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SECTION PWC

POWER WINDOW CONTROL SYSTEM

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000008463203

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.**

Service Procedure Precautions for Models with a Pop-up Roll Bar

INFOID:0000000008463204

WARNING:
Always observe the following items for preventing accidental activation.
- **Risk of passenger injury or death may increase if the pop-up roll bar does not deploy during a roll over collision. In order to reduce the chance of an incident where the pop-up roll bar is inoperative, all maintenance must be performed by a NISSAN or INFINITI dealer.**
- **Before removing and installing the pop-up roll bar component parts and harness, always turn the ignition switch OFF, disconnect the battery negative terminal, and wait for 3 minutes or more. (The purpose of this operation is to discharge electricity that is accumulated in the auxiliary power supply circuit in the air bag diagnosis sensor unit.)**
- **When repairing, removing, and installing a pop-up roll bar, always refer to SRS AIR BAG and SRS AIR BAG CONTROL warnings in the Service Manual.**

Precaution for Battery Service

INFOID:0000000008463205

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

SYSTEM DESCRIPTION
COMPONENT PARTS
Component Parts Location

INFOID:0000000008463206

JMKIA8282GB

1. Remote keyless entry receiver (front side)
   Refer to DLK-10, "DOOR LOCK SYSTEM : Component Parts Location"

2. BCM
   Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location"

3. Power window main switch

4. Front power window motor (driver side)

5. Front door lock assembly (driver side)
   Refer to DLK-10, "DOOR LOCK SYSTEM : Component Parts Location"

6. Front door switch (driver side)

7. Rear power window switch LH

8. Rear power window motor LH

9. Soft top control unit
   Refer to RF-9, "Component Parts Location"

PWC-5

COMPONENT PARTS

< SYSTEM DESCRIPTION >

10. Remote keyless entry receiver (rear side)
    Refer to DLK-10, "DOOR LOCK SYSTEM :
    Component Parts Location"

A. View with door finisher removed

B. View with rear side finisher removed

Component Description

INFOID:0000000008463207

Component	Function
BCM	• Supplies power to power window switch. • Controls retained power function. • Receives key ID from remote keyless entry receiver (front side/rear side).
Power window main switch	• Directly controls all power window motor of all doors. • Controls anti-pinch operation of power window.
Front power window switch (passenger side)	• Controls power window motor of front passenger side door. • Controls anti-pinch operation of power window.
Rear power window switch (LH & RH)	Controls power window motor of rear right and left window.
Front power window motor (driver side)	• Integrates the encoder and power window motor. • Starts operating with signals from power window main switch. • Outputs front power window motor (driver side) rotation as a pulse signal to power window main switch.
Front power window motor (passenger side)	• Integrates the encoder and power window motor. • Starts operating with signals from power window main switch and front power window switch (passenger side). • Outputs front power window motor (passenger side) rotation as a pulse signal to front power window switch (passenger side).
Rear power window motor (LH & RH)	• Integrates the encoder and power window motor. • Starts operating with signals from power window main switch and rear power window switch (LH & RH). • Outputs rear power window motor (LH & RH) rotation as a pulse signal to rear power window switch (LH & RH).
Front door lock assembly (driver side) (door key cylinder switch)	Transmits operation condition of key cylinder switch to power window.
Remote keyless entry receiver (front side/rear side)	Receives key ID signal from the Intelligent Key, and then transmits to BCM.
Soft top control unit	• Prohibits operation of all power windows while roof is being operated. • Operates AUTO-DOWN of all power windows before roof is operated.
Front door switch	Detects door open/close condition and transmits to BCM.

SYSTEM

System Diagram

INFOID:0000000008463208

JMKIA8314GB
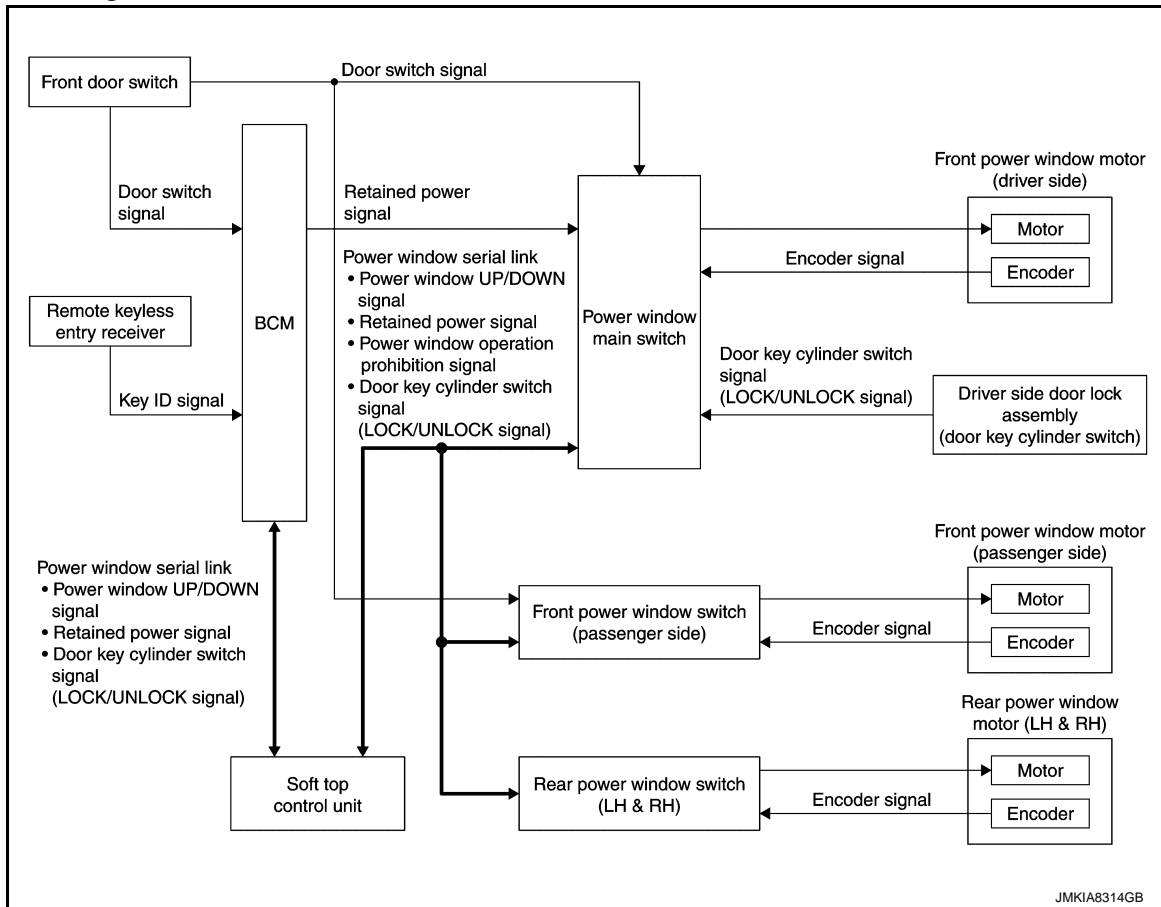
System Description

INFOID:0000000008463209

- Power window system is activated by power window switch when ignition switch turns ON, or during the retained power function after ignition switch turns OFF.
- Power window main switch opens/closes all door glass.
- Front and rear power window switch can open/close the corresponding door glass.
- AUTO UP/DOWN operation can be performed when front power window switch turns to AUTO.
- Power window lock switch can lock all power windows other than driver seat.
- Power window serial link transmits the signals from power window main switch to front power window switch (passenger side) and rear power window switch (LH & RH).
- If door glass receives resistance that is the specified value or more while power window of front seat is in AUTO-UP operation, power window of front seat operates in the reverse direction.
- Hold the door key cylinder to the LOCK or UNLOCK direction for 1.5seconds or more to OPEN or CLOSE from power window when ignition switch OFF.
- All power windows open when pressing Intelligent Key unlock button for 3 seconds.
- Power window serial link transmits and receives signal between soft top control unit, power window main switch, front power window switch (passenger side), and rear power window switch (LH & RH).
- Power window system operation links with soft top system. Refer to RF-14, "SOFT TOP SYSTEM : System Description".

POWER WINDOW AUTO OPERATION

- AUTO UP/DOWN operation can be performed when front 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.

SYSTEM

< SYSTEM DESCRIPTION >

• For rear power window motor, only AUTO-DOWN operation is operative.

POWER WINDOW SIMULTANEOUS FUNCTION

All door glass moves up (down) when driver side power window switch and front passenger side power window switch of power window main switch are simultaneously pulled (pressed) in AUTO position.
NOTE:
This function is adopted in consideration of convenience after all door glass is closed (open).

RETAINED POWER FUNCTION

Retained power function is an additional power supply function that enables power window system to operate for 45 seconds after ignition switch turns OFF.

Retained Power Function Cancel Conditions
• Front door CLOSE (door switch OFF) → OPEN (door switch ON).
• When ignition switch turns ON again.
• When timer times out (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.

POWER WINDOW SERIAL LINK

All power window switches, soft top control unit, and BCM transmit and receive the signal by power window serial link.
The signal mentioned below is transmitted from BCM to soft top control unit.
• Power window down signal
• Retained power operation signal
The signal mentioned below is transmitted from soft top control unit to power window main switch.
• Power window down signal
• Power window operation prohibition signal
The signal mentioned below is transmitted from power window main switch to front power window switch (passenger side) and rear power window switch (LH & RH).
• Passenger side door window and rear side window (LH & RH) operation signal
• Power window control by door key cylinder switch signal
• Retained power operation signal
• Power window lock signal
The signal mentioned below is transmitted from power window main switch to BCM via soft top control unit.
• Power window control by door key cylinder switch signal
• Power window lock signal
• Door lock/unlock signal

ANTI-PINCH SYSTEM

• Pinch the foreign matter in the door glass during AUTO-UP operation is the anti-pinch function that lowers the door glass 150 mm (5.9 in) when detected.
• Encoder continues detecting the movement of power window motor and transmits to power window switch as the encoder pulse signal while power window motor is operating.
• Resistance is applied to the power window motor rotation that changes the frequency of encoder pulse signal if foreign material is trapped in the door glass.
• Power window switch controls to lower the door glass for 150 mm (5.9 in) after it detects encoder pulse signal frequency change.

