS					3 4 5 6			Transfer Order Of	No. Wire Signal Name [Specification]	۲	2 1 -	(
ŀ	90 ::	+	+	33 BR -	34 L	35 P -	36 v .	37 GR -	+	39 W	+	╁	43 R	$\dashv$	45 16 .	+	48 Y	Н	50 B/W	+	53 B/W	H	SS SHIELD		ſ	Connector No. D8	Connector Name WIRE TO WIRE	Connector Type TH24FW-NH	4	<b>7</b>	1.5		2423222171201191811/11611511413			Te I	No. Wire	4 P	+	> (	+	L	H	L
쌂	+	+		12 Y .	13 B .			Connector No. D1	Connector Name WIRE TO WIRE	Connector Two THARM-CS15	1		15 14 13 12 11 10 9 8 7 6 5 4 3 2 1					lal	No. Wire	***	) a	4 L	S B .	. 1 9	+	+	20 00	+	Н	13 B/W -	14 ×	+	17 Y .	18 BR -	Н	+	+	+	4	24 8	25 L : : : : : : : : : : : : : : : : : :	27 V -	28 W -	H

JRKWF4841GB

1	11   1   1   1   1   1   1   1   1	» -	
15   16	11   15   15   15   15   15   15   15	- × -	
1	11   12   13   14   15   15   15   15   15   15   15	M -	
1   1   1   1   1   1   1   1   1   1	13		
13   14   15   15   15   15   15   15   15	13   16   15   16   15   16   17   16   17   16   17   16   17   16   17   16   17   16   17   16   17   16   17   16   17   17	,	1
13   W   10   10   10   10   10   10   10	13   W     15   W     16   W     17   W     17   W     18   W     18   W     19   W     19   W     10   W     10   W     10   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     19   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   G     17   W     18   W     19   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     19   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     19   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     19   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     19   W     19   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     19   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     18   W     19   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     18   W     19   W     10   W     10   W     11   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     18   W     19   W     10   W     10   W     10   W     10   W     11   W     12   W     13   W     14   W     15   W     15   W     16   W     17   W     18   W     19   W     10   W     10   W     11   W     12   W     13   W     14   W     15   W	Ь	4
15   6   10 DOD NET CYTUNIDES WATCH LONG SWITCH AND CASE OF	D193   D194   D195	38	<b>B</b>
Main   Common   Com	15   6	33	
1   2   1   2   2   2   2   2   2   2	D193   WIRE TO WIRE   Connector No.   Connec	44	0 1
10   10   10   10   10   10   10   10	Orange of the connector Name	46	ন
Mail of Mail	WIRE TO WIRE   Connector Name   PostBAMW.cs	H	7
	VIVEE TO WINE   VIVEE TO WINE   1   2	╀	
Signature   Secretarion   Se	Connector Name   Connector Name   Visibahuv.cs   Connector Name   Visibahuv.cs   Connector Name   Visibahuv.cs   Connector Name   Visibahuv.cs   Color Of   Color O	ł	
	Of Signal Name [Specification]  OSSERVICE  OD22  POWER WINDOW MAIN SWITCH  DD22  POWER WINDOW MAIN SWITCH  DD23  POWER WINDOW MAIN SWITCH  DD24  POWER WINDOW MAIN SWITCH  DD25  POWER WINDOW MAIN SWITCH  DD27  POWER WINDOW	ł	Color Of
	Of Signal Name (Specification)	T	
1   2   3   4   5   5   8   8   9   9   9   9   9   9   9   9	Of Signal Name (Specification)  No. Wire  No.	ı	t
1 2   2   3   4   5   7   8   9   9   7   6   6   1   2   1   2   1   2   1   2   1   3   9   9   7   6   6   1   2   1   3   9   9   9   9   9   9   9   9   9	Of Signal Name (Specification)	١	+
	4   5   7   8	Connector Name	-
	Of Signal Name (Specification)		
Freminal Color Of Signal Name   Specification	Signal Name [Specification]   Terminal Color Of No. Wive No. Wiv	Connector Type	
Control   Signal Name   Specification   No.   Wire   No.   Wire   Signal Name   Specification   No.   Wire   Signal Name   No.	Signal Name (Specification)   Terminal Color Of No. Whe   2 m 8	_	
Signal Name   Specification	Signal Name [Specification   100		Γ
Figure   Signal Name   Specification   No.   Wine   Signal Name   Specification   Specification   Signal Name   Specification   Specification   Spec	Signal Name [Specification]   No.   Wire	事	Connector Name FRONT POWER WINDOW MOTOR (PASSENGER SIDE)
Signal Name (Specification   Name (Name (Nam	Terminal Color Of		7
Month   Color   Colo	Monitor   Color of Monitor   C	] 	
1	No. Wire	7 6 5	
1	DD2	0	<b>₫</b>
1	D22  D22  D23  D24  D25  D27  D27  D28  D3 4		- The state of the
12   12   13   14   15   15   15   15   15   15   15	DD2	T	
1	D22  10  11  11  11  12  12  13  14  18  18  18  18  19  10  11  11  11  11  11  11  11  12  12		_
10	10   10   10   10   10   10   10   10	Color Of	
11   1   6	11   11   12   13   14   15   16   17   17   17   17   18   18   18   18	Wire	
11   1   1   1   1   1   1   1   1	11   12   13   15   15   15   15   15   15   15	ł	
D22	12   12   13   14   15   15   15   15   15   15   15	,	
13   8   7   1   1   1   1   1   1   1   1   1	13   13   15   15   15   15   15   15	,	
D22   POVER WINDOW MAIN SWITCH   12 G	13   14   15   15   17   18   19   19   19   19   19   19   19	>	Color Of
D22	DOWER WINDOW MAIN SWITCH   15   15   15   15   15   15   15   1	_	Wire
MONGRAWINDOW WANN SWITCH   15 SS	15   16   17   17   18   19   19   19   19   19   19   19	H	
POWTRWINDOW MAIN SWITCH   156 G   6 m   15 G   6 m   15 G   15	POWER WINDOW MAIN SWITCH   16	- 16	
NSS.167 Nr. Sa.   NSS.167 Nr	NS.1679.CS   17   18   18   19   19   19   19   19   19	╀	ł
18   8R	18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	┨	ł
	3 4 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1	+
	S		+
3 4     5 6 7   21   22   22   23   24   24   24   24   24	3 4   5 6 7 20 21 22 22 23 23 24 24 24 24 24 24 24 24 24 24 24 24 24		
3   4     5   6   7   22     9   10   11   12   13   15   16   23     24   24   25     25   24   25     26   27   27     27   28     28   29   20   20     29   20   20     20   20   20     20   20	3 4     5 6 7   21   22   22   22   23   23   24   24   24		
9   10   11   12   13   15   16   22   23   24   24   24   24   24   24	9 10 11 12 13 15 16 22 23 24 24 25 25 25 25 26 26 26 26 26 26 26 26 26 26 26 26 26	I	
9   10   11   12   13   15   16   22   24   25   25   25   25   25   25	9   10   11   12   13   15   16   23   24   24   25   25   25   25   25   25	1	
23  Signal Name [Specification]  ENCODER POWER SUPPLY  ENTER POWER SUPPLY  ENTER POWER SUPPLY  ENTER POWER SUPPLY  ENTER POWER SUPPLY  30  31  32  33	23 24 25 Signal Name (Specification) 27 26 27		
24 25 Signal Name (Specification) 26 Signal Name (Specification) 27 ENCODER POWER SUPPIY 28 THORITY WARRA WARRA SUPPIY 30 31	24 25 25 25 25 25 26 27 27 27 27 27 27 27 27 27 27 27 27 27		
25	25 Signal Name (Specification) 27 27		
Signal Name (Specification) 26 EMCODER POWER SUPPLY 29 BATTERY POWER SUPPLY 29 RIOUT POWER WINDOW MOTHS REPRESENCE AS THE POWER SUPPLY 39	Signal Name [Specification] 27		
Signal Name (Specification) 27 Signal Name (Specification) 27 ENCODER POWER SUPPLY 28 RROHT POWER SUPPLY 29 RROHT POWER NAMOOW ACTION REMORE SUPPLY 30	Signal Name (Specification) 27		
B			
ENTITOR   SUPERIOR		I	
Y BATTERY POWER SUPPLY 29  G FRONT POWER WINDOW MOTOR (DRIVER SIDE) DOWN SIGNAL 30	B ENCODER POWER SUPPLY 28	1	
G FRONT POWER WINDOW MOTOR (DRIVER SIDE) DOWN SIGNAL 30	Y BATTERY POWER SUPPLY 29		
	G FRONT POWER WINDOW MOTOR (DRIVER SIDE) DOWN SIGNAL		
1 COONT BOUND WINDOW MAND CIDED IN SIGNAL	1 COONT BOUND WINDOW MAND CIDED IN SIGNAL	Τ	
L TACHEL POWER WINDOW MOTOR (DAVER SIDE) OF SIGNAL 31	L TACHEL POWER WINDOW MOTOR (DAVER SIDE) OF SIGNAL 31	1	

