

LandCruiser 200

Corrections to Repair Manual RM22W1E

Please ensure these pages are distributed to all relevant staff for their information; and a copy made available for future reference, with the above repair manual.

Section	Title	Paragraph
WINDOW / GLASS	POWER WINDOW CONTROL SYSTEM (for Models with Jam Protection Function on 4 Windows)	SYSTEM DESCRIPTION
		HOW TO PROCEED WITH TROUBLESHOOTING
		OPERATION CHECK
		INITIALISATION
		FAIL-SAFE CHART
INTRODUCTION	REPAIR INSTRUCTION	INITIALISATION

The revised pages listed above are attached.
(The corrected parts are indicated by arrows.)

This Bulletin does not cause the Flat Rate Manual to be changed.

WINDOW / GLASS – POWER WINDOW CONTROL SYSTEM (for Models with Jam Protection Function on 4 Windows)

3. SYSTEM FUNCTION

The power window control system has the following functions:

Function	Outline
Manual up/down function	Function that raises a window while a power window switch is pulled halfway up, and lowers the window while pushed halfway down (the window stops as soon as the power window switch is released).
Auto up/down function (All auto)	Function that enables a window to be fully opened or closed by one full push or pull of the power window switch.
Remote up/down function	Function that allows the multiplex network master switch to control the front passenger side power window and rear power windows.
Key-off operation function	<ul style="list-style-type: none"> Function that makes it possible to operate all power windows for approximately 45 sec. after the ignition switch is turned off when the driver side door or front passenger side door has not been opened. If 45 sec. have passed or a front door is opened while the auto function is operating, the window operation stops.
Window lock function	<ul style="list-style-type: none"> Function where the front passenger side power window regulator switch and rear power window regulator switch operations are disabled when the window lock switch is on. The front passenger side power window regulator switch and rear power window regulator switches can be operated when the window lock switch is off.
Jam protection function	<ul style="list-style-type: none"> Function that automatically stops a power window and moves it downward if an object is jammed in the power window. The jam protection function works for the auto up and manual up operations.
Key-linked open and close	<ul style="list-style-type: none"> When the key is not inside the vehicle, the driver side door is locked, and the key inserted into the driver side door key cylinder is turned and maintained in the lock position for 2.3 sec. or more, the main body ECU activates the power window regulator motors to close all power windows while the key is turned.. Similarly, when the driver side door is unlocked, turning and maintaining the driver side door key cylinder in the unlock position for 2.3 seconds or more will cause all power windows to open.
Wireless transmitter-linked open	When the certification ECU receives an unlock signal from the door control transmitter for 3 seconds or more, the main body ECU sends an operation permission signal to the ECU in the power window regulator motor. The ECU that receives the signal controls the power window regulator motor to open all the power windows.
Entry lock switch-linked close	When the door ECU receives a lock signal from the lock switch on the door outside handle for 3 seconds or more, the main body ECU sends an operation permission signal to the ECU in the power window regulator motor. The ECU that receives the signal controls the power window regulator motor to close all the power windows.
Diagnosis	<ul style="list-style-type: none"> Function where the ECU in the power window regulator motor detects malfunctions in the power window system and makes a diagnosis. The power window switch light blinks to inform the driver of the malfunction*   [Added]
Fail-safe	If the pulse sensor(s) (Hall IC(s)) in the power window regulator motor malfunctions, the power window auto up/down function is disabled.

[Added]  *: except RHD, 1VD-FTV, Manual Leveling (2014/03 -)

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use these procedures to troubleshoot the power window control system.
- *: Use the intelligent tester.

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VEHICLE BROUGHT TO WORKSHOP

NEXT

WINDOW / GLASS – POWER WINDOW CONTROL SYSTEM (for Models with Jam Protection Function on 4 Windows)

(c) Data List / Active Test (See page WS-39).

NEXT**6 REPAIR OR REPLACE****Result**

Result	Proceed to
Door window regulator and power window regulator motor assembly is replaced or removed/installed.	A
Door window regulator and power window regulator motor assembly is not replaced or removed/installed.	B

B**GO TO STEP 8****A****7 PERFORM INITIALIZATION**

[Corrected]

(a) except RHD, 1VD-FTV, Manual Leveling (2014/03 -):
 (1) If a power window switch LED is blinking, initialise the power window regulator motor (See page WS-19).
 (b) for RHD, 1VD-FTV, Manual Leveling (2014/03 -):
 (1) Initialise the power window regulator motor (See page WS-19).