Operation Condition
When front 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.

AUTOMATIC WINDOW ADJUSTING FUNCTION

• When the driver/passenger door(s) is opened, the window of the opened door is lowered approximately 10 mm (0.39 in).
• When the door is closed, the window is raised to the fully closed position.
• Automatic window adjusting function system (opening operation) does not operate when the following item occurs.

- The window is 10 mm (0.39 in) or more open from the fully closed position.

DOOR KEY CYLINDER SWITCH POWER WINDOW FUNCTION

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 glass.
- 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 function 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-35, "INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)".

Fail-safe

INFOID:0000000008463210

FAIL-SAFE CONTROL

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

Error	Error condition
Pulse sensor malfunction	When only one side of pulse signal is being detected for more than the specified value.
Both pulse sensors malfunction	When both pulse signals have not been detected for more than the specified value during glass open/close operation.
Pulse direction malfunction	When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction.
Glass recognition position malfunction 1	When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value.
Glass recognition position malfunction 2	When it detects pulse count more than the value of glass full stroke during glass open/close operation.

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

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

DIAGNOSIS SYSTEM (BCM)
COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000008968081

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.

×: Applicable item

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

NOTE:

*: This item is displayed, but 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.

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	
Vehicle Condition	SLEEP>LOCK	Power position status of the moment a particular DTC is detected	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		While turning power supply position from "OFF" to "LOCK"*
	OFF>ACC		While turning power supply position from "OFF" to "ACC"
	ON>CRANK		While turning power supply position from "IGN" to "CRANKING"
	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"*
	OFF		Power supply position is "OFF" (Ignition switch OFF)
	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	The number of times that ignition switch is turned ON after DTC is detected • The number is 0 when a malfunction is detected now. • The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. • The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.	

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".

RETAINED PWR

RETAINED PWR : CONSULT Function (BCM - RETAINED PWR)

INFOID:0000000008463212

Data monitor
NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

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.

ECU DIAGNOSIS INFORMATION

BCM, SOFT TOP CONTROL UNIT

List of ECU Reference

INFOID:0000000008463213

ECU	Reference
BCM	BCS-32, "Reference Value"
	BCS-54, "Fail-safe"
	BCS-54, "DTC_Inspection_Priority_Chart"
	BCS-55, "DTC_Index"
Soft top control unit	RF-45, "Reference Value"
	RF-54, "Fail-safe"
	RF-55, "DTC_Inspection_Priority_Chart"
	RF-57, "DTC_Index"

POWER WINDOW MAIN SWITCH
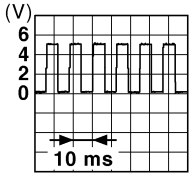
Reference Value

INFOID:000000008463214

TERMINAL LAYOUT
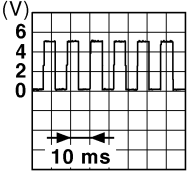
LIIA2455E

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Voltage (V) (Approx.)
+	-	Signal name	Input/Output		
2 (W)	Ground	Encoder ground	—	—	0
4 (L)	Ground	Door key cylinder switch (driver side) LOCK signal	Input	Key position (Neutral → Locked)	5 → 0
5 (R)	Ground	Front door switch (driver side) signal	Input	OFF (when driver side door closed)	JPMIA0011GB
				ON (when driver side door opened)	0
6 (R)	Ground	Door key cylinder switch (driver side) UNLOCK signal	Input	Key position (Neutral → Unlocked)	5 → 0
8 (L)	Ground	Front power window motor (driver side) UP signal	Output	When front LH switch in power window main switch is in UP operation.	12
9 (G)	Ground	Encoder pulse signal 2	Input	When front power window motor (driver side) operates.	JMKIA0070GB
10 (V)	Ground	Retained power signal	Input	Ignition switch ON	12
				Within 45 seconds after ignition switch is turned to OFF.	12
				When driver side or passenger side door is opened during retained power operation.	0

Terminal No. (Wire color)		Description		Condition	Voltage (V) (Approx.)
+	-	Signal name	Input/ Output		
11 (LG)	Ground	Front power window motor (driver side) DOWN signal	Output	When front LH switch in power window main switch is in DOWN operation.	12
13 (Y)	Ground	Encoder pulse signal 1	Input	When front power window motor (driver side) operates.	JMKIA0070GB
14 (O)	Ground	Power window serial link	Input/ Output	Ignition switch ON or power window timer operating.	JPMIA0013GB
15 (R)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates.	12
17 (B)	Ground	Ground	—	—	0
19 (LG)	Ground	Battery power supply	Input	Ignition switch OFF	12

Fail-safe

INFOID:0000000008463215

FAIL-SAFE CONTROL

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

Error	Error condition
Pulse sensor malfunction	When only one side of pulse signal is being detected for more than the specified value.
Both pulse sensors malfunction	When both pulse signals have not been detected for more than the specified value during glass open/close operation.
Pulse direction malfunction	When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction.
Glass recognition position malfunction 1	When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value.
Glass recognition position malfunction 2	When it detects pulse count more than the value of glass full stroke during glass open/close operation.

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

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

FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

Reference Value

INFOID:000000008463216

TERMINAL LAYOUT
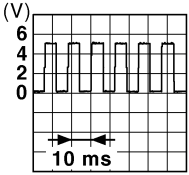
LIIA2454E

PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	-	Signal name	Input/ Output		
3 (W)	Ground	Encoder ground	—	—	0
4 (R)	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 RH switch in power window main switch is in UP operation.	12
9 (LG)	Ground	Front power window motor (passenger side) DOWN signal	Output	When front RH switch in power window main switch is in DOWN operation.	12
10 (P)	Ground	Battery power supply	Input	Ignition switch OFF	12
11 (B)	Ground	Ground	—	—	0
12 (Y)	Ground	Encoder pulse signal 1	Input	When front power window motor (passenger side) operates.	JMKIA0070GB
14 (R)	Ground	Front door switch (passenger side) signal	Input	OFF (when passenger side door closed)	JPMIA0011GB
				ON (when passenger side door opened)	0

FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		Condition	Voltage [V] (Approx.)
+	-	Signal name	Input/ Output		
15 (G)	Ground	Encoder pulse signal 2	Input	When front power window motor (passenger side) operates.	(V) 6 4 2 0 10 ms JMKIA0070GB
16 (O)	Ground	Power window serial link	Input/ Output	Ignition switch ON or power window timer operating.	(V) 15 10 5 0 10 ms JPMIA0013GB

Fail-safe

INFOID:0000000008463217

FAIL-SAFE CONTROL

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

Error	Error condition
Pulse sensor malfunction	When only one side of pulse signal is being detected for more than the specified value.
Both pulse sensors malfunction	When both pulse signals have not been detected for more than the specified value during glass open/ close operation.
Pulse direction malfunction	When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction.
Glass recognition position malfunction 1	When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value.
Glass recognition position malfunction 2	When it detects pulse count more than the value of glass full stroke during glass open/close operation.

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

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

REAR POWER WINDOW SWITCH LH

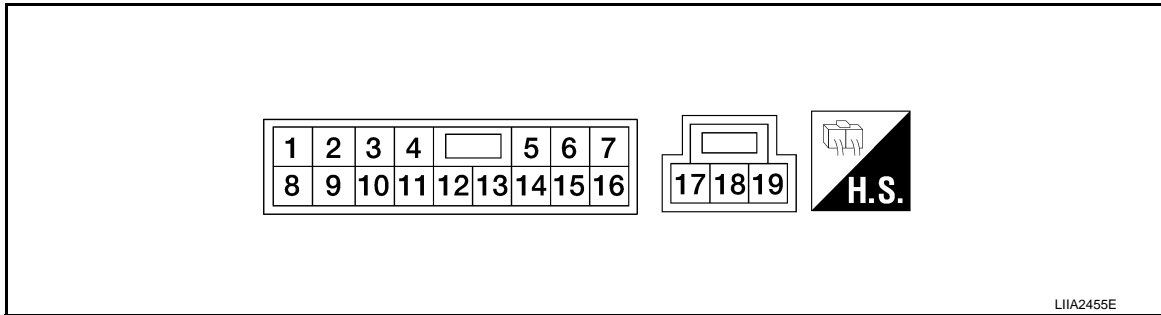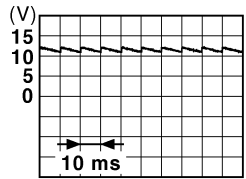< ECU DIAGNOSIS INFORMATION >

REAR POWER WINDOW SWITCH LH
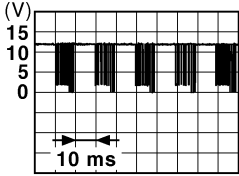
Reference Value

INFOID:000000008463218

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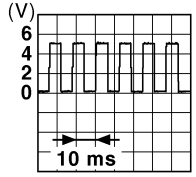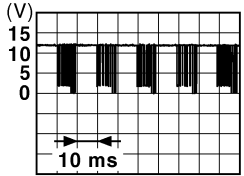
LIIA2454E

PHYSICAL VALUES

Terminal No. (wire color)		Description		Condition	Voltage [V] (Approx.)
+	-	Signal name	Input/ Output		
3 (W)	Ground	Encoder ground	—	—	0
4 (R)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates.	12
8 (L)	Ground	Rear power window motor LH UP signal	Output	When rear LH switch in power window main switch is in UP operation.	12
9 (LG)	Ground	Rear power window motor LH DOWN signal	Output	When rear LH switch in power window main switch is in DOWN operation.	12
10 (P)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
11 (B)	Ground	Ground	—	—	0
12 (Y)	Ground	Encoder pulse signal 1	Input	When rear power window motor LH operates.	