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Connector No. D71		HIOWW.5310	7 8 9 10 11 12 13 19 20 14 15 16 17 18 19 20	Terminal Color Of Signal Name [Specification] No. Wire	1 BR -		V 4	7 B .	+		+	Н	13 8		$\neg$	- 1	Connector Type RS06FG-DGY	Œ	HS.	4 5 6			le l	No. Wire		9	4 BR	s w	. 0 9			
Connector No.   D52		Connector Type ISSORFIC-DGY	<u> </u>	Terminal Color Of Signal Name [Specification] No.	1 P		2 88	5 W	- 0 9		Connector No. D54	Connector Name REAR POWER WINDOW SWITCH LH	Connector Type NS16FW-CS	1	E	3 4	8 9 10 11 12   15 16		Terminal Color Of Clans Name (Spacification)	No. Wire Ognaria ratio promised on 1	- N	8 FRONT POWER WINDOW MOTOR UP SIGNAL	G FRONT PO	10 P BATTERY POWER SUPPLY	M ENO	0	MOA FOM					
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MATS   SECURITY   MATS	Connector No.   M122   M122   M124   M124	DBIVER DOOR ANT- PASSENGER DOOR ANT+ Connector Name (WIRE TO WIRE	Т	The state of the s	BOOM ANTI-		ROOM ANTI-	ROOM ANTZ+	ROOM ANT2-	TRUNK ROOM ANT+	TRUNK ROOM ANT-	BMd III MIS NEI	Terminal Color Of	ILL GND No.	I-KEY WARN BUZZER 1 W	ACC RELAY CONT 2 R	STARTER RELAY CONT 3 Y .	IGN RELAY (IPDM E/R) CONT	IGN RELAY (F/B) CONT	PASS DOOR REQ SW	P/N POSITION	A/T SHIFT SELECT PWR SPLY	STOP LAMP SW 2	BLWR RELAY CONT	ACCIND	RECEIVER PWR SPLY			M221	WIRE TO WIRE	MODERA IC	IMUST W-LC				0	70			Crimal Manua (Canadan)							
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	Estat No.	SECURITY IND CONT DONGLE LINK	NATS ANT AMP.  I-KEY IDENTIFICATION	HAZABD SW	TRILID ODNIB SW	IK LID OPINK SW	DR DOOR UNLK SENSOR	COMBI SW OUTPUT 5	COMBI SW OUTPUT 4	COMBI SW OUTPUT 3	COMBLSW QUTPUT 2	COMBI SW OUTPUT 1	NOILISON	CAN-H	CAN-L			M121	(SILIGODI MODINE)	Scin (Social continuor modern)	FEA09FB-FHA6-SA			W	-	23					W.S GENTLY COLUMN	TRUNK LID OPEN/CLOSE STATUS	TR LID OP CANCEL SW	PASSENGER DOOR SW	REAR RH DOOR SW	DRIVER DOOR SW	REAR LH DOOR SW	TR ROOM LAMP CONT	TR LID OPEN REQ SW	TRUNK LID OPEN REQUEST	RR DOOR UNLK OUTPUT						

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#### **DIAGNOSIS AND REPAIR WORK FLOW**

# < BASIC INSPECTION > **BASIC INSPECTION** Α DIAGNOSIS AND REPAIR WORK FLOW Work Flow INFOID:0000000012353982 **DETAILED FLOW** ${f 1}$ . OBTAIN INFORMATION ABOUT SYMPTOM Interview the customer to obtain as much malfunction information (conditions and environment when the malfunction occurred) as possible when the customer brings the vehicle in. D >> GO TO 2. 2.REPRODUCE THE MALFUNCTION INFORMATION Е Check the malfunction on the vehicle that the customer describes. Inspect the relation of the symptoms and the condition when the symptoms occur. F >> GO TO 3. ${f 3.}$ IDENTIFY THE MALFUNCTIONING SYSTEM WITH "SYMPTOM DIAGNOSIS" Use "Symptom diagnosis" from the symptom inspection result in step 2. Then identify where to start the diagnosis based on possible causes and symptoms. Н >> GO TO 4. f 4.IDENTIFY MALFUNCTIONING PARTS WITH "DTC/CIRCUIT DIAGNOSIS" Perform the diagnosis with "DTC/CIRCUIT DIAGNOSIS" of the applicable system. >> GO TO 5. J 5.REPAIR OR REPLACE THE MALFUNCTIONING PARTS Repair or replace the specified malfunctioning parts. **PWC** >> GO TO 6. 6.FINAL CHECK Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 2. M

Is the malfunctioning part repaired or replaced?

YES >> Trouble diagnosis is completed.

NO >> GO TO 3.

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**PWC-31 Revision: September 2015** 2016 Q70

#### ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

< BASIC INSPECTION >

# ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

Description INFOID:000000012353983

Initialize the system if any of the following work has been done.

- · When control unit replaced.
- Electric power supply to power window switch or motor is interrupted by blown fuse or disconnection and connection of the negative terminal of battery, etc.
- Removal and installation of regulator assembly.
- Power supply to the power window main switch or power window motor is cut off by the removal of battery terminal or if the battery fuse is blown.
- Disconnection and connection of power window main switch harness connector.
- · Removal and installation of motor from regulator assembly.
- · Operation of regulator assembly as an independent unit.
- · Removal and installation of door glass.
- · Removal and installation of door glass run.

#### **CAUTION:**

The following specified operations cannot be performed under the non-initialized condition.

- Auto-up operation
- Anti-pinch function

Refer to PWC-32, "Work Procedure".

Work Procedure

INFOID:0000000012353984

# 1. SYSTEM INITIALIZATION

Perform system initialization. Refer to PWC-34, "Description".

>> GO TO 2.

# 2. CHECK ANTI-PINCH FUNCTION

Check anti-pinch function. Refer to PWC-35, "Description".

>> END

#### ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

## < BASIC INSPECTION > ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT Α Description INFOID:0000000012353985 Initialize the system if any of the following work has been done. В When control unit replaced. · Electric power supply to power window switch or motor is interrupted by blown fuse or disconnection and connection of the negative terminal of battery, etc. C · Removal and installation of regulator assembly. Power supply to the power window main switch or power window motor is cut off by the removal of battery terminal or if the battery fuse is blown. • Disconnection and connection of power window main switch harness connector. D Removal and installation of motor from regulator assembly. · Operation of regulator assembly as an independent unit. Removal and installation of door glass. Е Removal and installation of door glass run. **CAUTION:** The following specified operations cannot be performed under the non-initialized condition. Auto-up operation Anti-pinch function Refer to PWC-33, "Work Procedure". Work Procedure INFOID:0000000012353986 1.SYSTEM INITIALIZATION Perform system initialization. Refer to PWC-34, "Description". >> GO TO 2. 2.CHECK ANTI-PINCH FUNCTION Check anti-pinch function. Refer to PWC-35, "Description". >> END

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Revision: September 2015 PWC-33 2016 Q70

#### SYSTEM INITIALIZATION

Description INFOID:000000012353987

Initialize the system if any of the following work has been done.

- · When control unit replaced.
- Electric power supply to power window switch or motor is interrupted by blown fuse or disconnection and connection of the negative terminal of battery, etc.
- · Removal and installation of regulator assembly.
- Power supply to the power window main switch or power window motor is cut off by the removal
  of battery terminal or if the battery fuse is blown.
- Disconnection and connection of power window main switch harness connector.
- · Removal and installation of motor from regulator assembly.
- Operation of regulator assembly as an independent unit.
- · Removal and installation of door glass.
- · Removal and installation of door glass run.

#### **CAUTION:**

The following specified operations cannot be performed under the non-initialized condition.

- Auto-up operation
- Anti-pinch function

Refer to PWC-34, "Work Procedure".

Work Procedure

INFOID:0000000012353988

## **1.**STEP 1

- 1. Close the door.
- 2. Turn ignition switch ON.
- Operate power window switch to fully open the window. (This operation is unnecessary if the window is already fully open)

>> GO TO 2.

# 2.STEP 2

Continue pulling the power window switch UP (AUTO-UP operation). Even after glass stops at fully closed position, keep pulling the switch for 2 seconds or more.

>> GO TO 3.

# **3.**STEP 3

Check that auto-up function operates normally.

>> GO TO 4.

## **4.**STEP 4

Check anti-pinch function. Refer to PWC-35, "Description".

>> END

#### **CHECK ANTI-PINCH FUNCTION**

#### < BASIC INSPECTION >

## **CHECK ANTI-PINCH FUNCTION** Α Description INFOID:0000000012353989 Initialize the system if any of the following work has been done. В When control unit replaced. Electric power supply to power window switch or motor is interrupted by blown fuse or disconnection and connection of the negative terminal of battery, etc. · Removal and installation of regulator assembly. Power supply to the power window main switch or power window motor is cut off by the removal of battery terminal or if the battery fuse is blown. • Disconnection and connection of power window main switch harness connector. D Removal and installation of motor from regulator assembly. · Operation of regulator assembly as an independent unit. Removal and installation of door glass. Е Removal and installation of door glass run. **CAUTION:** The following specified operations cannot be performed under the non-initialized condition. Auto-up operation Anti-pinch function Refer to PWC-35, "Work Procedure". Work Procedure INFOID:0000000012353990 **1.**STEP 1 Fully open the door window. >> GO TO 2. 2.STFP 2 Place a piece of wood near fully closed position. >> GO TO 3. 3.STEP ${\mathfrak 3}$ **PWC** Close door glass completely with AUTO-UP. >> GO TO 4. **4**\_STEP 4 Check the following conditions M Check that glass lowers for approximately 150 mm (5.9 in) without pinching piece of wood and stops. Check that glass does not rise not when operating the power window main switch while lowering. **CAUTION:** N Perform initial setting when auto-up operation or anti-pinch function does not operate normally. • Check that AUTO-UP operates before inspection when system initialization is performed. • Never check with hands and other body parts because they may be pinched. Never get pinched. It may switch to fail-safe mode if open/close operation is performed continuously without full close. Perform initial setting in that situation. Refer to PWC-34, "Description". >> END Р

#### POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

# DTC/CIRCUIT DIAGNOSIS

# POWER SUPPLY AND GROUND CIRCUIT

**BCM** 

**BCM**: Diagnosis Procedure

INFOID:0000000012353991

## 1. CHECK FUSE AND FUSIBLE LINK

Check that the following fuse and fusible link are not blown.

Terminal No.	Signal name	Fuse and fusible link No.
57	Battery power supply	11 (10A)
70	Dattery power suppry	L (40A)

#### Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.

NO >> GO TO 2.

# 2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connectors.
- 3. Check voltage between BCM harness connector and ground.

E	(+) GCM	(-)	Voltage (Approx.)
Connector	Terminal		(πρριοχ.)
M122	57	Cround	Pottory voltage
IVI I Z Z	70	Ground	Battery voltage

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

# 3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

В	CM		Continuity
Connector	Terminal	Ground	Continuity
M122	67		Existed

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

## 4. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

#### >> INSPECTION END

## POWER WINDOW MAIN SWITCH

#### POWER WINDOW MAIN SWITCH: Diagnosis Procedure

INFOID:0000000012353992

# 1. CHECK POWER SUPPLY CIRCUIT 1

- Turn ignition switch OFF.
- 2. Disconnect power window main switch connectors.

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#### POWER SUPPLY AND GROUND CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

- Turn ignition switch ON.
- Check voltage between power window main switch harness connector and ground.