NEXT**8 CONFIRMATION TEST****NEXT****END****OPERATION CHECK****1. CHECK WINDOW LOCK SWITCH****HINT:**

Before performing the window lock switch operation check, make sure that the window lock switch is off (the switch is not pushed in).



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[Corrected]

(a) except RHD, 1VD-FTV, Manual Leveling (2014/03 -):
 (1) Turn the ignition switch ON.
 (2) When the window lock switch of the multiplex network master switch assembly is pressed, check that the indicator light (LED) built into the switch knob for each seat except the driver seat turns off and the power window can no longer be operated for each seat except the driver seat.

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(3) When the window lock switch is pressed again, check that the indicator light (LED) built into the switch knob for each seat except the driver seat turns on and the power window can be operated for each seat except the driver seat.

(b) for RHD, 1VD-FTV, Manual Leveling (2014/03 -):

- (1) Press the window lock switch of the multiplex network master switch assembly.

HINT:
The illumination (LED) built into the switch knob of each seat does not turn off.

- (2) Check that the power window for each seat except the driver seat can no longer be operated.
- (3) Check that the power window for each seat cannot be operated from the driver seat.
- (4) Press the window lock switch of the multiplex network master switch assembly again.
- (5) Check that the power window for each seat except the driver seat can be operated.
- (6) Check that the power window for each seat can be operated from the driver seat.

[Corrected] 

2. CHECK MANUAL UP/DOWN FUNCTION

(a) Check that the driver side power window operates as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)

(b) Check that the front passenger side and rear power windows operate as follows:

OK

Condition	Power Window Regulator Switch	Switch Operation	Power Window
• Ignition switch ON • Window lock switch off	Front passenger side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear LH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)
	Rear RH side	Pulled halfway up	Up (Closes)
		Pushed halfway down	Down (Opens)

3. CHECK AUTO UP/DOWN FUNCTION

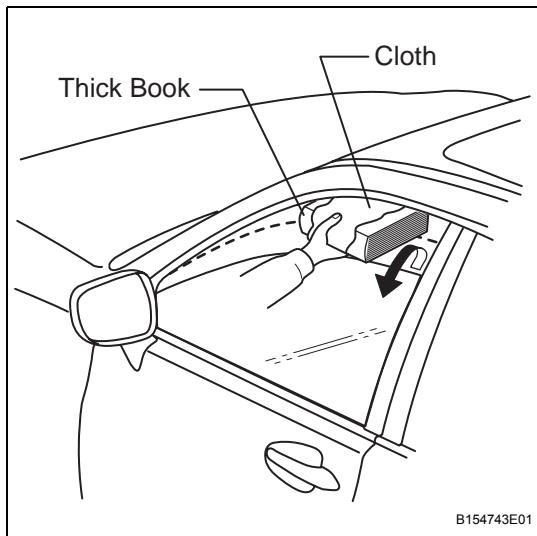
(a) Check that the driver side power window operates as follows:

OK

Condition	Multiplex Network Master Switch	Switch Operation	Power Window
Ignition switch ON	Driver side	Pulled up (One touch operation)	Auto up (Closes)
		Pushed down (One touch operation)	Auto down (Opens)

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(2) Hold a thick book wrapped with cloth in the position shown in the illustration.

(3) Operate the auto up or manual up function to check that the power window goes down when the window contacts the book, and stops when the opening reaches approximately 200 mm (7.87 in.).

HINT:

The power window moves down approximately 125 mm (4.93 in.). However, when the opening does not reach 200 mm (7.87 in.), the power window continues to go down until the opening reaches 200 mm (7.87 in.) or until approximately 5 seconds. have elapsed.

(4) While the power window is moving down, check that the door glass cannot be moved up even when the power window regulator switch is used.

11. CHECK POWER WINDOW REGULATOR SWITCH LED ILLUMINATION

(a) except RHD, 1VD-FTV, Manual Leveling (2014/03 -):

(1) When the ignition switch is turned from off to ON with the connectors connected, check that the indicator light (LED) on the switch portion of the power window regulator switch assembly turns on.