Terminal No. (wire color)		Description		Condition	Voltage [V] (Approx.)
+	-	Signal name	Input/Output		
15 (O)	Ground	Encoder pulse signal 2	Input	When rear power window motor LH operates.	(V) 6 4 2 0 →‖← 10 ms JMKIA0070GB
16 (G)	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

INFOID:0000000008463219

FAIL-SAFE CONTROL

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

Error	Error condition
Pulse sensor malfunction	When only one side of pulse signal is being detected for more than the specified value.
Both pulse sensors malfunction	When both pulse signals have not been detected for more than the specified value during glass open/close operation.
Pulse direction malfunction	When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction.
Glass recognition position malfunction 1	When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value.
Glass recognition position malfunction 2	When it detects pulse count more than the value of glass full stroke during glass open/close operation.

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

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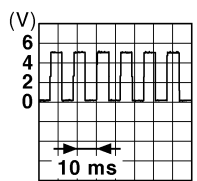
REAR POWER WINDOW SWITCH RH

Reference Value

INFOID:000000008463220

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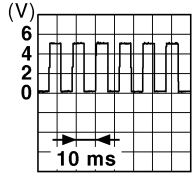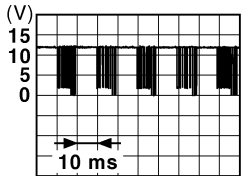
1	2	3	4		5	6	7
8	9	10	11	12	13	14	15	16

H.S.

LIIA2454E

PHYSICAL VALUES

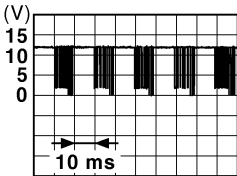| Terminal No. (wire color) +	Terminal No. (wire color) -	Description Signal name	Description Input/Output	Condition	Voltage [V] (Approx.)
3 (W)	Ground	Encoder ground	—	—	0
4 (R)	Ground	Encoder power supply	Output	When ignition switch ON or power window timer operates.	12
8 (L)	Ground	Rear power window motor RH UP signal	Output	When rear RH switch in power window main switch is in UP operation.	12
9 (LG)	Ground	Rear power window motor RH DOWN signal	Output	When rear RH switch in power window main switch is in DOWN operation.	12
10 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
11 (B)	Ground	Ground	—	—	0
12 (Y)	Ground	Encoder pulse signal 1	Input	When rear power window motor RH operates.	(V) 6 4 2 0 ←→ 10 ms JMKIA0070GB

REAR POWER WINDOW SWITCH RH

< ECU DIAGNOSIS INFORMATION >

Terminal No. (wire color)		Description		Condition	Voltage [V] (Approx.)
+	-	Signal name	Input/ Output		
15 (G)	Ground	Encoder pulse signal 2	Input	When rear power window motor RH operates.	(V) 6 4 2 0 ← 10 ms → JMKIA0070GB
16 (G)	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

INFOID:0000000008463221

FAIL-SAFE CONTROL

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

Error	Error condition
Pulse sensor malfunction	When only one side of pulse signal is being detected for more than the specified value.
Both pulse sensors malfunction	When both pulse signals have not been detected for more than the specified value during glass open/close operation.
Pulse direction malfunction	When the pulse signal that is detected during glass open/close operation detects the opposite condition of power window motor operating direction.
Glass recognition position malfunction 1	When it detects the error between glass fully closed position in power window switch memory and actual fully closed position during glass open/close operation is more than the specified value.
Glass recognition position malfunction 2	When it detects pulse count more than the value of glass full stroke during glass open/close operation.

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

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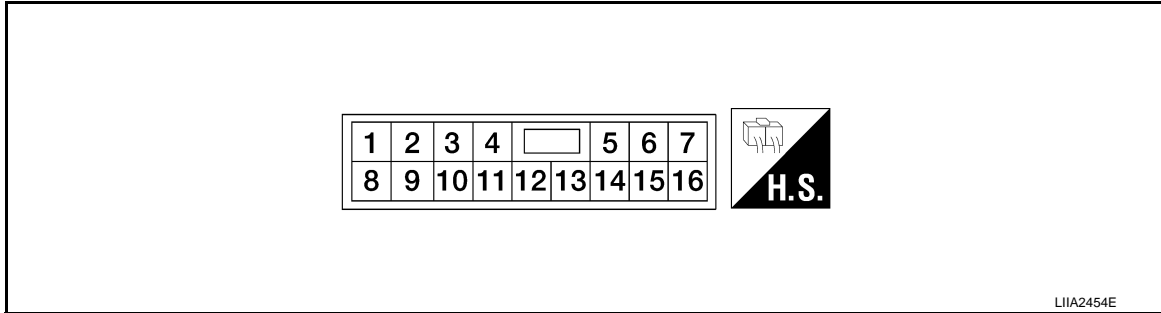
WIRING DIAGRAM

POWER WINDOW SYSTEM

Wiring Diagram

INFOID:0000000008463222

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

JRKWC1073GB
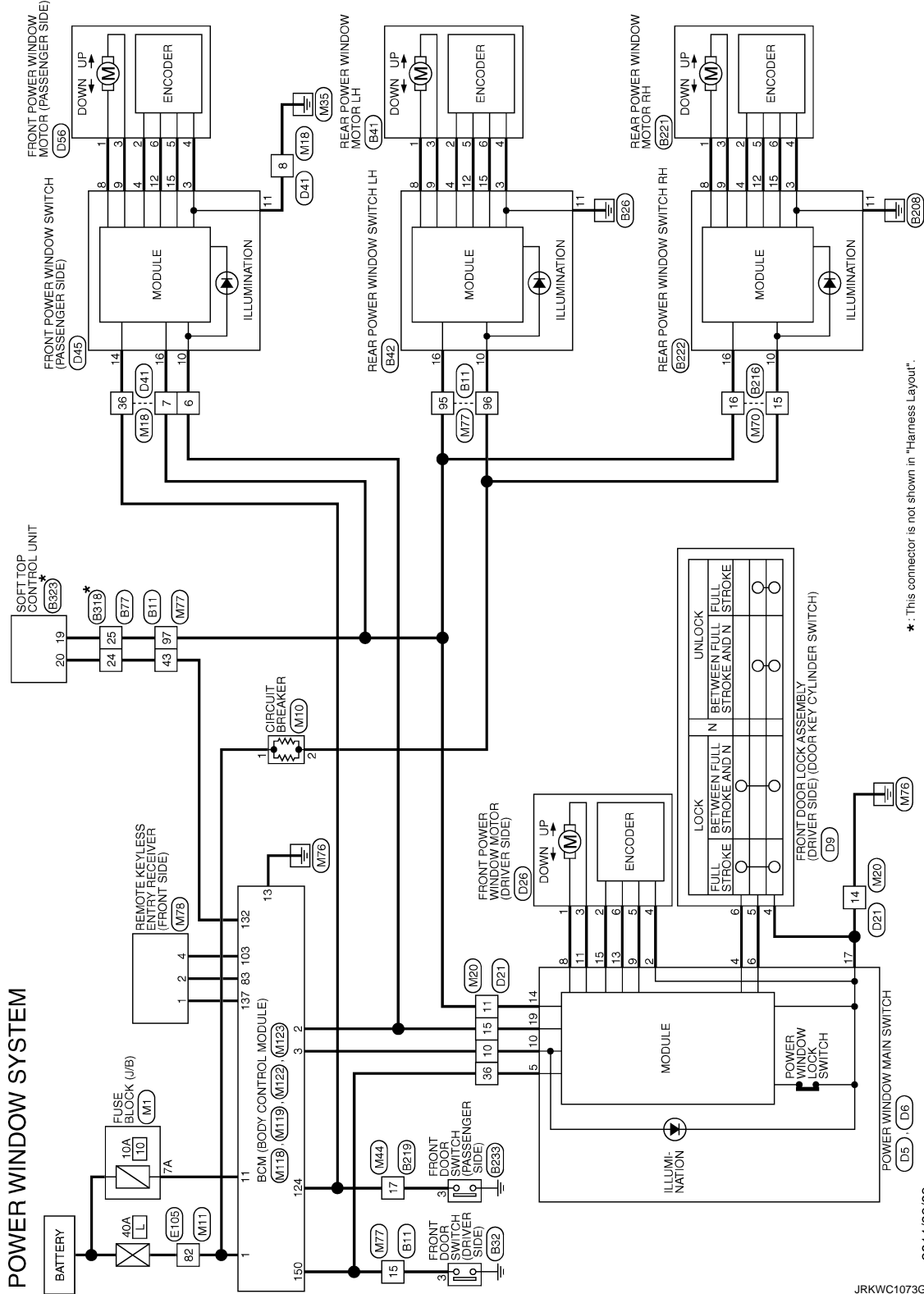
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000008463223

1.OBTAIN INFORMATION ABOUT SYMPTOM

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

>> GO TO 2.

2.REPRODUCE THE MALFUNCTION INFORMATION

Check the malfunction on the vehicle that the customer describes.
Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 3.

3.IDENTIFY THE MALFUNCTIONING SYSTEM WITH "SYMPTOM DIAGNOSIS"

Use "Symptom diagnosis" from the symptom inspection result in step 2 and then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 4.

4.IDENTIFY THE MALFUNCTIONING PARTS WITH "DTC/CIRCUIT DIAGNOSIS"

Perform the diagnosis with "DTC/CIRCUIT DIAGNOSIS" of the applicable system.

>> GO TO 5.

5.REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> 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.

Are the malfunctions corrected?

YES   >> INSPECTION END
NO   >> GO TO 3.

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

Description

INFOID:0000000008463224

When the battery negative terminal is disconnected, the initialization is necessary for normal operation of power window system.
CAUTION:
The following specified operations can not be performed under the non-initialized condition.
• **Auto-up operation**
• **Anti-pinch function**
• **Automatic window adjusting function**

Work Procedure

INFOID:0000000008463225

1.SYSTEM INITIALIZATION

Perform system initialization. Refer to PWC-26, "Work Procedure".

>> GO TO 2.

2.CHECK ANTI-PINCH FUNCTION

Check anti-pinch function. Refer to PWC-27, "Work Procedure".