(+)			Voltage (V) (Approx.)	
Power window main switch		(–)		
Connector	Terminal			
D22	4	Cround	12	
UZZ	9	Ground	12	

#### Is the inspection result normal?

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

2.CHECK GROUND CIRCUIT

- Turn ignition switch OFF.
- Check continuity between power window main switch harness connector and ground.

Power window main switch			Continuity
Connector	Terminal	Ground	Continuity
D22	7		Existed

#### Is the inspection result normal?

>> GO TO 4. YES

NO >> Repair or replace harness.

### 3.CHECK POWER SUPPLY CIRCUIT 2

- Turn ignition switch OFF.
- Disconnect BCM connector.
- Check continuity between BCM harness connector and power window main switch harness connector.

В	CM	Power window main switch		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M122	68	D22	9	Existed
IVITZZ	69	DZZ	4	Existed

Check continuity between BCM harness connector and ground.

В	CM		Continuity
Connector	Terminal	Ground	Continuity
M122	68	Giouna	Not existed
	69		Not existed

#### Is the inspection result normal?

>> Replace BCM. Refer to BCS-95, "Removal and Installation". YES

NO >> Repair or replace harness.

#### 4. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

#### >> INSPECTION END

### FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

FRONT POWER WINDOW SWITCH (PASSENGER SIDE): Diagnosis Procedure

### 1. CHECK POWER SUPPLY CIRCUIT 1

1. Turn ignition switch OFF.

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INFOID:0000000012353993

#### POWER SUPPLY AND GROUND CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

- 2. Disconnect front power window switch (passenger side) connector.
- Check voltage between front power window switch (passenger side) harness connector and ground.

(+) Front power window switch (passenger side)		(-)	Voltage (V) (Approx.)
Connector	Connector Terminal		
D50	10	Ground	12

#### Is the inspection result normal?

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

### 2. CHECK GROUND CIRCUIT

Check continuity between front power window switch (passenger side) harness connector and ground.

Front power window switch (passenger side)			Continuity
Connector	Terminal	Ground	
D50	11		Existed

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

### 3.CHECK POWER SUPPLY CIRCUIT 2

- 1. Disconnect BCM connector.
- Check continuity between BCM harness connector and front power window switch (passenger side) harness connector.

В	ВСМ		Front power window switch (passenger side)	
Connector	Terminal	Connector	Terminal	
M122	69	D50	10	Existed

3. Check continuity between BCM harness connector and ground.

ВСМ			
Connector	Terminal	Ground	Continuity
M122	69		Not existed

#### Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-95. "Removal and Installation".

NO >> Repair or replace harness.

#### 4. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

#### >> INSPECTION END

#### REAR POWER WINDOW SWITCH

#### REAR POWER WINDOW SWITCH: Diagnosis Procedure

INFOID:0000000012353994

### 1. CHECK POWER SUPPLY CIRCUIT 1

- Turn ignition switch OFF.
- 2. Disconnect rear power window switch LH connector and rear power window switch RH connector.
- 3. Turn ignition switch ON.
- Check voltage between rear power window switch harnes connector and ground.

#### POWER SUPPLY AND GROUND CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

(+) Rear power window switch		(-)	Voltage (V) (Approx.)	
Coni	Connector Termina			(, tpp: 5/)
LH	D54	10	Ground	12
RH	D74	- 10	Ground	12

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 3.

### 2. CHECK GROUND CIRCUIT

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

Rear power window switch				Continuity	
Connector		Terminal	Ground	Continuity	
LH	D54	11	Ground	Existed	
RH	D74	11		Existed	

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

### 3.CHECK POWER SUPPLY CIRCUIT 2

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM connector.
- 3. Check continuity between BCM harness connector and rear power window switch harness connector.

В	СМ	Rear power window switch		Continuity	
Connector	Terminal	Connector		Terminal	Continuity
M122	69	LH	D54	10	Existed
101122	09	RH	D74	10	Existed

4. Check continuity between BCM harness connector and ground.

BCM			Continuity
Connector Terminal		Ground	Continuity
M122	69		Not existed

#### Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-95, "Removal and Installation".

NO >> Repair or replace harness.

#### 4. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

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#### < DTC/CIRCUIT DIAGNOSIS >

#### POWER WINDOW MOTOR

#### **DRIVER SIDE**

DRIVER SIDE : Component Function Check

INFOID:0000000012353995

### 1. CHECK POWER WINDOW MOTOR CIRCUIT

Check front power window motor (driver side) operation with power window main switch.

#### Is the inspection result normal?

YES >> Front power window motor (driver side) is OK.

NO >> Refer to PWC-40, "DRIVER SIDE : Diagnosis Procedure".

#### DRIVER SIDE: Diagnosis Procedure

INFOID:0000000012353996

### $1.\mathsf{check}$ front power window motor input signal

- 1. Turn ignition switch OFF.
- 2. Disconnect front power window motor (driver side) connector.
- 3. Turn ignition switch ON.
- 4. Check voltage between front power window motor (driver side) harness connector and ground.

(+) Front power window motor (driver side)		(–) Condition			Voltage (V) (Approx.)	
Connector	Terminal	•			(/ tpp/0x.)	
	2			UP	12	
D10	_	Ground	Power window main switch	DOWN	0	
1	Ground	Power window main switch	UP	0		
	1			DOWN	12	

#### Is the inspection result normal?

YES >> Replace front power window motor (driver side). Refer to <u>GW-20, "Removal and Installation"</u>.

NO >> GO TO 2.

### 2.CHECK POWER WINDOW MOTOR CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect power window main switch connector.
- Check continuity between power window main switch harness connector and front power window motor (driver side) harness connector.

Power window main switch		Front power window motor (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
D22	5	D10	1	Existed
	6	010	2	LXISTEG

Check continuity between power window main switch harness connector and ground.

Power windo	w main switch		Continuity	
Connector	Terminal	Ground	Continuity	
D22	5	Giodila	Not existed	
UZZ	6		NOI EXISIEU	

#### Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-74, "Removal and Installation".

NO >> Repair or replace harness.

#### PASSENGER SIDE

#### < DTC/CIRCUIT DIAGNOSIS >

### PASSENGER SIDE: Component Function Check

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### 1. CHECK POWER WINDOW MOTOR CIRCUIT

Check front power window motor (passenger side) operation with power window main switch or front power window switch (passenger side).

#### Is the inspection result normal?

YES >> Front power window motor (passenger side) is OK.

NO >> Refer to PWC-41, "PASSENGER SIDE : Diagnosis Procedure".

### PASSENGER SIDE: Diagnosis Procedure

INFOID:0000000012353998

### 1. CHECK FRONT POWER WINDOW MOTOR INPUT SIGNAL

- 1. Turn ignition switch OFF.
- Disconnect front power window motor (passenger side) connector.
- Turn ignition switch ON.
- 4. Check voltage between front power window motor (passenger side) harness connector and ground.

Front power	(+) Front power window motor (passenger side)		Condition		Voltage (V) (Approx.)
Connector	Terminal				
	2			UP	12
D40	D40 1	Ground	Front power window switch (passenger side)	DOWN	0
D40				UP	0
				DOWN	12

#### Is the inspection result normal?

YES >> Replace front power window motor (passenger side). Refer to <u>GW-20, "Removal and Installation"</u>.

NO >> GO TO 2.

### 2.CHECK POWER WINDOW MOTOR CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect front power window switch (passenger side) connector.
- Check continuity between front power window switch (passenger side) harness connector and front power window motor (passenger side) harness connector.

Front power window switch (passenger side)		Front power window motor (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	Continuity
D50	8	D40	2	Existed
D50	9	D <del>1</del> 0	1	LAISIEU

Check continuity between front power window switch (passenger side) connector and ground.

Front power window s	witch (passenger side)		Continuity	
Connector	Connector Terminal		Continuity	
D50	8	- Ground	Not existed	
Б00	9		Not existed	

#### Is the inspection result normal?

YES >> Replace front power window switch (passenger side). Refer to <a href="PWC-74">PWC-74</a>, "Removal and Installation".

NO >> Repair or replace harness.

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#### < DTC/CIRCUIT DIAGNOSIS >

### **REAR LH: Component Function Check**

INFOID:0000000012353999

### 1. CHECK POWER WINDOW MOTOR CIRCUIT

Check rear power window motor LH operation with power window main switch or rear power window switch LH.

#### Is the inspection result normal?

YES >> Rear power window motor LH is OK.

NO >> Refer to PWC-42, "REAR LH: Diagnosis Procedure".

#### REAR LH: Diagnosis Procedure

INFOID:0000000012354000

### 1. CHECK REAR POWER WINDOW MOTOR INPUT SIGNAL

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

	+) indow motor LH Terminal	(–)	Condition		Voltage (V) (Approx.)	
	1			UP	12	
D52	2	Ground	Ground	Rear power window switch LH	DOWN	0
	3			DOWN	12	

#### Is the inspection result normal?

YES >> Replace rear power window motor LH. Refer to GW-23, "Removal and Installation".

NO >> GO TO 2.

### 2.CHECK POWER WINDOW MOTOR CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window switch LH connector.
- Check continuity between rear power window switch LH harness connector and rear power window motor LH harness connector.

Rear power wi	ndow switch LH	Rear power window motor LH		Continuity
Connector	Terminal	Connector	Terminal	Continuity
D54	8	D52	1	Existed
D3 <del>4</del>	9	D32	3	Laistea

4. Check continuity between rear power window switch LH harness connector and ground.

Rear power	vindow switch LH		Continuity
Connector	Terminal	Ground	Continuity
	8	Ground	Not existed
D54	9		inot existed

#### Is the inspection result normal?

YES >> Replace rear power window switch LH. Refer to <a href="PWC-75">PWC-75</a>, "Removal and Installation".

NO >> Repair or replace harness.

REAR RH

#### REAR RH: Component Function Check

INFOID:0000000012354001

### 1. CHECK POWER WINDOW MOTOR CIRCUIT

#### < DTC/CIRCUIT DIAGNOSIS >

Check rear power window motor RH operation with power window main switch or rear power window switch RH.

#### Is the inspection result normal?

YES >> Rear power window motor RH is OK.

NO >> Refer to PWC-43, "REAR RH: Diagnosis Procedure".