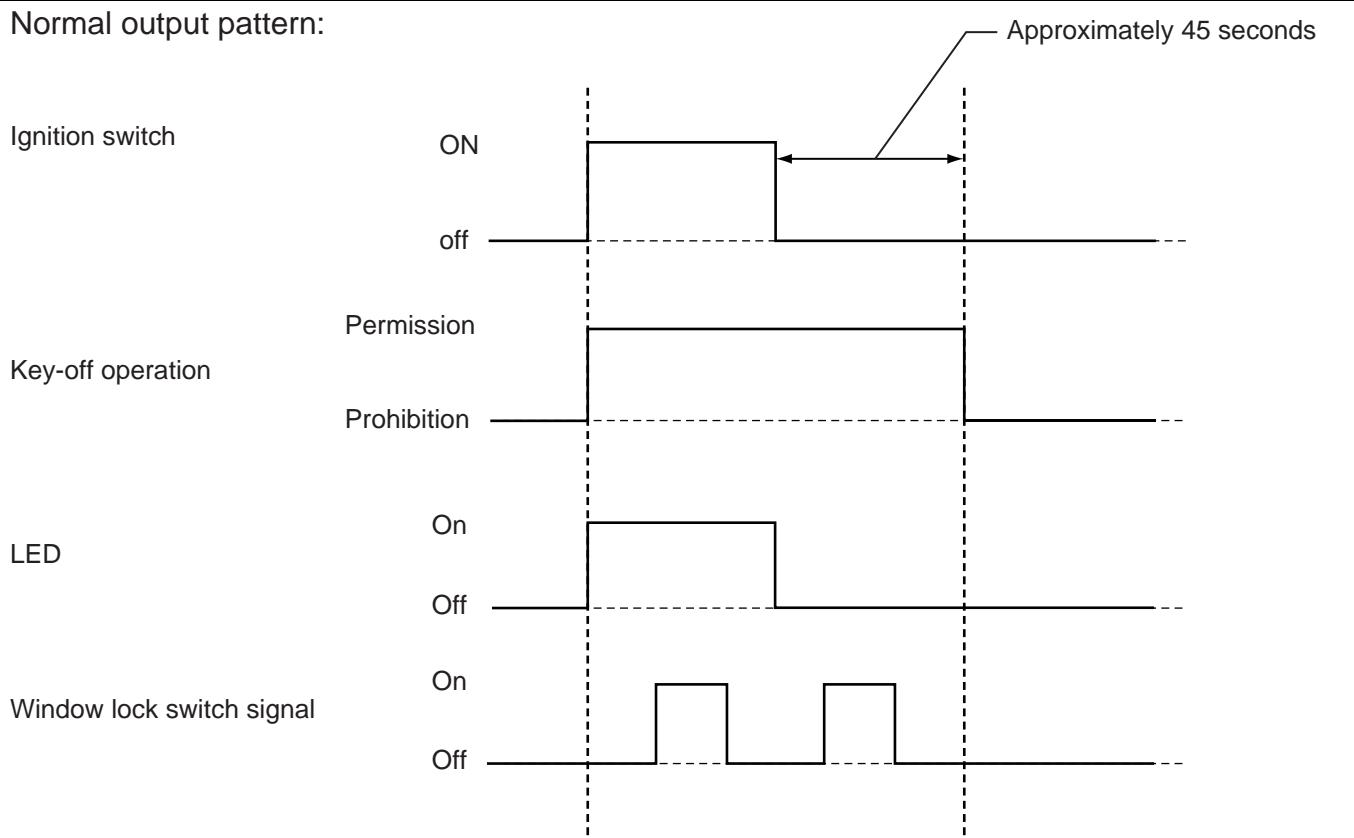
[Corrected] →

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(b) for RHD, 1VD-FTV, Manual Leveling (2014/03 -):
 (1) When the ignition switch is turned from off to ON with the connectors connected, check that the illumination (LED) on the switch portion of the power window regulator switch assembly turns on.

Normal output pattern:



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CUSTOMIZE PARAMETERS

1. CUSTOMIZING FUNCTION WITH INTELLIGENT TESTER (REFERENCE) (w/ REMOTE FUNCTION) NOTICE:

- When the customer requests a change in a function, first make sure the function(s) can be customized.
- Be sure to make note of the current settings before customizing.
- When troubleshooting a function, first make sure that the function is set to the default setting.
 - Connect the intelligent tester to the DLC3.
 - Turn the ignition switch ON.
 - Turn the intelligent tester on.
 - Enter the following menus: Utility / Customise Setting / Power Window.

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WINDOW / GLASS – POWER WINDOW CONTROL SYSTEM (for Models with Jam Protection Function on 4 Windows)

- **If the initialization is not completed properly, the LIN communication system may have a malfunction (See page OO-OO).**

(a) Initialisation procedures when replacing the power window regulator motor with a new one:

(1) for RHD, 1VD-FTV, Manual Leveling (2014/03 -): Connect the battery and turn the ignition switch ON.

except RHD, 1VD-FTV, Manual Leveling (2014/03 -): Connect the battery and turn the ignition switch ON (at this time, the LED on the power window switch blinks to indicate that it is ready for initialisation).