>> END

ADDITIONAL SERVICE WHEN REPLACING POWER WINDOW SWITCH

< BASIC INSPECTION >

ADDITIONAL SERVICE WHEN REPLACING POWER WINDOW SWITCH

Description

INFOID:0000000008463226

When the power window main switch or front power window switch (passenger side) replaced, the initialization in necessary for normal operation of power window system.
CAUTION:
The following specified operations can not be performed under the non-initialized condition.
• **Auto-up operation**
• **Anti-pinch function**
• **Automatic window adjusting function**

Work Procedure

INFOID:0000000008463227

1.SYSTEM INITIALIZATION

Perform system initialization. Refer to <u>PWC-26, "Work Procedure"</u>.

>> GO TO 2.

2.CHECK ANTI-PINCH FUNCTION

Check anti-pinch function. Refer to <u>PWC-27, "Work Procedure"</u>.

>> END

SYSTEM INITIALIZATION

Description

INFOID:0000000008463228

If any of the following operations are performed, the initialization is necessary for normal operation of power window system.
- Disconnection and connection of battery cable from negative terminal.
- When power window main switch or front power window switch (passenger side) replaced.
- Electric power supply to power window main switch or front power window switch (passenger side) or power window motor (driver side/passenger side) is interrupted by blown fuse or disconnection and connection of the negative terminal of battery, etc.
- Disconnection and connection of power window main switch or front power window switch (passenger side) harness connector.
- Removal of power window motor (driver side/passenger side) from module assembly.
- Operation of module assembly as an independent unit.
- Removal of regulator assembly from module assembly.
- Removal and installation of glass.
- Removal and installation of weather-strip.
- Removal and installation of door glass run.

CAUTION:
The following specified operations can not be performed under the non-initialized condition.
- **Auto-up operation**
- **Anti-pinch function**
- **Automatic window adjusting function**

Work Procedure

INFOID:0000000008463229

1.STEP 1

1. Turn ignition switch ON.
2. Close roof.
3. Operate power window switch to fully open the window. (This operation is unnecessary if the window is already fully open)
4. 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.
5. Check that AUTO-UP function operates normally.

>> GO TO 2.

2.STEP 2

Check anti-pinch function. Refer to PWC-27, "Work Procedure".

>> END

CHECK ANTI-PINCH FUNCTION

Description

If any of the following operations are performed, the initialization is necessary for normal operation of anti-pinch function.
- Disconnection and connection of battery cable from negative terminal.
- When power window main switch or front power window switch (passenger side) replaced.
- Electric power supply to power window main switch or front power window switch (passenger side) or power window motor (driver side/passenger side) is interrupted by blown fuse or disconnection and connection of the negative terminal of battery, etc.
- Disconnection and connection of power window main switch or front power window switch (passenger side) harness connector.
- Removal of power window motor (driver side/passenger side) from regulator assembly.
- Operation of regulator assembly as an independent unit.
- Removal and installation of glass.
- Removal and installation of door glass run.

Work Procedure

1.CHECK ANTI-PINCH FUNCTION

1. Fully open the door window.
2. Place a piece of wood near fully closed position.
3. Close door glass completely with AUTO-UP.
4. Check the following conditions.
- 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 or front power window switch (passenger side) while lowering.
    CAUTION:
    - **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.**
    - **Do not check with hands and other body parts because they may be pinched. Do not get pinched.**

    >> END

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT
POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH : Diagnosis Procedure

INFOID:0000000008463232

1.CHECK POWER SUPPLY

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

(+)		(−)	Condition		Voltage (V) (Approx.)
Power window main switch					
Connector	Terminal				
D5	10	Ground	Ignition switch	ON	12
D6	19			OFF	

Is the inspection result normal?

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

2.CHECK POWER SUPPLY CIRCUIT

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

BCM		Power window main switch		Continuity
Connector	Terminal	Connector	Terminal	
M118	2	D6	19	Existed
	3	D5	10	

4. Check continuity between BCM harness connector and ground.

BCM			Continuity
Connector	Terminal	Ground	
M118	2		Not existed
	3		

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-77, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK GROUND CIRCUIT

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

Power window main switch			Continuity
Connector	Terminal	Ground	
D6	17		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness.

FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT POWER WINDOW SWITCH (PASSENGER SIDE) : Diagnosis Procedure

INFOID:0000000008463233

1.CHECK POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect front power window switch (passenger side) connector.
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		
D45	10	Ground	12

Is the inspection result normal?

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

2.CHECK POWER SUPPLY CIRCUIT

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

BCM		Front power window switch (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
M118	2	D45	10	Existed

3. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M118	2		Not existed

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-77, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK GROUND CIRCUIT

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

Front power window switch (passenger side)		Ground	Continuity
Connector	Terminal		
D45	11		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness.

REAR POWER WINDOW SWITCH

REAR POWER WINDOW SWITCH : Diagnosis Procedure

INFOID:0000000008463234

1.CHECK FUSIBLE LINK

Check that the following fusible link is not fusing.

Signal name	Fusible link No.
Battery power supply	L (40 A)

Is the inspection result normal?

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

2.CHECK POWER SUPPLY

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

(+)			(−)	Voltage (V) (Approx.)
Rear power window switch				
Connector		Terminal		
LH	B42	10	Ground	Battery voltage
RH	B222			

Is the inspection result normal?

YES   >> GO TO 3.
NO-1   >> Repair or replace harness between rear power window switch and fusible link L (40 A).
NO-2   >> Check circuit breaker and replace it if necessary.

3.CHECK GROUND CIRCUIT

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

Rear power window switch			Ground	Continuity
Connector		Terminal		
LH	B42	11		Existed
RH	B222			

Is the inspection result normal?

YES   >> INSPECTION END
NO   >> Repair or replace harness.

POWER WINDOW MOTOR
DRIVER SIDE

DRIVER SIDE : Component Function Check

INFOID:0000000008463235

1. CHECK FUNCTION

Check front power window motor (driver side) operation with power window main switch.
Is the inspection result normal?

YES >> INSPECTION END
NO >> Refer to PWC-31, "DRIVER SIDE : Diagnosis Procedure".

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000008463236

1. CHECK POWER WINDOW MOTOR (DRIVER SIDE) 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 power window motor (driver side) harness connector and ground.

| (+) | | | | | Voltage (V) (Approx.) |
| Front power window motor (driver side) | | (–) | Condition | | |
Connector	Terminal				
D26	1	Ground	Power window main switch (front LH switch)	NEUTRAL	0
				UP	12
	3			NEUTRAL	0
				DOWN	12

Is the inspection result normal?

YES >> Replace front power window motor (driver side). Refer to GW-30, "Removal and Installation".
NO >> GO TO 2.

2. CHECK POWER WINDOW MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. 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 window main switch | | Front power window motor (driver side) | | Continuity |
Connector	Terminal	Connector	Terminal	
D5	8	D26	1	Existed
	11		3	

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

| Power window main switch | | | Continuity |
Connector	Terminal		
D5	8	Ground	Not existed
	11		

Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".
NO >> Repair or replace harness.

PASSENGER SIDE

POWER WINDOW MOTOR

< DTC/CIRCUIT DIAGNOSIS >

PASSENGER SIDE : Component Function Check

INFOID:0000000008463237

1. CHECK FUNCTION

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 >> IMSPECTION END
NO >> Refer to PWC-32, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000008463238

1. CHECK FRONT POWER WINDOW MOTOR (PASSENGER SIDE) INPUT SIGNAL

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

(+)		(−)	Condition		Voltage (V) (Approx.)
Front power window motor (passenger side)					
Connector	Terminal				
D56	1	Ground	Front power window switch (passenger side)	MEUTRAL	0
				UP	12
	3			MEUTRAL	0
				DOWN	12

Is the inspection result normal?

YES >> Replace front power window motor (passenger side). Refer to GW-30, "Removal and Installation".
NO >> GO TO 2.

2. CHECK FRONT POWER WINDOW MOTOR (PASSENGER SIDE) CIRCUIT

1. Turn ignition switch OFF.
2. 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 switch (passenger side)		Front power window motor (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
D45	8	D56	1	Existed
	9		3	

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

Front power window switch (passenger side)			Continuity
Connector	Terminal	Ground	
D45	8		Not existed
	9		

Is the inspection result normal?

YES >> Replace front power window switch (passenger side). Refer to PWC-66, "Removal and Installation".
NO >> Repair or replace harness.

REAR LH

POWER WINDOW MOTOR

< DTC/CIRCUIT DIAGNOSIS >

REAR LH : Component Function Check

INFOID:0000000008463239

1.CHECK FUNCTION

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

Is the inspection result normal?

    YES   >> INSPECTION END
    NO   >> Refer to PWC-33, "REAR LH : Diagnosis Procedure".

REAR LH : Diagnosis Procedure

INFOID:0000000008463240

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.

(+)		(−)	Condition		Voltage (V) (Approx.)
Rear power window motor LH					
Connector	Terminal				
B41	1	Ground	Rear power window switch LH	NEUTRAL	0
				UP	12
	3			NEUTRAL	0
				DOWN	12

Is the inspection result normal?

    YES   >> Replace rear power window motor LH. Refer to GW-16, "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.
3. Check continuity between rear power window switch LH harness connector and rear power window motor LH harness connector.

Rear power window switch LH		Rear power window motor LH		Continuity
Connector	Terminal	Connector	Terminal	
B42	8	B41	1	Existed
	9		3	

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

Rear power window switch LH			Continuity
Connector	Terminal		
B42	8	Ground	Not existed
	9		

Is the inspection result normal?

    YES   >> Replace rear power window switch LH. Refer to PWC-66, "Removal and Installation".
    NO   >> Repair or replace harness.

REAR RH

REAR RH : Component Function Check

INFOID:0000000008463241

1. CHECK FUNCTION

POWER WINDOW MOTOR

< 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 >> INSPECTION END
NO >> Refer to PWC-34, "REAR RH : Diagnosis Procedure".

REAR RH : Diagnosis Procedure

INFOID:0000000008463242

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.