#### REAR RH: Diagnosis Procedure

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### 1. CHECK REAR POWER WINDOW MOTOR INPUT SIGNAL

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

(+) Rear power window motor RH		(–)	Condition		Voltage (V) (Approx.)
Connector	Terminal				( 4-1)
	1			UP	12
D72	D72	- Ground	Ground Rear power window switch RH	DOWN	0
DIZ	3			UP	0
	3			DOWN	12

#### Is the inspection result normal?

YES >> Replace rear power window motor RH. Refer to <u>GW-23</u>, "Removal and Installation".

NO >> GO TO 2.

### 2.CHECK POWER WINDOW MOTOR CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect rear power window switch RH connector.
- 3. Check continuity between rear power window switch RH harness connector and rear power window motor RH harness connector.

Rear power window switch RH		Rear power window motor RH		Continuity
Connector	Terminal	Connector	Terminal	Continuity
D74	8	D72	1	Existed
D/4	9	DIZ	3	LXISIEU

Check continuity between rear power window switch RH harness connector and ground.

Rear power	window switch RH		Continuity
Connector	Terminal	Ground	Continuity
	8	Giouna	Not existed
D74	9		Not existed

#### Is the inspection result normal?

YES >> Replace rear power window switch RH. Refer to PWC-75, "Removal and Installation".

NO >> Repair or replace harness.

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#### **ENCODER**

#### **DRIVER SIDE**

### **DRIVER SIDE: Component Function Check**

INFOID:0000000012354003

### 1. CHECK ENCODER

Check that driver side door glass performs AUTO open/close operation normally by power window main switch.

#### Is the inspection result normal?

YES >> Encoder is OK.

NO >> Refer to PWC-44, "DRIVER SIDE : Diagnosis Procedure".

### DRIVER SIDE: Diagnosis Procedure

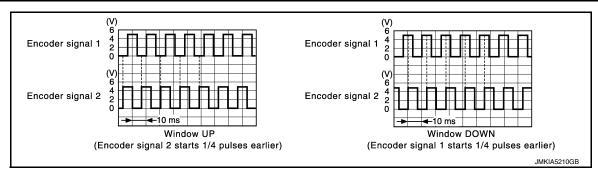
INFOID:0000000012354004

### 1. CHECK ENCODER SIGNAL

1. Turn ignition switch ON.

2. Check signal between power window main switch harness connector and ground with oscilloscope.

(+) Power window main switch		(-)	Signal (Reference value)
Connector	Terminal		(Notoronos valus)
D22	11	Ground	Refer to following signal
DZZ	12	Ground	Refer to following signal



#### Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-74, "Removal and Installation".

NO >> GO TO 2.

### 2.check encorder signal circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect power window main switch connector and front power window motor (driver side) connector.
- 3. Check continuity between power window main switch harness connector and front power window motor (driver side) harness connector.

Power window main switch		Front power window motor (driver side)		Continuity
Connector	Terminal	Connector Terminal		
D22	11	D10	5	Existed
DZZ	12	510	3	LAISIEU

4. Check continuity between power window main switch harness connector and ground.

#### < DTC/CIRCUIT DIAGNOSIS >

Power wind	Power window main switch		Continuity
Connector	Terminal	Ground	Continuity
D22	11	Giodila	Not existed
DZZ	12		Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

 ${f 3.}$ CHECK ENCORDER POWER SUPPLY CIRCUIT 1

- Connect power window main switch connector.
- 2. Turn ignition switch ON.
- Check voltage between front power window motor (driver side) harness connector and ground.

(+) Front power window motor (driver side)		(–)	Voltage (V) (Approx.)
Connector Terminal		. ,	
D10	4	Ground	12

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

#### 4. CHECK ENCORDER POWER SUPPLY CIRCUIT 2

Turn ignition switch OFF.

- Disconnect power window main switch connector.
- 3. Check continuity between power window main switch harness connector and front power window motor (driver side) harness connector.

Power windo	Power window main switch Front power window motor (driver side)		Front power window motor (driver side)	
Connector	Terminal	Connector Terminal		Continuity
D22	3	D10	4	Existed

Check continuity between power window main switch harness connector and ground.

Power window main switch			Continuity
Connector	Connector Terminal		Continuity
D22	3		Not existed

#### Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-74, "Removal and Installation".

NO >> Repair or replace harness.

### 5.CHECK GROUND CIRCUIT 1

- Turn ignition switch OFF.
- 2. Disconnect power window main switch connector.
- Check continuity between power window main switch harness connector and front power window motor (driver side) harness connector.

Power windo	w main switch	Front power window motor (driver side)		Continuity
Connector	Terminal	Connector Terminal		Continuity
D22	10	D10	6	Existed

#### Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

#### 6.CHECK GROUND CIRCUIT 2

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#### **ENCODER**

#### < DTC/CIRCUIT DIAGNOSIS >

- Connect power window main switch connector.
- Check continuity between power window main switch connector and ground.

Power window main switch			Continuity
Connector	Connector Terminal		Continuity
D22	10		Existed

#### Is the inspection result normal?

YES >> Replace front power window motor (driver side). Refer to <u>GW-20, "Removal and Installation"</u>.

NO >> Replace power window main switch. Refer to PWC-74, "Removal and Installation".

#### PASSENGER SIDE

#### PASSENGER SIDE: Component Function Check

INFOID:0000000012354005

### 1. CHECK ENCODER

Check that passenger side door glass performs AUTO open/close operation normally by power window main switch or front power window switch (passenger side).

#### Is the inspection result normal?

YES >> Encoder is OK.

NO >> Refer to PWC-46, "PASSENGER SIDE : Diagnosis Procedure".

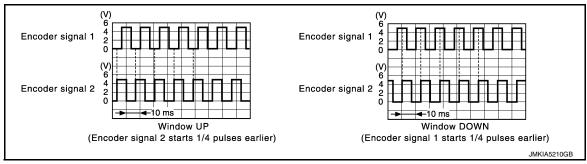
#### PASSENGER SIDE: Diagnosis Procedure

INFOID:0000000012354006

### 1. CHECK ENCODER SIGNAL

- 1. Turn ignition switch ON.
- 2. Check signal between front power window switch (passenger side) harness connector and ground with oscilloscope.

(+)		(–)	Signal (Reference value)	
Front power window switch (passenger side)				
Connector	Terminal			
D50	12	Ground	Pofor to following signal	
D30	15	Ground	Refer to following signal	



#### Is the inspection result normal?

YES >> Replace front power window switch (passenger side). Refer to <a href="PWC-74">PWC-74</a>, "Removal and Installation".

NO >> GO TO 2.

### 2.check encorder signal circuit

- 1. Turn ignition switch OFF.
- Disconnect front power window switch (passenger side) connector and front power window motor (passenger side) connector.
- Check continuity between front power window switch (passenger side) harness connector and front power window motor (passenger side) harness connector.

Front power window switch (passenger side)		Front power window motor (passenger side)		Continuity
Connector	Terminal	Connector Terminal		Continuity
D50	12	D40	5	Existed
D30	15	D <del>-1</del> 0	3	Laisteu

4. Check continuity between front power window switch (passenger side) harness connector and ground.

Front power window switch (passenger side)			Continuity
Connector	Terminal	Ground	Continuity
D50	12	Not existed	Not existed
D30	15		Not existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

### 3.CHECK ENCORDER POWER SUPPLY CIRCUIT 1

- 1. Connect front power window switch (passenger side) connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between front power window motor (passenger side) harness connector and ground.

(+) Front power window motor (passenger side)		(-)	Voltage (V) (Approx.)	
Connector	Terminal			
D40	4	Ground	12	

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

### 4. CHECK ENCORDER POWER SUPPLY CIRCUIT 2

- Turn ignition switch OFF.
- Disconnect front power window switch (passenger side) connector.
- 3. Check continuity between front power window switch (passenger side) harness connector and front power window motor (passenger side) harness connector.

Front power window s	Front power window switch (passenger side)		Front power window motor (passenger side)	
Connector	Terminal	Connector	Terminal	Continuity
D50	4	D40	4	Existed

4. Check continuity between front power window switch (passenger side) harness connector and ground.

Front power window switch (passenger side)			Continuity
Connector	Terminal	Ground	Continuity
D50	4		Not existed

#### Is the inspection result normal?

YES >> Replace front power window switch (passenger side). Refer to <a href="PWC-74">PWC-74</a>, "Removal and Installation".

NO >> Repair or replace harness.

### CHECK GROUND CIRCUIT 1

- Turn ignition switch OFF.
- Disconnect front power window switch (passenger side) connector.
- Check continuity between front power window switch (passenger side) harness connector and front power window motor (passenger side) harness connector.

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#### < DTC/CIRCUIT DIAGNOSIS >

Front power window s	nt power window switch (passenger side) From		Front power window motor (passenger side)	
Connector	Terminal	Connector	Terminal	Continuity
D50	3	D40	6	Existed

#### Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

### 6.CHECK GROUND CIRCUIT 2

- 1. Connect front power window switch (passenger side) connector.
- Check continuity between front power window switch (passenger side) connector and ground.

Front power window switch (passenger side)			Continuity
Connector	Terminal	Ground	Continuity
D50	3		Existed

#### Is the inspection result normal?

YES >> Replace front power window motor (passenger side). Refer to <u>GW-20. "Removal and Installation"</u>.

NO >> Replace front power window switch (passenger side). Refer to <u>PWC-74, "Removal and Installation"</u>.

#### REAR LH

#### REAR LH: Component Function Check

INFOID:0000000012354007

### 1. CHECK ENCODER OPERATION

Check that rear door LH glass performs AUTO open/close operation normally by power window main switch or rear power window switch LH.

#### Is the inspection result normal?

YES >> Encoder operation is OK.

NO >> Refer to PWC-48, "REAR LH: Diagnosis Procedure".

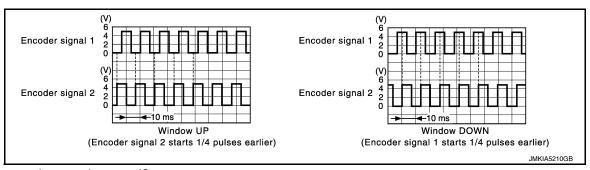
### REAR LH: Diagnosis Procedure

INFOID:0000000012354008

### 1. CHECK ENCODER SIGNAL

- 1. Turn ignition switch ON.
- 2. Check signal between rear power window switch LH harness connector and ground with oscilloscope.