(2) Fully open the window by fully pushing the power window switch, and hold the switch for 1 second or more after the window is fully opened.

(3) for RHD, 1VD-FTV, Manual Leveling (2014/03 -):

Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position.

except RHD, 1VD-FTV, Manual Leveling (2014/03 -): Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position. The LED on the power window switch stops blinking and illuminated to indicate that the initialisation is complete.

(b) Initialisation procedures when removing/installing the power window regulator motor:

(1) Connect the battery and turn the ignition switch ON.

(2) Fully close the power window by fully pulling the power window switch, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).

(3) Fully open the window by pushing down the power window switch, and hold the switch for 1 second or more after the window is fully opened.

(4) Release the power window switch. Then fully push and hold the switch for 4 seconds or more.

(5) Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position and complete the initialisation.

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WINDOW / GLASS – POWER WINDOW CONTROL SYSTEM (for Models with Jam Protection Function on 4 Windows)

Power Window Operation	Condition		
	Ignition Switch ON	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Auto up	X	X	-
Auto down	X	X	-
Door key interlock	-	X	X
Wireless interlock	-	X	X
Smart interlock	-	X	X

HINT:

O: Operative

X: Operation prohibited

*1: Jam protection not operative

*2: In manual mode and jam protection not operative

[Corrected] →

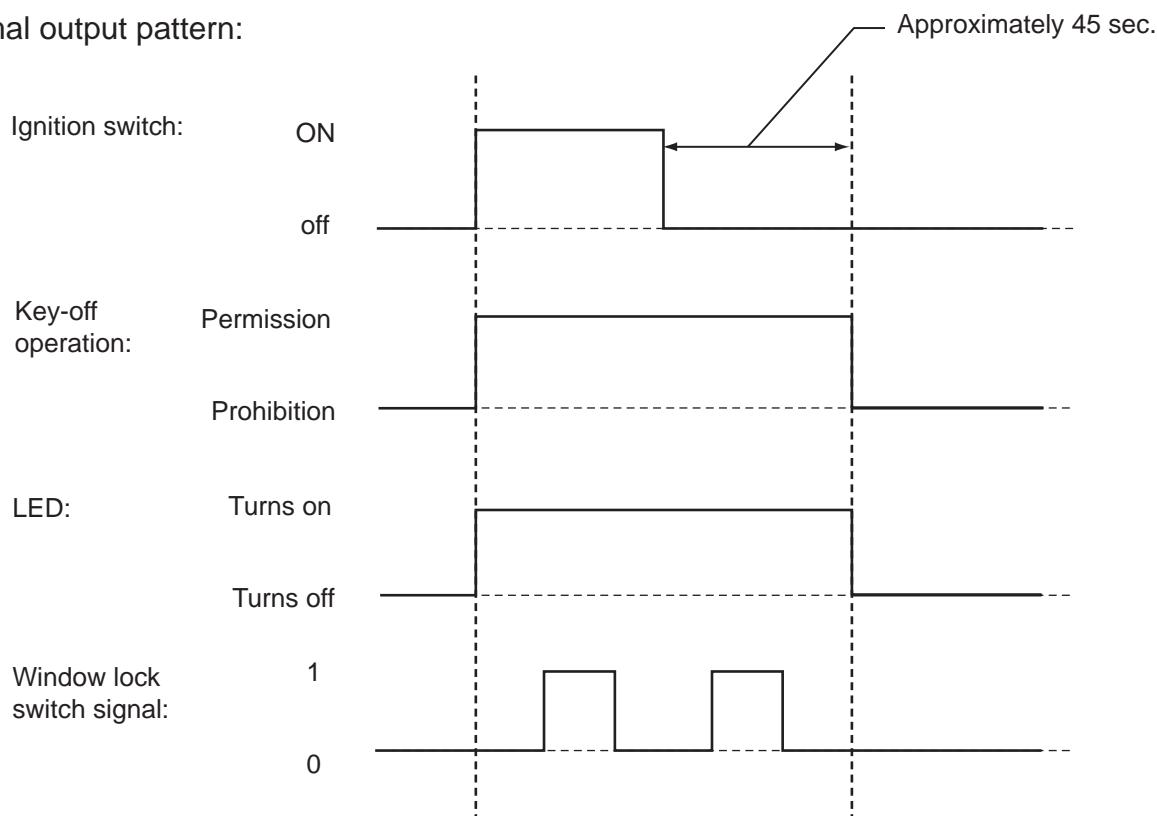
(1) Power window switch LED control (except RHD, 1VD-FTV, Manual Leveling [2014/03 -])

HINT:

During normal operation (fail-safe is not operating), or during fail-safe mode when there is a pulse sensor malfunction or the window position or learned value is abnormal, the LED illuminates as shown in the illustration.