(+)		(−)	Condition		Voltage (V) (Approx.)
Rear power window motor RH					
Connector	Terminal				
B221	1	Ground	Rear power window switch RH	NEUTRAL	0
				UP	12
	3			NEUTRAL	0
				DOWN	12

Is the inspection result normal?

YES >> Replace rear power window motor RH. Refer to GW-16, "Removal and Installation".
NO >> GO TO 2.

2.CHECK POWER WINDOW MOTOR CIRCUIT

1. 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	
B222	8	B221	1	Existed
	9		3	

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

Rear power window switch RH			Continuity
Connector	Terminal	Ground	
B222	8		Not existed
	9		

Is the inspection result normal?

YES >> Replace rear power window switch RH. Refer to PWC-66, "Removal and Installation".
NO >> Repair or replace harness.

ENCODER CIRCUIT
DRIVER SIDE

DRIVER SIDE : Component Function Check
INFOID:0000000008463243

1.CHECK FUNCTION

Check that driver side door glass perform AUTO UP/DOWN operation normally when power window main switch is operated.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Refer to PWC-35, "DRIVER SIDE : Diagnosis Procedure".

DRIVER SIDE : Diagnosis Procedure
INFOID:0000000008463244

1.CHECK ENCODER SIGNAL

1. Turn ignition switch ON.
2. Check signal between power window main switch harness connector and ground using an oscilloscope.

(+)		(−)	Signal (Reference value)
Power window main switch			
Connector	Terminal		
D5	9	Ground	Refer to following signal
	13		

Window UP
(Encoder signal 2 starts 1/4 pulses earlier)

Window DOWN
(Encoder signal 1 starts 1/4 pulses earlier)

JMKIA5210GB

Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-66, "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	
D5	9	D26	5	Existed
	13		6	

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

Power window main switch		Ground	Continuity
Connector	Terminal		
D5	9		Not existed
	13		

Is the inspection result normal?

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

3.CHECK ENCORDER POWER SUPPLY

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

(+)		(–)	Voltage (V) (Approx.)
Front power window motor (driver side)			
Connector	Terminal		
D26	2	Ground	12

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 4.

4.CHECK ENCORDER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. 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 window main switch		Front power window motor (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
D5	15	D26	2	Existed

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

Power window main switch		Ground	Continuity
Connector	Terminal		
D5	15		Not existed

Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".
NO >> Repair or replace harness.

5.CHECK GROUND CIRCUIT 1

1. Turn ignition switch OFF.
2. 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 window main switch		Front power window motor (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
D5	2	D26	4	Existed

Is the inspection result normal?

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

6.CHECK GROUND CIRCUIT 2

ENCODER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

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

Power window main switch		Ground	Continuity
Connector	Terminal		
D5	2		Existed

Is the inspection result normal?

YES >> Replace front power window motor (driver side). Refer to GW-30, "Removal and Installation".
NO >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".

PASSENGER SIDE

PASSENGER SIDE : Component Function Check

INFOID:0000000008463245

1.CHECK FUNCTION

Check that front passenger side door glass perform AUTO UP/DOWN operation normally when front power window switch (passenger side) is operated.

Is the inspection result normal?

YES >> INSPECTION END
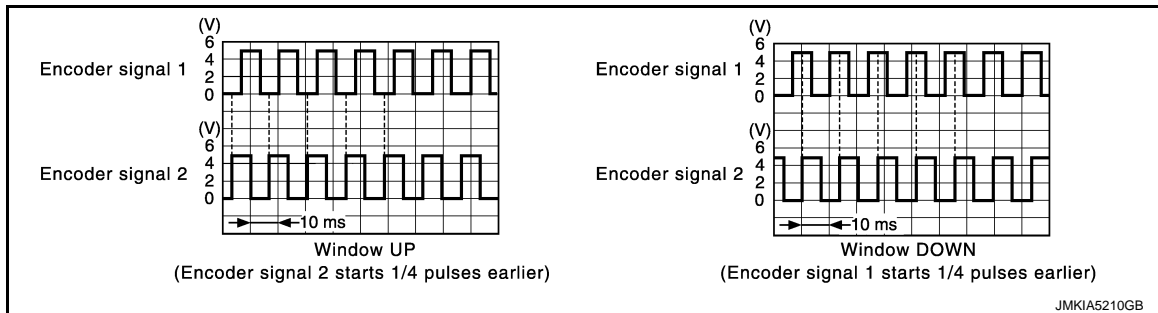NO >> Refer to PWC-37, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000008463246

1.CHECK ENCODER SIGNAL

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

(+)		(−)	Signal (Reference value)
Front power window switch (passenger side)			
Connector	Terminal		
D45	12	Ground	Refer to following signal
	15		

Encoder signal 1 / Encoder signal 2
(V) 6 4 2 0
10 ms
Window UP
(Encoder signal 2 starts 1/4 pulses earlier)

Window DOWN
(Encoder signal 1 starts 1/4 pulses earlier)

JMKIA5210GB

Is the inspection result normal?

YES >> Replace front power window switch (passenger side). Refer to PWC-66, "Removal and Installation".
NO >> GO TO 2.

2.CHECK ENCORDER SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front power window switch (passenger side) connector and front power window motor (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 switch (passenger side)		Front power window motor (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
D45	12	D56	6	Existed
	15		5	

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

Front power window switch (passenger side)		Ground	Continuity
Connector	Terminal		
D45	12		Not existed
	15		

Is the inspection result normal?

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

3.CHECK ENCORDER POWER SUPPLY

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.

(+)		(−)	Voltage (V) (Approx.)
Front power window motor (passenger side)			
Connector	Terminal		
D56	2	Ground	12

Is the inspection result normal?

YES   >> GO TO 5.
NO   >> GO TO 4.

4.CHECK ENCODER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. 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 switch (passenger side)		Front power window motor (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
D45	4	D56	2	Existed

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

Front power window switch (passenger side)		Ground	Continuity
Connector	Terminal		
D45	4		Not existed

Is the inspection result normal?

YES   >> Replace front power window switch (passenger side). Refer to PWC-66, "Removal and Installation".
NO   >> Repair or replace harness.

5.CHECK GROUND CIRCUIT 1

1. Turn ignition switch OFF.
2. 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 switch (passenger side)		Front power window motor (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
D45	3	D56	4	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.
2. Check continuity between front power window switch (passenger side) harness connector and ground.

Front power window switch (passenger side)		Ground	Continuity
Connector	Terminal		
D45	3		Existed

Is the inspection result normal?

YES   >> Replace front power window motor (passenger side). Refer to GW-30, "Removal and Installation".
NO   >> Replace front power window switch (passenger side). Refer to PWC-66, "Removal and Installation".

REAR LH

REAR LH : Component Function Check

INFOID:0000000008463247

1.CHECK FUNCTION

Check that rear door LH glass performs AUTO DOWN operation normally when rear power window switch LH is operated.

Is the inspection result normal?

YES   >> INSPECTION END
NO   >> Refer to PWC-39, "REAR LH : Diagnosis Procedure".

REAR LH : Diagnosis Procedure

INFOID:0000000008463248

1.CHECK ENCODER SIGNAL

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

(+)		(−)	Signal (Reference value)
Rear power window switch LH			
Connector	Terminal		
B42	12	Ground	Refer to following signal
	15		

Encoder signal 1
Encoder signal 2
10 ms
Window UP
(Encoder signal 2 starts 1/4 pulses earlier)

Encoder signal 1
Encoder signal 2
10 ms
Window DOWN
(Encoder signal 1 starts 1/4 pulses earlier)

JMKIA5210GB
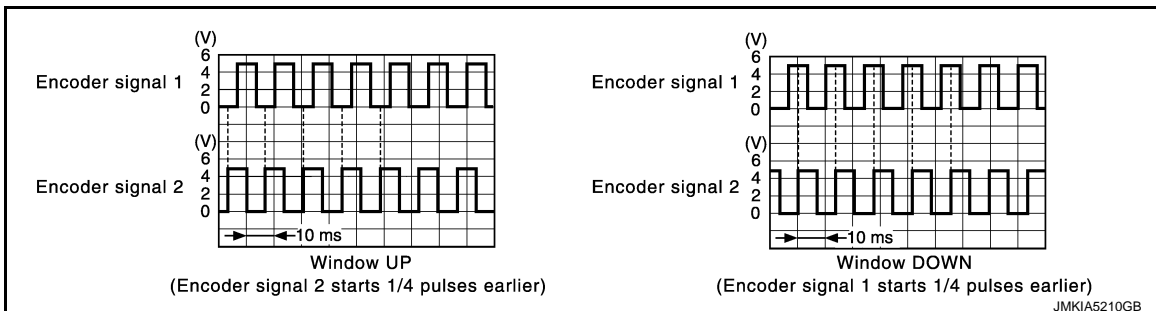
Is the inspection result normal?

YES   >> Replace rear power window switch LH. Refer to PWC-66, "Removal and Installation".

NO >> GO TO 2.

2.CHECK ENCODER 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 window switch LH		Rear power window motor LH		Continuity
Connector	Terminal	Connector	Terminal	
B42	12	B41	5	Existed
	15		6	

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

Rear power window switch LH		Ground	Continuity
Connector	Terminal		
B42	12		Not existed
	15		

Is the inspection result normal?

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

3.CHECK ENCODER POWER SUPPLY

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.

(+)		(−)	Voltage (V) (Approx.)
Rear power window motor LH			
Connector	Terminal		
B41	2	Ground	12

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 4.

4.CHECK ENCORDER POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. 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 window switch LH		Rear power window motor LH		Continuity
Connector	Terminal	Connector	Terminal	
B42	4	B41	2	Existed

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

Rear power window switch LH		Ground	Continuity
Connector	Terminal		
B42	4		Not existed

Is the inspection result normal?

YES >> Replace rear power window switch LH. Refer to PWC-66, "Removal and Installation".
NO >> Repair or replace harness.

ENCODER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

5.CHECK GROUND CIRCUIT 1

1. Turn ignition switch OFF.
2. 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 window switch LH		Rear power window motor LH		Continuity
Connector	Terminal	Connector	Terminal	
B42	3	B41	4	Existed

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

Rear power window switch LH		Ground	Continuity
Connector	Terminal		
B42	3		Not 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.
2. Check continuity between rear power window switch LH harness connector and ground.