	+) ndow switch LH	(-)	Signal (Reference value)	
Connector	Terminal		(1.010101100 10.100)	
D54	12	Ground	Refer to following signal	
D34	15	Ground	iverer to following signal	



#### Is the inspection result normal?

YES >> Replace rear power window switch LH. Refer to <a href="PWC-75">PWC-75</a>, "Removal and Installation".

#### < DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 2.

### 2. CHECK ENCORDER SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window switch LH connector and rear power window motor LH connector.
- 3. Check continuity between rear power window switch LH harness connector and rear power window motor LH harness connector.

Rear power wi	ndow switch LH	Rear power window motor LH		Continuity
Connector	Terminal	Connector	Terminal	Continuity
D54	12	D52	5	Existed
D34	15	D32	6	LAISIEU

4. Check continuity rear power window switch LH harness connector and ground.

Rear power window switch LH			Continuity
Connector	Terminal	Ground	Continuity
	12	Giouna	Not existed
D3 <del>4</del>	15		Not existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

### 3.CHECK ENCORDER POWER SUPPLY CIRCUIT 1

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

	(+) Rear power window motor LH		Voltage (V) (Approx.)	
Connector	Terminal		(* pp. 5/11)	
D52	2	Ground	12	

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

#### 4. CHECK ENCORDER POWER SUPPLY CIRCUIT2

- Turn ignition switch OFF.
- Disconnect rear power window switch LH connector.
- 3. Check continuity between rear power window switch LH harness connector and rear power window motor LH harness connector.

Rear power wi	Rear power window switch LH		Rear power window motor LH	
Connector	Terminal	Connector	Terminal	Continuity
D54	4	D52	2	Existed

4. Check continuity between rear power window switch LH harness connector and ground.

Rear power window switch LH			Continuity
Connector	Terminal	Ground	Continuity
D54	4		Not existed

#### Is the inspection result normal?

YES >> Replace rear power window switch LH. Refer to PWC-75, "Removal and Installation".

NO >> Repair or replace harness.

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#### **ENCODER**

#### < DTC/CIRCUIT DIAGNOSIS >

### 5. CHECK GROUND CIRCUIT 1

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window switch LH harness connector.
- Check continuity between rear power window switch LH harness connector and rear power window motor LH harness connector.

Rear power wi	Rear power window switch LH		Rear power window motor LH	
Connector	Terminal	Connector	Terminal	Continuity
D54	3	D52	4	Existed

#### Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

#### **6.**CHECK GROUND CIRCUIT 2

- 1. Connect rear power window switch LH connector.
- Check continuity between rear power window switch LH connector and ground.

Rear power window switch LH			Continuity
Connector	Terminal	Ground	Continuity
D54	3		Existed

#### Is the inspection result normal?

YES >> Replace rear power window motor LH. Refer to <u>GW-23</u>, "Removal and Installation".

NO >> Replace rear power window switch LH. Refer to PWC-75, "Removal and Installation".

#### REAR RH

### REAR RH: Component Function Check

INFOID:0000000012354009

#### 1. CHECK ENCODER OPERATION

Check that rear door RH glass performs AUTO open/close operation normally by power window main switch or rear power window switch RH.

#### Is the inspection result normal?

YES >> Encoder operation is OK.

NO >> Refer to PWC-50, "REAR RH: Diagnosis Procedure".

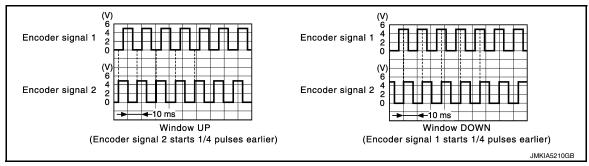
### REAR RH: Diagnosis Procedure

INFOID:0000000012354010

#### 1. CHECK ENCODER SIGNAL

- 1. Turn ignition switch ON.
- 2. Check signal between rear power window switch RH harness connector and ground with oscilloscope.

	+) ndow switch RH	(-)	Signal (Reference value)	
Connector	Terminal			
D74	12	Ground	Pofor to following signal	
D/4	15	Giouna	Refer to following signal	



#### Is the inspection result normal?

YES >> Replace rear power window switch RH. Refer to PWC-75, "Removal and Installation".

NO >> GO TO 2.

### 2. CHECK ENCODER SIGNAL CIRCUIT

Turn ignition switch OFF.

- 2. Disconnect rear power window switch RH connector and rear power window motor RH connector.
- 3. Check continuity between rear power window switch RH harness connector and rear power window motor RH harness connector.

Rear power wi	ndow switch RH	Rear power window motor RH		Continuity
Connector	Terminal	Connector Terminal		Continuity
	12	D72	5	Existed
D/4	15	DIZ	6	LXISTEG

4. Check continuity rear power window switch RH harness connector and ground.

Rear power wii	ndow switch RH	Continuity	
Connector	Terminal	Ground	Continuity
 D74	12	- Ground	Not existed
574	15		Not existed

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness.

### 3.CHECK ENCODER POWER SUPPLY CIRCUIT 1 $\,$

- 1. Connect rear power window switch RH connector.
- Turn ignition switch ON.
- 3. Check voltage between rear power window motor RH harness connector and ground.

(+) Rear power window motor RH		(-)	Voltage (V) (Approx.)	
Connector	Connector Terminal			
D72	2	Ground	12	

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

### 4. CHECK ENCORDER POWER SUPPLY CIRCUIT 2

- Turn ignition switch OFF.
- 2. Disconnect rear power window switch RH connector.
- Check continuity between rear power window switch RH harness connector and rear power window motor RH harness connector.

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#### **ENCODER**

#### < DTC/CIRCUIT DIAGNOSIS >

Rear power wi	ndow switch RH	Rear power window motor RH		Continuity
Connector	Terminal	Connector	Terminal	Continuity
D74	4	D72	2	Existed

4. Check continuity between rear power window switch RH harness connector and ground.

Rear power window switch RH			Continuity
Connector	Terminal	Ground	Continuity
D74	4		Not existed

#### Is the inspection result normal?

YES >> Replace rear power window switch RH. Refer to PWC-75, "Removal and Installation".

NO >> Repair or replace harness.

### 5. CHECK GROUND CIRCUIT 1

- 1. Turn ignition switch OFF.
- 2. Disconnect rear power window switch RH harness connector.
- Check continuity between rear power window switch RH harness connector and rear power window motor RH harness connector.

Rear power wi	ndow switch RH	Rear power window motor RH				Continuity
Connector	Terminal	Connector	Terminal	Continuity		
D74	3	D72	4	Existed		

#### Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

### 6. CHECK GROUND CIRCUIT 2

- 1. Connect rear power window switch RH connector.
- 2. Check continuity between rear power window switch RH connector and ground.

Rear power win	Rear power window switch RH		Continuity
Connector	Terminal	Ground	Continuity
D74	3		Existed

#### Is the inspection result normal?

YES >> Replace rear power window motor RH. Refer to <u>GW-23, "Removal and Installation"</u>.

NO >> Replace rear power window switch RH. Refer to <a href="PWC-75">PWC-75</a>. "Removal and Installation".

#### DOOR KEY CYLINDER SWITCH

#### < DTC/CIRCUIT DIAGNOSIS >

### DOOR KEY CYLINDER SWITCH

### Component Function Check

INFOID:0000000012354011

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### 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. Refer to <a href="DLK-38">DLK-38</a>, "INTELLIGENT KEY: CONSULT Function (BCM - INTELLIGENT KEY)".

Monitor item	Condition		
KEY CYL LK-SW	Lock	: ON	
RET GTE ER-GW	Neutral / Unlock	: OFF	
KEY CYL UN-SW	Unlock	: ON	
RET CIL UN-3VV	Neutral / Lock	: OFF	

#### Is the inspection result normal?

YES >> Door key cylinder switch is OK.

NO >> Refer to PWC-53, "Diagnosis Procedure".

### Diagnosis Procedure

INFOID:0000000012354012

### 1. CHECK DOOR KEY CYLINDER SWITCH SIGNAL

- 1. Turn ignition switch OFF.
- 2. Disconnect front door lock assembly (driver side) (door key cylinder switch) connect.
- 3. Turn ignition switch ON.
- 4. Check voltage between front door lock assembly (driver side) (door key cylinder switch) harness connector and ground.

(+) Front door lock assembly (driver side) (door key cylinder switch)		(–)	Voltage (V) (Approx.)	
Connector	Terminal			
D15	5	Ground	5	

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

### 2.CHECK DOOR KEY CYLINDER SWITCH CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect power window main switch connector.
- 3. Check continuity between power window main switch harness connector and front door lock assembly (driver side) (door key cylinder switch) harness connector.

Power window main	switch	Front door lock assembly (driver side) (door key cylinder switch)		Continuity
Connector	Terminal	Connector Term		
D22	15	D15	6	Existed
DZZ	16	D13	5	Existed

4. Check continuity between power window main switch harness connector and ground.

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#### DOOR KEY CYLINDER SWITCH

#### < DTC/CIRCUIT DIAGNOSIS >

Power window i	Power window main switch		Continuity	
Connector	Terminal	Ground	Continuity	
D22	15	Ground	Not existed	
DZZ	16		Not existed	

#### Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-74, "Removal and Installation".

NO >> Repair or replace harness.

### 3.CHECK DOOR KEY CYLINDER SWITCH GROUND CIRCUIT

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

Front door lock assembly (driver side	e) (door key cylinder switch)		Continuity
Connector	Terminal	Ground	Continuity
D15	4		Existed

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

### 4. CHECK DOOR KEY CYLINDER SWITCH

Check front door lock assembly (driver side) (door key cylinder switch).

Refer to PWC-54, "Component Inspection".

#### Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace front door lock assembly (driver side) (door key cylinder switch). Refer to <u>DLK-210.</u> "DOOR LOCK: Removal and Installation".

### 5. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

### Component Inspection

COMPONENT INSPECTION

INFOID:0000000012354013

### 1. CHECK DOOR KEY CYLINDER SWITCH

### 1. Turn ignition switch OFF.

- 2. Disconnect front door lock assembly (driver side) (key cylinder switch) connector.
- 3. Check front door lock assembly (driver side) (key cylinder switch).

Front door lock assembly (driver side) (key cylinder switch)  Terminal		Key position	Continuity
		rey position	Continuity
	4	Unlock	Existed
5		Neutral / Lock	Not existed
6		Lock	Existed
		Neutral / Unlock	Not existed

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace front door lock assembly (driver side) (key cylinder switch). Refer to <u>DLK-212</u>, "<u>OUTSIDE</u> HANDLE: Removal and Installation".

#### < DTC/CIRCUIT DIAGNOSIS >

### POWER WINDOW SERIAL LINK POWER WINDOW MAIN SWITCH

INFOID:0000000012354014

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### POWER WINDOW MAIN SWITCH: Component Function Check

### 1. CHECK POWER WINDOW SWITCH OUTPUT SIGNAL

### (II) With CONSULT

Check ("CDL LOCK SW", "CDL UNLOCK SW") in "DATA MONITOR" mode for "POWER DOOR LOCK SYS-TEM" with CONSULT. Refer to DLK-36, "DOOR LOCK: CONSULT Function (BCM - DOOR LOCK)".

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

#### Is the inspection result normal?

YES >> Power window serial link is OK.

>> Refer to PWC-55, "POWER WINDOW MAIN SWITCH: Diagnosis Procedure". NO

### POWER WINDOW MAIN SWITCH: Diagnosis Procedure

INFOID:0000000012354015

### 1. CHECK POWER WINDOW SWITCH INPUT SIGNAL

Turn ignition switch ON.

Check signal between power window main switch harness connector and ground with oscilloscope.

(+) power window main switch		(–)	Signal (Reference value)	
Connector	Terminal		,	
D22	13	Ground	(V) 15 10 5 0 JPMIA0013GB	

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

### 2.CHECK POWER WINDOW SERIAL LINK SIGNAL

- Turn ignition switch OFF.
- Disconnect power window main switch connector. 2.
- 3. Turn ignition switch ON.
- Check voltage between power window main switch harness connector and ground.

(+) Power window main switch		(–)	Voltage (V) (Approx.)	
Connector	Terminal		( FF - 7	
D22	13	Ground	12	

#### Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-74, "Removal and Installation".

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NO >> GO TO 3.

### 3.CHECK POWER WINDOW SERIAL LINK CIRCUIT

- 1. Disconnect BCM connector and power window main switch connector.
- 2. Check continuity between BCM harness connector and power window main switch harness connector.

В	BCM		Power window main switch	
Connector	Terminal	Connector	Terminal	Continuity
M120	8	D22	13	Existed

3. Check continuity between BCM harness connector and ground.

BCM			Continuity	
Connector	Connector Terminal		Continuity	
M120	8		Not existed	

#### Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-95, "Removal and Installation".

NO >> Repair or replace harness.

4. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

#### >> INSPECTION END

### FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

# FRONT POWER WINDOW SWITCH (PASSENGER SIDE): Component Function Check

### 1. CHECK POWER WINDOW SWITCH OUTPUT SIGNAL

#### (P) With CONSULT

Check ("CDL LOCK SW", "CDL UNLOCK SW") in "DATA MONITOR" mode for "POWER DOOR LOCK SYSTEM" with CONSULT. Refer to <a href="DLK-36">DLK-36</a>, "DOOR LOCK: CONSULT Function (BCM - DOOR LOCK)".

Monitor item	Condition		
CDL LOCK SW	LOCK	: ON	
CDL LOCK SW	UNLOCK	: OFF	
CDL UNLOCK SW	LOCK	: OFF	
ODE UNLOCK SW	UNLOCK	: ON	

#### Is the inspection result normal?

YES >> Power window serial link is OK.

NO >> Refer to PWC-56, "FRONT POWER WINDOW SWITCH (PASSENGER SIDE) : Diagnosis Procedure".

### FRONT POWER WINDOW SWITCH (PASSENGER SIDE): Diagnosis Procedure

INFOID:0000000012354017

### 1. CHECK POWER WINDOW SWITCH INPUT SIGNAL

- 1. Turn ignition switch ON.
- 2. Check signal between front power window switch (passenger side) harness connector and ground with oscilloscope.

#### < DTC/CIRCUIT DIAGNOSIS >

(+) Front power window switch (passenger side)		(-)	Signal (Reference value)	
Connector	Terminal		(Neletetice value)	
D50	16	Ground	(V) 15 10 5 0 10 ms  JPMIA0013GB	

#### Is the inspection result normal?

YES >> Replace front power window switch (passenger side). Refer to PWC-74, "Removal and Installation".

NO >> GO TO 2.

### 2.CHECK POWER WINDOW SERIAL LINK SIGNAL

- Turn ignition switch OFF.
- 2. Disconnect front power window switch (passenger side) connector.
- Turn ignition switch ON. 3.
- Check voltage between front power window switch (passenger side) harness connector and ground.

(+)			Voltage (V) (Approx.)	
Front power window switch (passenger side)		(–)		
Connector	Terminal		(	
D50	16	Ground	12	

#### Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-74, "Removal and Installation".

NO >> GO TO 3.

### 3.check power window serial link circuit

Disconnect power window main switch connector.

Check continuity between power window main switch harness connector and front power window switch (passenger side) harness connector.

Power windo	Power window main switch		Front power window switch (passenger side)	
Connector	Terminal	Connector	Terminal	Continuity
D22	13	D50	16	Existed

3. Check continuity between power window main switch harness connector and ground.

Power window	w main switch		Continuity
Connector Terminal		Ground	Continuity
D22	13		Not existed

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

### 4. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

#### >> INSPECTION END

#### REAR POWER WINDOW SWITCH LH

**PWC-57 Revision: September 2015** 2016 Q70 **PWC** 

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#### < DTC/CIRCUIT DIAGNOSIS >

### REAR POWER WINDOW SWITCH LH: Component Function Check

INFOID:000000001235401

### 1. CHECK POWER WINDOW SWITCH OUTPUT SIGNAL

#### (A) With CONSULT

Check ("CDL LOCK SW", "CDL UNLOCK SW") in "DATA MONITOR" mode for "POWER DOOR LOCK SYSTEM" with CONSULT. Refer to <a href="DLK-36">DLK-36</a>, "DOOR LOCK: CONSULT 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-58, "REAR POWER WINDOW SWITCH LH: Diagnosis Procedure".

#### REAR POWER WINDOW SWITCH LH: Diagnosis Procedure

INFOID:0000000012354019

### 1. CHECK POWER WINDOW SWITCH INPUT SIGNAL

- Turn ignition switch ON.
- 2. Check signal between rear power window switch LH harness connector and ground with oscilloscope.

(+) Rear power window switch LH		(–)	Signal (Reference value)
Connector	Terminal		(resistance value)
D54	16	Ground	(V) 15 10 5 0 10 ms  JPMIA0013GB

#### Is the inspection result normal?

YES >> Replace rear power window switch LH. Refer to PWC-74, "Removal and Installation".

NO >> GO TO 2.

### 2.CHECK POWER WINDOW SERIAL LINK SIGNAL

- 1. Turn ignition switch OFF.
- Disconnect rear power window switch LH connector.
- Turn ignition switch ON.
- 4. Check voltage between rear power window switch LH harness connector and ground.

Rear power wi	(+) Rear power window switch LH		Voltage (V) (Approx.)
Connector	Terminal		(
D54	16	Ground	12

#### Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-74, "Removal and Installation".

NO >> GO TO 3.

### 3. CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Disconnect power window main switch connector.

#### < DTC/CIRCUIT DIAGNOSIS >

Check continuity between power window main switch harness connector and rear power window switch LH harness connector.

Power windo	Power window main switch		Rear power window switch LH	
Connector	Terminal	Connector Terminal		Continuity
D22	13	D54	16	Existed

3. Check continuity between power window main switch harness connector and ground.

Power window main switch			Continuity	
Connector Terminal		Ground	Continuity	
D22	13		Not existed	

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4.CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

REAR POWER WINDOW SWITCH RH

REAR POWER WINDOW SWITCH RH: Component Function Check

1. CHECK POWER WINDOW SWITCH OUTPUT SIGNAL

(P) With CONSULT

Check ("CDL LOCK SW", "CDL UNLOCK SW") in "DATA MONITOR" mode for "POWER DOOR LOCK SYS-TEM" with CONSULT. Refer to PWC-59, "REAR POWER WINDOW SWITCH RH: Diagnosis Procedure".

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-59, "REAR POWER WINDOW SWITCH RH: Diagnosis Procedure".

REAR POWER WINDOW SWITCH RH: Diagnosis Procedure

1. CHECK POWER WINDOW SWITCH INPUT SIGNAL

Turn ignition switch ON.

Check signal between rear power window switch RH harness connector and ground with oscilloscope.

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#### < DTC/CIRCUIT DIAGNOSIS >

(+)  Rear power wind  Connector	low switch RH	(-)	Signal (Reference value)
D74	16	Ground	(V) 15 10 5 0 10 ms  JPMIA0013GB

#### Is the inspection result normal?

YES >> Replace rear power window switch RH. Refer to PWC-74, "Removal and Installation".

NO >> GO TO 2.

### 2.CHECK POWER WINDOW SERIAL LINK SIGNAL

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

(+)			V-14 0.0
Rear power window switch RH		(–)	Voltage (V) (Approx.)
Connector	Terminal		, , ,
D74	16	Ground	12

#### Is the inspection result normal?

YES >> Replace power window main switch. Refer to <a href="PWC-74">PWC-74</a>, "Removal and Installation".

NO >> GO TO 3.

### 3.CHECK POWER WINDOW SERIAL LINK CIRCUIT

- 1. Disconnect power window main switch connector.
- 2. Check continuity between power window main switch harness connector and rear power window switch RH harness connector.

Power window main switch		Rear power window switch RH		Continuity
Connector	Terminal	Connector Terminal		Continuity
D22	13	D74	16	Existed

3. Check continuity between power window main switch harness connector and ground.

Power window main switch			Continuity
Connector Terminal		Ground	Continuity
D22	13		Not existed

#### Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

4. CHECK INTERMITTENT INCIDENT

Refer to GI-45, "Intermittent Incident".

>> INSPECTION END

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

< SYMPTOM DIAGNOSIS >

### SYMPTOM DIAGNOSIS

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

Diagnosis Procedure

1. CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.

PWC-36, "BCM: Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

2.CHECK POWER WINDOW MAIN SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check power window switch power supply and ground circuit.