Rear power window switch LH		Ground	Continuity
Connector	Terminal		
B42	3		Existed

Is the inspection result normal?

YES   >> Replace rear power window motor LH. Refer to GW-16, "Removal and Installation".
NO   >> Replace rear power window switch LH. Refer to PWC-66, "Removal and Installation".

REAR RH

REAR RH : Component Function Check

INFOID:0000000008463249

1.CHECK FUNCTION

Check that rear door RH glass performs AUTO DOWN operation normally when rear power window switch RH is operated.

Is the inspection result normal?

YES   >> INSPECTION END
NO   >> Refer to PWC-41, "REAR RH : Diagnosis Procedure".

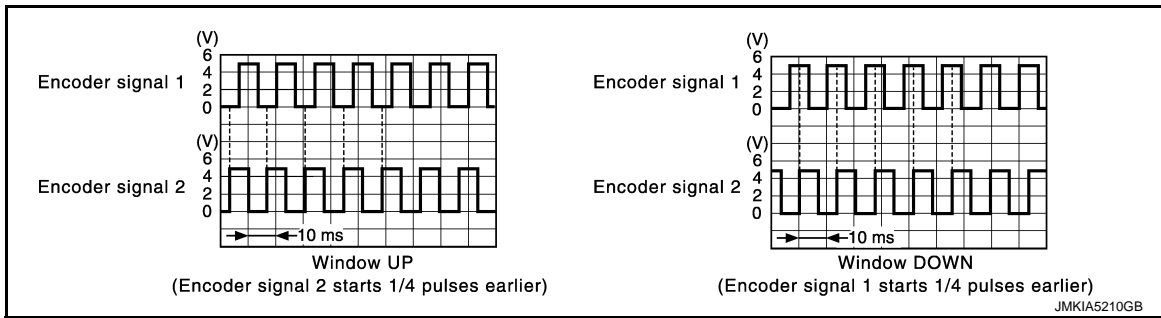## REAR RH : Diagnosis Procedure

INFOID:0000000008463250

1.CHECK ENCODER SIGNAL

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

(+)		(−)	Signal (Reference value)
Rear power window switch RH			
Connector	Terminal		
B222	12	Ground	Refer to following signal
	15		

ENCODER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

(V) 6 4 2 0 — Encoder signal 1
(V) 6 4 2 0 — Encoder signal 2
←10 ms→
Window UP
(Encoder signal 2 starts 1/4 pulses earlier)

(V) 6 4 2 0 — Encoder signal 1
(V) 6 4 2 0 — Encoder signal 2
←10 ms→
Window DOWN
(Encoder signal 1 starts 1/4 pulses earlier)

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Is the inspection result normal?

YES >> Replace rear power window switch RH. Refer to PWC-66, "Removal and Installation".
NO >> GO TO 2.

2.CHECK ENCODER SIGNAL CIRCUIT

1. 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 window switch RH		Rear power window motor RH		Continuity
Connector	Terminal	Connector	Terminal	
B222	12	B221	5	Existed
	15		6	

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

Rear power window switch RH			Continuity
Connector	Terminal	Ground	
B222	12		Not existed
	15		

Is the inspection result normal?

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

3.CHECK ENCODER POWER SUPPLY

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

(+)		(−)	Voltage (V) (Approx.)
Rear power window motor RH			
Connector	Terminal		
B221	2	Ground	12

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 4.

4.CHECK ENCORDER POWER SUPPLY CIRCUIT

1. 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.

ENCODER CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Rear power window switch RH		Rear power window motor RH		Continuity
Connector	Terminal	Connector	Terminal	
B222	4	B221	2	Existed

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

Rear power window switch RH		Ground	Continuity
Connector	Terminal		
B222	4		Not existed

Is the inspection result normal?

YES   >> Replace rear power window switch RH. Refer to PWC-66, "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 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	
B222	3	B221	4	Existed

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

Rear power window switch RH		Ground	Continuity
Connector	Terminal		
B222	3		Not 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 harness connector and ground.

Rear power window switch RH		Ground	Continuity
Connector	Terminal		
B222	3		Existed

Is the inspection result normal?

YES   >> Replace rear power window motor RH. Refer to GW-16, "Removal and Installation".
NO   >> Replace rear power window switch RH. Refer to PWC-66, "Removal and Installation".

DOOR KEY CYLINDER SWITCH

Component Function Check

INFOID:0000000008463251

1.CHECK FUNCTION

1. Select "DOOR LOCK" of "BCM" using CONSULT.
2. Select "KEY CYL LK-SW", "KEY CYL UN-SW" in "DATA MONITOR" mode.
3. Check that the function operates normally according to the following conditions.

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

Is the inspection result normal?

YES >> INSPECTION END
NO >> Refer to .

Diagnosis Procedure

INFOID:0000000008463252

1.CHECK DOOR KEY CYLINDER SWITCH SIGNAL

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

(+)		(–)	Voltage (V) (Approx.)
Front door lock assembly (driver side) (door key cylinder switch)			
Connector	Terminal		
D9	5	Ground	5
	6		

Is the inspection result normal?

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

2.CHECK DOOR KEY CYLINDER SWITCH CIRCUIT

1. 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	Terminal	
D5	4	D9	6	Existed
	6		5	

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

DOOR KEY CYLINDER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

Power window main switch		Ground	Continuity
Connector	Terminal		
D5	4		Not existed
	6		

Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK DOOR KEY CYLINDER SWITCH GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity 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)		Ground	Continuity
Connector	Terminal		
D9	4		Existed

Is the inspection result normal?

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

4.CHECK DOOR KEY CYLINDER SWITCH

Refer to PWC-45, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".
NO >> Replace front door lock assembly (driver side) (door key cylinder switch).

Component Inspection

INFOID:0000000008463253

1.CHECK DOOR KEY CYLINDER SWITCH

1. Turn ignition switch OFF.
2. Disconnect front door lock assembly (driver side) (door key cylinder switch) connector.
3. Check front door lock assembly (driver side) (door key cylinder switch) terminals under the following conditions.

Terminal		Condition	Continuity
5	4	Unlock	Existed
		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) (door key cylinder switch).

POWER WINDOW SERIAL LINK

< DTC/CIRCUIT DIAGNOSIS >

POWER WINDOW SERIAL LINK
POWER WINDOW MAIN SWITCH

POWER WINDOW MAIN SWITCH : Diagnosis Procedure

INFOID:0000000008463254

1.CHECK POWER WINDOW SWITCH OUTPUT SIGNAL

1. Turn ignition switch ON.
2. Check signal between power window main switch harness connector and ground using an oscilloscope.

(+)		(−)	Signal (Reference value)
Power window main switch			
Connector	Terminal		
D5	14	Ground	(V) 15 10 5 0 ⟷ 10 ms JPMIA0013GB

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".
NO >> GO TO 2.

2.CHECK POWER WINDOW SERIAL LINK SIGNAL

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

(+)		(−)	Voltage (V) (Approx.)
Power window main switch			
Connector	Terminal		
D5	14	Ground	12

Is the measurement value within the specification?

YES >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".
NO >> GO TO 3.

3.CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect soft top control unit connector.
3. Check continuity between soft top control unit harness connector and power window main switch harness connector.

Soft top control unit		Power window main switch		Continuity
Connector	Terminal	Connector	Terminal	
B323	19	D5	14	Existed

4. Check continuity between soft top control unit harness connector and ground.

Soft top control unit		Ground	Continuity
Connector	Terminal		
B323	19		Not existed

Is the inspection result normal?

POWER WINDOW SERIAL LINK

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace soft top control unit. Refer to RF-229, "Removal and Installation".
NO >> Repair or replace harness.
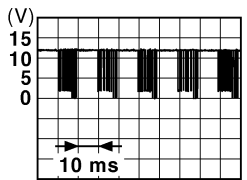
FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

FRONT POWER WINDOW SWITCH (PASSENGER SIDE) : Diagnosis Procedure

INFOID:0000000008463255

1.CHECK POWER WINDOW SWITCH OUTPUT SIGNAL

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

(+)		(−)	Signal (Reference value)
Front power window switch (passenger side)			
Connector	Terminal		
D45	16	Ground	

JPMIA0013GB

Is the inspection result normal?
YES >> Replace front power window switch (passenger side). Refer to PWC-66, "Removal and Installation".
NO >> GO TO 2.

2.CHECK POWER WINDOW SERIAL LINK CIRCUIT

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

Power window main switch		Front power window switch (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
D5	14	D45	16	Existed

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

Power window main switch		Ground	Continuity
Connector	Terminal		
D5	14		Not existed

Is the inspection result normal?
YES >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".
NO >> Repair or replace harness.

REAR POWER WINDOW SWITCH LH

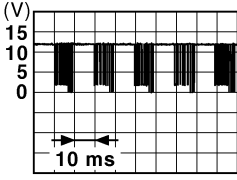### REAR POWER WINDOW SWITCH LH : Diagnosis Procedure

INFOID:0000000008463256

1.CHECK POWER WINDOW SWITCH OUTPUT SIGNAL

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

(+)		(−)	Signal (Reference value)
Rear power window switch LH			
Connector	Terminal		
B42	16	Ground	(V) 15 10 5 0 ⟵ 10 ms ⟶ JPMIA0013GB

<u>Is the inspection result normal?</u>

YES   >> Replace rear power window switch LH. Refer to PWC-66, "Removal and Installation".
NO   >> GO TO 2.

2.CHECK POWER WINDOW SERIAL LINK CIRCUIT

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

Power window main switch		Rear power window switch LH		Continuity
Connector	Terminal	Connector	Terminal	
D5	14	B42	16	Existed

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

Power window main switch		Ground	Continuity
Connector	Terminal		
D5	14		Not existed

<u>Is the inspection result normal?</u>

YES   >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".
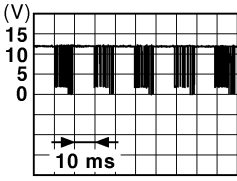NO   >> Repair or replace harness.

REAR POWER WINDOW SWITCH RH

REAR POWER WINDOW SWITCH RH : Diagnosis Procedure   INFOID:0000000008463257

1.CHECK POWER WINDOW SWITCH OUTPUT SIGNAL

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

(+)		(−)	Signal (Reference value)
Rear power window switch RH			
Connector	Terminal		
B222	16	Ground	(V) 15 10 5 0 ⟵ 10 ms ⟶ JPMIA0013GB

<u>Is the inspection result normal?</u>

POWER WINDOW SERIAL LINK

< DTC/CIRCUIT DIAGNOSIS >

YES >> Replace rear power window switch RH. Refer to PWC-66, "Removal and Installation".
NO >> GO TO 2.

2.CHECK POWER WINDOW SERIAL LINK CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect power window main switch connector and rear power window switch RH connector.
3. 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	
D5	14	B222	16	Existed

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

Power window main switch		Ground	Continuity
Connector	Terminal		
D5	14		Not existed

Is the inspection result normal?

YES >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".
NO >> Repair or replace harness.

DOOR SWITCH
DRIVER SIDE

DRIVER SIDE : Component Function Check
INFOID:0000000008463258

1.CHECK FUNCTION

Check that automatic adjusting function operates normally when driver side door is opened.
<u>Is the inspection result normal?</u>

YES   >> INSPECTION END
NO   >> Refer to PWC-50, "DRIVER SIDE : Diagnosis Procedure".

DRIVER SIDE : Diagnosis Procedure
INFOID:0000000008463259

1.CHECK FRONT DOOR SWITCH (DRIVER SIDE)

Refer to DLK-55, "Component Function Check".
<u>Is the inspection result normal?</u>

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

2.CHECK FRONT DOOR SWITCH (DRIVER SIDE) CIRCUIT

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

Front door switch (driver side)		Power window main switch		Continuity
Connector	Terminal	Connector	Terminal	
B32	3	D5	5	Existed

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

Front door switch (driver side)		Ground	Continuity
Connector	Terminal		
B32	3		Not existed

<u>Is the inspection result normal?</u>

YES   >> Replace power window main switch. Refer to PWC-66, "Removal and Installation".
NO   >> Replace or repair harness.

PASSENGER SIDE

PASSENGER SIDE : Component Function Check
INFOID:0000000008463260

1.CHECK FUNCTION

Check that automatic adjusting function operates normally when passenger side door is opened.
<u>Is the inspection result normal?</u>

YES   >> INSPECTION END
NO   >> Refer to PWC-50, "PASSENGER SIDE : Diagnosis Procedure".

PASSENGER SIDE : Diagnosis Procedure
INFOID:0000000008463261

1.CHECK FRONT DOOR SWITCH (PASSENGER SIDE)

Refer to DLK-55, "Component Function Check".
<u>Is the inspection result normal?</u>

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

DOOR SWITCH

< DTC/CIRCUIT DIAGNOSIS >

2.CHECK FRONT DOOR SWITCH (PASSENGER SIDE) CIRCUIT

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

Front door switch (passenger side)		Front power window switch (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B233	3	D45	14	Existed

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

Front door switch (passenger side)		Ground	Continuity
Connector	Terminal		
B233	3		Not existed

Is the inspection result normal?

YES >> Replace front power window switch (passenger side). Refer to PWC-66, "Removal and Installation".

NO >> Replace or repair harness.

SYMPTOM DIAGNOSIS

NONE OF THE POWER WINDOWS CAN BE OPERATED USING ANY SWITCH

Diagnosis Procedure

INFOID:0000000008463262

1.CHECK DTC WITH SOFT TOP CONTROL UNIT

Check that DTC is not detected with soft top control unit.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Refer to RF-57, "DTC Index".

2.CHECK BCM POWER SUPPLY AND GROUND CIRCUIT

Check BCM power supply and ground circuit.
Refer to BCS-70, "Diagnosis Procedure".

Is the inspection result normal?

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

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

Check power window main switch power supply and ground circuit.
Refer to PWC-28, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

Is the inspection result normal?

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

4.CHECK POWER WINDOW MAIN SWITCH SERIAL LINK CIRCUIT

Check power window main switch serial link circuit.
Refer to PWC-46, "POWER WINDOW MAIN SWITCH : Diagnosis Procedure".

Is the inspection result normal?

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

5.REPLACE POWER WINDOW MAIN SWITCH

1. Replace power window main switch. Refer to PWC-66, "Removal and Installation".
2. Confirm the operation after replacement.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

DRIVER SIDE POWER WINDOW DOES NOT OPERATE

Diagnosis Procedure

INFOID:000000008463263

1.CHECK FRONT POWER WINDOW MOTOR (DRIVER SIDE) CIRCUIT

Check front power window motor (driver side) circuit.
Refer to PWC-31, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

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

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".
NO >> GO TO 1.

FRONT PASSENGER SIDE POWER WINDOW DOES NOT OPERATE WHEN BOTH POWER WINDOW MAIN SWITCH AND FRONT POWER WINDOW SWITCH ARE OPERATED

WHEN BOTH POWER WINDOW MAIN SWITCH AND FRONT POWER WINDOW SWITCH ARE OPERATED : Diagnosis Procedure

INFOID:0000000008463264

1.CHECK FRONT POWER WINDOW SWITCH (PASSENGER SIDE) POWER SUPPLY AND GROUND CIRCUIT

Check front power window switch (passenger side) power supply and ground circuit.
Refer to PWC-29, "FRONT POWER WINDOW SWITCH (PASSENGER SIDE) : Diagnosis Procedure".
Is the inspection result normal?

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

2.CHECK FRONT POWER WINDOW MOTOR (PASSENGER SIDE) CIRCUIT

Check front power window motor (passenger side) circuit.
Refer to PWC-32, "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-40, "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:0000000008463265

1.REPLACE FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

Replace front power window switch (passenger side).
Refer to PWC-66, "Removal and Installation".

>> INSPECTION END

WHEN POWER WINDOW MAIN SWITCH IS OPERATED

WHEN POWER WINDOW MAIN SWITCH IS OPERATED : Diagnosis Procedure

INFOID:0000000008463266

1.CHECK FRONT POWER WINDOW SWITCH (PASSENGER SIDE) SERIAL LINK CIRCUIT

Check front power window switch (passenger side) serial link circuit.
Refer to PWC-47, "FRONT POWER WINDOW SWITCH (PASSENGER SIDE) : Diagnosis Procedure".
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-40, "Intermittent Incident".
NO   >> GO TO 1.

REAR LH SIDE POWER WINDOW 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

INFOID:0000000008463267

1.CHECK REAR POWER WINDOW SWITCH LH POWER SUPPLY AND GROUND CIRCUIT

Check rear power window switch LH power supply and ground circuit.
Refer to PWC-29, "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-33, "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-40, "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:0000000008463268

1.REPLACE REAR POWER WINDOW SWITCH LH

Replace rear power window switch LH.
Refer to PWC-66, "Removal and Installation".

      >> INSPECTION END

WHEN POWER WINDOW MAIN SWITCH IS OPERATED

WHEN POWER WINDOW MAIN SWITCH IS OPERATED : Diagnosis Procedure

INFOID:0000000008463269

1.CHECK REAR POWER WINDOW SWITCH LH SERIAL LINK CIRCUIT

Check rear power window switch LH serial link circuit.
Refer to PWC-47, "REAR POWER WINDOW SWITCH LH : Diagnosis Procedure".
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-40, "Intermittent Incident".
  NO   >> GO TO 1.

REAR RH SIDE POWER WINDOW DOES NOT OPERATE WHEN BOTH POWER WINDOW MAIN SWITCH AND REAR POWER WINDOW SWITCH RH ARE OPERATED

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

INFOID:0000000008463270

1.CHECK REAR POWER WINDOW SWITCH RH POWER SUPPLY AND GROUND CIRCUIT

Check rear power window switch RH power supply and ground circuit.
Refer to PWC-29, "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 RH

Check rear power window motor RH.
Refer to PWC-33, "REAR RH : 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-40, "Intermittent Incident".
NO   >> GO TO 1.

WHEN REAR POWER WINDOW SWITCH RH IS OPERATED

WHEN REAR POWER WINDOW SWITCH RH IS OPERATED : Diagnosis Procedure

INFOID:0000000008463271

1.REPLACE REAR POWER WINDOW SWITCH RH

Replace rear power window switch RH.
Refer to PWC-66, "Removal and Installation".

>> INSPECTION END

WHEN POWER WINDOW MAIN SWITCH IS OPERATED

WHEN POWER WINDOW MAIN SWITCH IS OPERATED : Diagnosis Procedure

INFOID:0000000008463272

1.CHECK REAR POWER WINDOW SWITCH RH SERIAL LINK CIRCUIT

Check rear power window switch RH serial link circuit.
Refer to PWC-48, "REAR POWER WINDOW SWITCH RH : Diagnosis Procedure".
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-40, "Intermittent Incident".
NO   >> GO TO 1.

AUTO OPERATION DOES NOT OPERATE BUT MANUAL OPERATES NORMALLY
DRIVER SIDE

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000008463273

1.PERFORM INITIALIZATION PROCEDURE

Initialization procedure is executed and operation is confirmed.
Refer to PWC-26, "Work Procedure".

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

2.CHECK ENCODER CIRCUIT (DRIVER SIDE)

Check encoder circuit (driver side).
Refer to PWC-35, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

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

3.REPLACE POWER WINDOW MAIN SWITCH

1. Replace power window main switch. Refer to PWC-66, "Removal and Installation".
2. Confirm the operation after replacement.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

PASSENGER SIDE

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000008463274

1.PERFORM INITIALIZATION PROCEDURE

Initialization procedure is executed and operation is confirmed.
Refer to PWC-26, "Work Procedure".

Is the inspection result normal?

YES >> INSPECTION END
NO >> GO TO 2.

2.CHECK ENCODER CIRCUIT (PASSENGER SIDE)

Check encoder circuit (passenger side).
Refer to PWC-37, "PASSENGER SIDE : Component Function Check".