Refer to PWC-36, "POWER WINDOW MAIN SWITCH: Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace the malfunctioning parts.

3. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".

NO >> GO TO 1.

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#### DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE

#### < SYMPTOM DIAGNOSIS >

### DRIVER SIDE POWER WINDOW ALONE DOES NOT OPERATE

### Diagnosis Procedure

INFOID:0000000012354023

### 1. CHECK DRIVER SIDE POWER WINDOW MOTOR

Check driver side power window motor.

Refer to PWC-40, "DRIVER SIDE: Component Function Check".

#### Is the measurement value within the specification?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

### 2.CONFIRM THE OPERATION

Confirm the operation again.

#### Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".

NO >> GO TO 1.

#### FRONT PASSENGER SIDE POWER WINDOW DOES NOT OPERATE < SYMPTOM DIAGNOSIS > FRONT PASSENGER SIDE POWER WINDOW DOES NOT OPERATE WHEN BOTH POWER WINDOW MAIN SWITCH AND FRONT POWER WINDOW SWITCH ARE OPERATED В WHEN BOTH POWER WINDOW MAIN SWITCH AND FRONT POWER WINDOW SWITCH ARE OPERATED: Diagnosis Procedure INFOID:0000000012354024 1. CHECK FRONT POWER WINDOW SWITCH (PASSENGER SIDE) POWER SUPPLY AND GROUND CIR-**CUIT** Check front power window switch (passenger side) power supply and ground circuit. D Refer to PWC-37, "FRONT POWER WINDOW SWITCH (PASSENGER SIDE): Diagnosis Procedure". Is the inspection result normal? YES >> GO TO 2. Е NO >> Repair or replace the malfunctioning parts. 2.check passenger side power window motor circuit Check passenger side power window motor circuit. Refer to PWC-41, "PASSENGER SIDE: Component Function Check". Is the inspection result normal? YES >> GO TO 3. NO >> Repair or replace the malfunctioning parts. 3.CONFIRM THE OPERATION Confirm the operation again. Is the result normal? YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident". NO >> GO TO 1. WHEN FRONT POWER WINDOW SWITCH (PASSENGER SIDE) IS OPERATED WHEN FRONT POWER WINDOW SWITCH (PASSENGER SIDE) IS OPERATED: Diagnosis Procedure INFOID:0000000012354025 **PWC** 1. REPLACE FRONT POWER WINDOW SWITCH (PASSENGER SIDE) Replace front power window switch (passenger side). Refer to GI-45, "Intermittent Incident" >> INSPECTION END M WHEN POWER WINDOW MAIN SWITCH IS OPERATED WHEN POWER WINDOW MAIN SWITCH IS OPERATED: Diagnosis Procedure INFOID:0000000012354026 N ${f 1.}$ CHECK FRONT POWER WINDOW SWITCH (PASSENGER SIDE) SERIAL LINK CIRCUIT Check front power window switch (passenger side) serial link circuit. 0 Refer to PWC-56, "FRONT POWER WINDOW SWITCH (PASSENGER SIDE): Component Function Check" Is the inspection result normal? Р YES >> GO TO 2. NO >> Repair or replace the malfunctioning parts. $2.\mathsf{CONFIRM}$ THE OPERATION Confirm the operation again. Is the result normal? YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".

>> GO TO 1.

NO

#### REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE

#### < SYMPTOM DIAGNOSIS >

# REAR LH SIDE POWER WINDOW ALONE DOES NOT OPERATE WHEN BOTH POWER WINDOW MAIN SWITCH AND REAR POWER WINDOW SWITCH LH ARE OPERATED

# WHEN BOTH POWER WINDOW MAIN SWITCH AND REAR POWER WINDOW SWITCH LH ARE OPERATED: Diagnosis Procedure

### 1.check rear power window switch power supply and ground circuit

Check rear power window switch power supply and ground circuit.

Refer to PWC-38, "REAR POWER WINDOW SWITCH: Diagnosis Procedure".

#### Is the 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-42, "REAR LH: Component Function Check".

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace the malfunctioning parts.

### 3.CONFIRM THE OPERATION

Confirm the operation again.

#### Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".

NO >> GO TO 1.

#### WHEN REAR POWER WINDOW SWITCH LH IS OPERATED

### WHEN REAR POWER WINDOW SWITCH LH IS OPERATED: Diagnosis Procedure

INFOID:0000000012354028

### 1. REPLACE REAR POWER WINDOW SWITCH LH

Replace rear power window switch LH.

Refer to PWC-75, "Removal and Installation"

#### >> INSPECTION END

#### WHEN POWER WINDOW MAIN SWITCH IS OPERATED

#### WHEN POWER WINDOW MAIN SWITCH IS OPERATED: Diagnosis Procedure

INFOID:0000000012354029

### 1. CHECK REAR POWER WINDOW SWITCH LH SERIAL LINK CIRCUIT

Check rear power window switch LH serial link circuit.

Refer to PWC-58, "REAR POWER WINDOW SWITCH LH: Component Function Check".

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

#### 2.CONFIRM THE OPERATION

#### Confirm the operation again.

#### Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".

NO >> GO TO 1.

### REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE

< SYMPTOM DIAGNOSIS >

REAR RH SIDE POWER WINDOW ALONE DOES NOT OPERATE WHEN BOTH POWER WINDOW MAIN SWITCH AND REAR POWER WINDOW SWITCH RH ARE OPERATED	Α
WHEN BOTH POWER WINDOW MAIN SWITCH AND REAR POWER WINDOW SWITCH RH ARE OPERATED: Diagnosis Procedure	В
1. CHECK REAR POWER WINDOW SWITCH POWER SUPPLY AND GROUND CIRCUIT	С
Check rear power window switch power supply and ground circuit.  Refer to PWC-38, "REAR POWER WINDOW SWITCH: Diagnosis Procedure".	D
Is the inspection result normal?	D
YES >> GO TO 2.  NO >> Repair or replace the malfunctioning parts.	E
2.CHECK REAR POWER WINDOW MOTOR RH	_
Check rear power window motor RH.	F
Refer to PWC-42, "REAR RH: Component Function Check".  Is the inspection result normal?	
YES >> GO TO 3.	G
NO >> Repair or replace the malfunctioning parts.  3.CONFIRM THE OPERATION	
Confirm the operation again.	Н
Is the result normal?	
YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".  NO >> GO TO 1.	
WHEN REAR POWER WINDOW SWITCH RH IS OPERATED	
WHEN REAR POWER WINDOW SWITCH RH IS OPERATED : Diagnosis Procedure	J
1.REPLACE REAR POWER WINDOW SWITCH RH	PW(
Replace rear power window switch RH. Refer to PWC-75, "Removal and Installation"	
Refer to FWC-73. Removal and histaliation	L
>> INSPECTION END	
WHEN POWER WINDOW MAIN SWITCH IS OPERATED	M
WHEN POWER WINDOW MAIN SWITCH IS OPERATED: Diagnosis Procedure	
1. CHECK REAR POWER WINDOW SWITCH RH SERIAL LINK CIRCUIT	Ν
Check rear power window switch RH serial link circuit.  Refer to PWC-59, "REAR POWER WINDOW SWITCH RH: Component Function Check".	
Is the inspection result normal?	0
YES >> GO TO 2.  NO >> Repair or replace the malfunctioning parts.	
NO >> Repair or replace the malfunctioning parts.  2.CONFIRM THE OPERATION	Р
Confirm the operation again.	
Is the result normal?	
YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".  NO >> GO TO 1.	

Revision: September 2015 PWC-65 2016 Q70

## **AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATE NORMAL-**

#### < SYMPTOM DIAGNOSIS >

### AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATE NOR-**MALLY**

**DRIVER SIDE** 

DRIVER SIDE: Diagnosis Procedure

INFOID:0000000012354033

### 1. PERFORM INITIALIZATION PROCEDURE

Initialization procedure is performed and operation is confirmed. Refer to PWC-34, "Description".

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

### 2.CHECK ENCODER (DRIVER SIDE) CIRCUIT

Check encoder (driver side) circuit.

Refer to PWC-44, "DRIVER SIDE: Component Function Check".

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace the malfunctioning parts.

### 3.CONFIRM THE OPERATION

Confirm the operation again.

#### Is the result normal?

>> Check intermittent incident. Refer to GI-45, "Intermittent Incident". YES

>> GO TO 1. NO

PASSENGER SIDE

### PASSENGER SIDE: Diagnosis Procedure

INFOID:0000000012354034

### 1. PERFORM INITIALIZATION PROCEDURE

Initialization procedure is performed and operation is confirmed.

Refer to PWC-34, "Description".

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

### 2.CHECK ENCODER (PASSENGER SIDE) CIRCUIT

Check encoder (passenger side) circuit.

Refer to PWC-46, "PASSENGER SIDE: Component Function Check".

#### Is the inspection result normal?

YES >> GO TO 3.

>> Repair or replace the malfunctioning parts.

#### ${f 3}$ . CONFIRM THE OPERATION

Confirm the operation again.

#### Is the result normal?

YFS >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".

>> GO TO 1. NO

REAR LH

#### REAR LH: Diagnosis Procedure

INFOID:0000000012354035

### 1. PERFORM INITIALIZATION PROCEDURE

Initialization procedure is performed and operation is confirmed.

# AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATE NORMAL-LY

< SYMPTOM DIAGNOSIS >	
Refer to PWC-34, "Description"	
Is the inspection result normal?	Α
YES >> INSPECTION END NO >> GO TO 2.	
2.CHECK ENCODER (REAR LH) CIRCUIT	В
Check encoder (rear LH) circuit.	
Refer to PWC-48, "REAR LH: Component Function Check".	С
Is the inspection result normal?	
YES >> GO TO 3.  NO >> Repair or replace the malfunctioning parts.	
NO >> Repair or replace the malfunctioning parts.  3. CONFIRM THE OPERATION	D
Confirm the operation again.  Is the result normal?	Е
YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".	
NO >> GO TO 1.	
REAR RH	F
REAR RH : Diagnosis Procedure	
	G
1.PERFORM INITIALIZATION PROCEDURE	
Initialization procedure is performed and operation is confirmed.  Refer to <a href="PWC-34">PWC-34</a> , "Description".	Н
Is the inspection result normal?	
YES >> INSPECTION END	
NO >> GO TO 2.	
2.CHECK ENCODER (REAR RH) CIRCUIT	
Check encoder (rear RH) circuit. Refer to PWC-50, "REAR RH: Component Function Check".	J
Is the inspection result normal?	
YES >> GO TO 3.	PWC
NO >> Repair or replace the malfunctioning parts.  3.CONFIRM THE OPERATION	
	1
Confirm the operation again.  Is the result normal?	_
YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".	
NO >> GO TO 1.	M
	Ν
	0
	Р

#### ANTI-PINCH FUNCTION DOES NOT OPERATE

#### < SYMPTOM DIAGNOSIS >

### ANTI-PINCH FUNCTION DOES NOT OPERATE

### Diagnosis Procedure

INFOID:0000000012354037

### 1. CHECK POWER WINDOW AUTO OPERATION

Check AUTO operation of the door when anti-pinch function does not operate.

#### Is the inspection result normal?

YES >> GO TO 2.

NO

>> Refer to <u>PWC-66</u>, "<u>DRIVER SIDE</u>: <u>Diagnosis Procedure</u>" (driver side), <u>PWC-66</u>, "<u>PASSENGER SIDE</u>: <u>Diagnosis Procedure</u>" (passenger side), <u>PWC-66</u>, "<u>REAR LH</u>: <u>Diagnosis Procedure</u>" (rear LH), PWC-67, "REAR RH: Diagnosis Procedure" (rear RH).

### 2. CONFIRM THE OPERATION

Confirm the operation again.

#### Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".

NO >> GO TO 1.

# POWER WINDOW RETAINED POWER OPERATION DOES NOT OPERATE PROPERLY

< SYMPTOM DIAGNOSIS >	
POWER WINDOW RETAINED POWER OPERATION DOES NOT OPER-	
ATE PROPERLY	Α
Diagnosis Procedure	П
1.check door switch	В
Check door switch. Refer to DLK-87, "Component Function Check".	С
Is the inspection result normal? YES >> GO TO 2.	D
NO >> Repair or replace the malfunctioning parts.	D
2.CHECK POWER WINDOW MAIN SWITCH SERIAL LINK CIRCUIT	
Check power window main switch serial link circuit.  Refer to PWC-55, "POWER WINDOW MAIN SWITCH: Component Function Check".	E
Is the inspection result normal?	_
YES >> GO TO 3.  NO >> Repair or replace the malfunctioning parts.	F
3. CONFIRM THE OPERATION	
Confirm the operation again.	G
<u>Is the result normal?</u>	
YES >> Check intermittent incident. Refer to <u>GI-45, "Intermittent Incident"</u> . NO >> GO TO 1.	Н
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#### DOOR KEY CYLINDER SWITCH DOES NOT OPERATE POWER WINDOWS

#### < SYMPTOM DIAGNOSIS >

# DOOR KEY CYLINDER SWITCH DOES NOT OPERATE POWER WINDOWS

### Diagnosis Procedure

INFOID:0000000012354039

### 1. PERFORM INITIALIZATION PROCEDURE

Perform Initialization procedure and check that inspection result is normal.

Refer to PWC-34, "Description"

#### Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

### 2.CHECK DRIVER SIDE DOOR LOCK ASSEMBLY (DOOR KEY CYLINDER SWITCH)

Check driver side door lock assembly (door key cylinder switch).

Refer to PWC-53, "Component Function Check"

#### Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace the malfunctioning parts.

### 3. CONFIRM THE OPERATION

Confirm the operation again.

#### Is the result normal?

YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident"

NO >> GO TO 1.

### **KEYLESS POWER WINDOW DOWN DOES NOT OPERATE**

< SYMPTOM DIAGNOSIS >

KEYLESS POWER WINDOW DOWN DOES NOT OPERATE	-
Description INFOID:0000000123540	10
<b>NOTE:</b> Before performing the diagnosis in the following procedure, check "Work Flow". Refer to <u>DLK-69</u> , "Work Flow".	<u>k</u>
Diagnosis Procedure	41
1. CHECK REMOTE KEYLESS ENTRY FUNCTION	
Check remote keyless entry function.  Does door lock/unlock with Intelligent key button?  YES >> GO TO 2.  NO >> Go to DLK-21, "REMOTE KEYLESS ENTRY FUNCTION: System Description".  2.CHECK POWER WINDOW OPERATION	_
Check power window operation.	_
Does power window up/down with power window main switch?  YES >> GO TO 3.  NO >> Go to PWC-36, "POWER WINDOW MAIN SWITCH: Diagnosis Procedure".  3.CHECK "PW DOWN SET" SETTING IN "WORK SUPPORT"	
Check "PW DOWN SET" setting in "WORK SUPPORT".	_
Refer to DLK-38. "INTELLIGENT KEY: CONSULT Function (BCM - INTELLIGENT KEY)".  Is the inspection result normal?  YES >> GO TO 4.  NO >> Set "PW DOWN SET" setting in "WORK SUPPORT".	
4. CHECK POWER WINDOW MAIN SWITCH SERIAL LINK CIRCUIT  Check power window main switch serial link circuit.	_
Refer to PWC-55, "POWER WINDOW MAIN SWITCH: Component Function Check".  Is the inspection result normal?	
YES >> GO TO 5.  NO >> Repair or replace the malfunctioning parts.  5. CONFIRM THE OPERATION	
Confirm the operation again.	-
Is the result normal?  YES >> Check intermittent incident. Refer to GI-45, "Intermittent Incident".  NO >> GO TO 1.	

#### POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

< SYMPTOM DIAGNOSIS >

### POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

Diagnosis Procedure

INFOID:0000000012354042

1. REPLACE POWER WINDOW MAIN SWITCH

Replace power window main switch. Refer to PWC-74, "Removal and Installation".

>> INSPECTION END

### POWER WINDOW SWITCH DOES NOT ILLUMINATE

POWER WINDOW SWITCH DOES NOT ILLUMINATE		
< SYMPTOM DIAGNOSIS >		
POWER WINDOW SWITCH DOES NOT ILLUMINATE DRIVER SIDE		Α
,	INFOID:0000000012354043	В
1.REPLACE POWER WINDOW MAIN SWITCH		
Replace power window main switch. Refer to <a href="PWC-74">PWC-74</a> , "Removal and Installation".		С
NODECTION END		
>> INSPECTION END PASSENGER SIDE		D
PASSENGER SIDE : Diagnosis Procedure	INFOID:0000000012354044	
1.REPLACE FRONT POWER WINDOW SWITCH (PASSENGER SIDE)		Е
Replace front power window switch (passenger side).		
Refer to PWC-74, "Removal and Installation".		F
>> INSPECTION END		0
REAR LH		G
REAR LH : Diagnosis Procedure	INFOID:0000000012354045	Н
1.REPLACE REAR POWER WINDOW SWITCH LH		11
Replace rear power window switch LH. Refer to PWC-75, "Removal and Installation".		
>> INSPECTION END REAR RH		J
	INFOID:0000000012354046	PWC
1.REPLACE REAR POWER WINDOW SWITCH RH		
Replace rear power window switch RH. Refer to PWC-75, "Removal and Installation".		L
>> INSPECTION END		M
		Ν
		0
		Р

#### FRONT POWER WINDOW SWITCH

< REMOVAL AND INSTALLATION >

### REMOVAL AND INSTALLATION

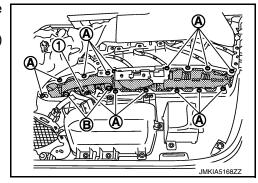
### FRONT POWER WINDOW SWITCH

#### Removal and Installation

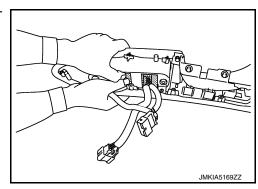
INFOID:0000000012354047

#### **REMOVAL**

- Remove the front door finisher.
   Refer to <u>INT-31</u>, "<u>FRONT DOOR FINISHER</u>: <u>Removal and Installation</u>".
- 2. Remove the armrest mounting screws (A), and then remove the armrest from the front door finisher.
- 3. Remove mounting screws (B) of power window main switch(1) from the armrest.



4. Push out and remove power window main switch from lower side, as shown in the figure.



#### **INSTALLATION**

Note the following items, and then install in the reverse order of removal.

#### NOTE:

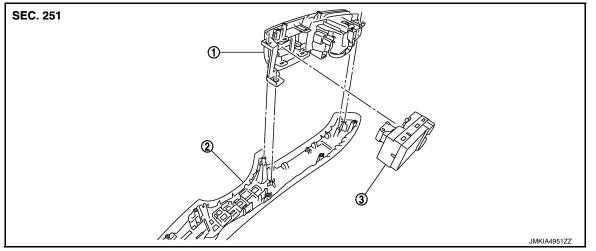
- If power window main switch or front power window switch (passenger side) is replaced or is removed, it is necessary to perform the initialization procedure. Refer to <a href="PWC-34">PWC-34</a>, "Description".
- The same procedure is also performed for front power window switch (passenger side).

#### **REAR POWER WINDOW SWITCH**

#### < REMOVAL AND INSTALLATION >

#### REAR POWER WINDOW SWITCH

#### **Exploded View**



1. Power window switch finisher

2. Rear armrest

3. Rear power window switch

#### Removal and Installation

#### **REMOVAL**

Remove the rear door finisher.
 Refer to <u>INT-34</u>, "<u>REAR DOOR FINISHER</u>: <u>Removal and Installation</u>".

- 2. Remove the armrest mounting screws (A), and then remove the armrest from the rear door finisher.
- 3. Remove grip finisher (2) from the armrest.
- 4. Remove mounting screws (B) of power window switch finisher (1) from the armrest. Remove power window switch finisher (1) from the armrest.
- 5. Disengage pawls of power window switch finisher (1) from rear power window switch (3), using remover tool. Remove rear power window switch(3).

#### **CAUTION:**

Never bend finisher pawls when removing switch.

#### INSTALLATION

Note the following items, and then install in the reverse order of removal.

#### NOTE

If rear power window switch is replaced or is removed, it is necessary to perform the initialization procedure. Refer to PWC-34, "Description".

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