Is the inspection result normal?

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

3.REPLACE FRONT POWER WINDOW SWITCH (PASSENGER SIEDE)

1. Replace front power window switch (passenger side). Refer to PWC-66, "Removal and Installation".
2. Confirm the operation after replacement.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

REAR LH

REAR LH : Diagnosis Procedure

INFOID:0000000008463275

1.CHECK ENCODER (REAR LH) CIRCUIT

Check encoder (rear LH) circuit.
Refer to PWC-39, "REAR LH : Component Function Check".
<u>Is the inspection result normal?</u>

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

2.REPLACE REAR POWER WINDOW SWITCH LH

1. Replace rear power window switch LH. Refer to PWC-66, "Removal and Installation".
2. Confirm the operation after replacement.

<u>Is the inspection result normal?</u>

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

REAR RH

REAR RH : Diagnosis Procedure

INFOID:0000000008463276

1.CHECK ENCODER (REAR RH) CIRCUIT

Check encoder (rear RH) circuit.
Refer to PWC-41, "REAR RH : Component Function Check".
<u>Is the inspection result normal?</u>

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

2.REPLACE REAR POWER WINDOW SWITCH RH

1. Replace rear power window switch RH. Refer to PWC-66, "Removal and Installation".
2. Confirm the operation after replacement.

<u>Is the inspection result normal?</u>

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

ANTI-PINCH FUNCTION DOES NOT OPERATE NORMALLY

Diagnosis Procedure

INFOID:0000000008463277

1.CHECK POWER WINDOW AUTO OPERATION

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Refer to PWC-57, "DRIVER SIDE : Diagnosis Procedure" (driver side), PWC-57, "PASSENGER SIDE : Diagnosis Procedure" (passenger side).

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

NO >> GO TO 1.

AUTOMATIC WINDOW ADJUSTING FUNCTION DOES NOT OPERATE

DRIVER SIDE

DRIVER SIDE : Diagnosis Procedure

INFOID:0000000008463278

1.CHECK AUTO UP OPERATION

Check AUTO operation when automatic window adjusting function does not operate.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Refer to PWC-57, "DRIVER SIDE : Diagnosis Procedure".

2.CHECK FRONT DOOR SWITCH (DRIVER SIDE)

Check front door switch (driver side).
Refer to PWC-50, "DRIVER SIDE : Component Function Check".

Is the inspection result normal?

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

3.REPLACE POWER WINDOW MAIN SWITCH

1.   Replace power window main switch. Refer to PWC-66, "Removal and Installation".
2.   Confirm the operation after replacement.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

PASSENGER SIDE

PASSENGER SIDE : Diagnosis Procedure

INFOID:0000000008463279

1.CHECK AUTO UP OPERATION

Check AUTO operation when automatic window adjusting function does not operate.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Refer to PWC-57, "PASSENGER SIDE : Diagnosis Procedure".

2.CHECK FRONT DOOR SWITCH (PASSENGER SIDE)

Check front door switch (passenger side).
Refer to PWC-50, "PASSENGER SIDE : Component Function Check".

Is the inspection result normal?

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

3.REPLACE FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

1.   Replace front power window switch (passenger side). Refer to PWC-66, "Removal and Installation".
2.   Confirm the operation after replacement.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

POWER WINDOW RETAINED POWER OPERATION DOES NOT OPER-ATE PROPERLY

Diagnosis Procedure

INFOID:0000000008463280

1.CHECK FRONT DOOR SWITCH

Check front door switch.
Refer to DLK-55, "Component Function Check".
Is the inspection result normal?
YES >> GO TO 2.
NO >> Repair or replace the malfunctioning parts.

2.REPLACE BCM

1. Replace BCM. Refer to BCS-77, "Removal and Installation".
2. Confirm the operation after replacement.

Is the inspection result normal?
YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

DOOR KEY CYLINDER SWITCH DOES NOT OPERATE POWER WINDOWS

Diagnosis Procedure

INFOID:0000000008463281

1.PERFORM INITIALIZATION PROCEDURE

Initialization procedure is executed and operation is confirmed.
Refer to PWC-26, "Work Procedure".
Is the inspection result normal?

  YES   >> INSPECTION END
  NO   >> GO TO 2.

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

Check front door lock assembly (driver side) (door key cylinder switch).
Refer to PWC-44, "Component Function Check".
Is the inspection result normal?

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

3.REPLACE POWER WINDOW MAIN SWITCH

1.   Replace power window main switch. Refer to PWC-66, "Removal and Installation".
2.   Confirm the operation after replacement.
Is the inspection result normal?

  YES   >> INSPECTION END
  NO   >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

KEYLESS POWER WINDOW DOWN DOES NOT OPERATE

Diagnosis Procedure

INFOID:0000000008463282

1. CHECK REMOTE KEYLESS ENTRY FUNCTION

Check remote keyless entry function.

Does door lock/unlock with Intelligent Key button?

YES >> GO TO 2.
NO >> Refer to DLK-20, "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 >> Refer to PWC-52, "Diagnosis Procedure".

3. CHECK "PW DOWN SET" SETTING IN "WORK SUPPORT"

Check "PW DOWN SET" setting in "WORK SUPPORT".
Refer to DLK-35, "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. REPLACE BCM

1. Replace BCM. Refer to BCS-77, "Removal and Installation".
2. Confirm the operation after replacement.

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-40, "Intermittent Incident".

POWER WINDOW LOCK SWITCH DOES NOT FUNCTION

Diagnosis Procedure

1.REPLACE POWER WINDOW MAIN SWITCH

Replace power window main switch.
Refer to PWC-66, "Removal and Installation".

>> INSPECTION END

POWER WINDOW SWITCH ILLUMINATION DOES NOT ILLUMINATE

DRIVER SIDE

DRIVER SIDE : Diagnosis Procedure
INFOID:0000000008463284

1.REPLACE POWER WINDOW MAIN SWITCH

Replace power window main switch.
Refer to PWC-66, "Removal and Installation".

>> INSPECTION END

PASSENGER SIDE

PASSENGER SIDE : Diagnosis Procedure
INFOID:0000000008463285

1.REPLACE FRONT POWER WINDOW SWITCH (PASSENGER SIDE)

Replace front power window switch (passenger side).
Refer to PWC-66, "Removal and Installation".

>> INSPECTION END

REAR LH

REAR LH : Diagnosis Procedure
INFOID:0000000008463286

1.REPLACE REAR POWER WINDOW SWITCH LH

Replace rear power window switch LH.
Refer to PWC-66, "Removal and Installation".

>> INSPECTION END

REAR RH

REAR RH : Diagnosis Procedure
INFOID:0000000008463287

1.REPLACE REAR POWER WINDOW SWITCH RH

Replace rear power window switch RH.
Refer to PWC-66, "Removal and Installation".
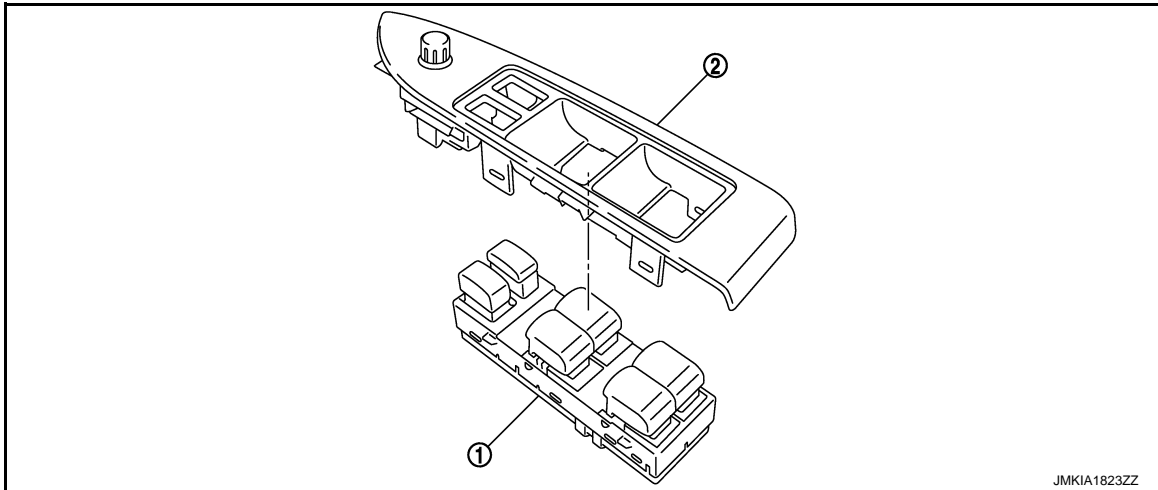
>> INSPECTION END

REMOVAL AND INSTALLATION

POWER WINDOW MAIN SWITCH

Exploded View

INFOID:0000000008463288

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1. Power window main switch   2. Power window main switch finisher
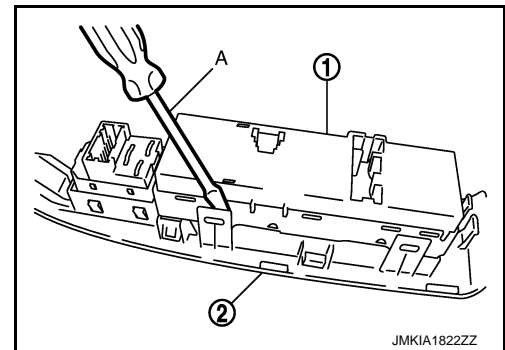
Removal and Installation

INFOID:0000000008463289

REMOVAL

1. Remove the power window main switch finisher. Refer to INT-13, "Removal and Installation".
2. Power window main switch (1) is removed from power window main switch finisher (2) using remover tool (A).

NOTE:
The same procedure is also performed for front power window switch (passenger side) and rear power window switch (LH & RH).

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INSTALLATION
Install in the reverse order of removal.
NOTE:
If power window main switch or front power window switch (passenger side) is replaced or removed, it is necessary to perform initialization procedure. Refer to PWC-26, "Work Procedure".