1. for driver side:

Normal output pattern:



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WINDOW / GLASS – POWER WINDOW CONTROL SYSTEM (for Models with Jam Protection Function on 4 Windows)

Power Window Operation	Condition		
	Ignition Switch on (IG)	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Auto down (Driver side door window)	X	X	-
Manual up (Remote switch operation)	X	X	-
Manual down (Remote switch operation)	X	X	-
Auto up (Remote switch operation) (hold switch at auto up position)	X	X	-
Auto up (Remote switch operation)	X	X	-
Auto down (Remote switch operation)	X	X	-
Door key interlock	-	X	X
Wireless interlock	-	X	X
Smart interlock	-	X	X

HINT:

O: Operative

X: Operation prohibited

*1: Jam protection not operative

*2: In manual mode and jam protection not operative

Power Window Regulator Switch (for Front Passenger Side, Rear LH and Rear RH)

Power Window Operation	Condition		
	Ignition Switch ON	Ignition Switch off (Key-off operation permitted)	Ignition Switch off (Key-off operation prohibited)
Manual up	X	X	-
Manual down	O*1	X	-
Auto up (hold switch at auto up position)	O*2	X	-
Auto up	X	X	-
Auto down	X	X	-
Door key interlock	-	X	X
Wireless interlock	-	X	X
Smart interlock	-	X	X

HINT:

O: Operative

X: Operation prohibited

*1: Jam protection not operative

*2: In manual mode and jam protection not operative

[Corrected] →

(1) Power window switch LED control (except RHD, 1VD-FTV, Manual Leveling [2014/03 -])

HINT:

During initialisation of the power window regulator motor ECU, when the window position or initialisation complete status cannot be properly read from the EEPROM during fail-safe mode, the LED illuminates as shown in the illustration.

WS

INTRODUCTION – REPAIR INSTRUCTION

- Insert the key into the ignition key cylinder.

35. INITIALIZATION RELATED TO POWER WINDOW CONTROL SYSTEM (Models with Jam Protection Function on 4 Windows)

(a) INITIALISE POWER WINDOW CONTROL SYSTEM (POWER WINDOW REGULATOR MOTOR (ALL DOORS))

CAUTION:

When the power window regulator motor is reinstalled or replaced, the power window control system must be initialized. Functions such as the auto up/down, jam protection and key-off do not operate if the initialization is not performed.

HINT:

When the battery is replaced, it is not necessary to initialise the power window regulator motor.

NOTICE:

- When the power window regulator motor is replaced, DTC B2313 is output. Clear the DTC after the initialization.
- When performing initialization, do not perform any other procedures.
- After a door glass or a door glass run has been replaced, the jam protection function may operate unexpectedly when the auto up function is used, due to detection of a value different from the operation learned value of the door glass movement speed. In such cases, the auto up function can be resumed by repeating the following operation at least 5 times:

- (a) Open the power window by fully pushing down the power window switch.
- (b) Close the power window by fully pulling up the power window switch and holding it at the auto up position.
- If the initialization is not completed properly, the LIN communication system may have a malfunction.

(1) Initialization procedures when replacing the power window regulator motor with a new one:

1. for RHD, 1VD-FTV, Manual Leveling (2014/03 -):

Connect the battery and turn the ignition switch ON.

2. except RHD, 1VD-FTV, Manual Leveling (2014/03 -):

Connect the battery and turn the ignition switch ON (at this time, the LED on the power window switch blinks to indicate that it is ready for initialisation).

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INTRODUCTION – REPAIR INSTRUCTION

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[Corrected] →

3. Fully open the window by fully pushing the power window switch, and hold the switch for 1 second or more after the window is fully opened.
4. for RHD, 1VD-FTV, Manual Leveling (2014/03 -):
Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position.
5. except RHD, 1VD-FTV, Manual Leveling (2014/03 -):
Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position. The LED on the power window switch stops blinking and illuminates to indicate that the initialisation is complete.

(2) Initialisation procedures when removing/installing the power window regulator motor:

1. Connect the battery and turn the engine switch on (IG).
2. Fully close the power window by fully pulling the power window switch, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).
3. Fully open the window by pushing down the power window switch, and hold the switch for 1 second or more after the window is fully opened.
4. Release the power window switch. Then fully push and hold the switch for 4 seconds or more.
5. Fully close the power window by fully pulling the power window switch, and hold the switch for 1 second or more after the window is fully closed to reset the glass position and complete the initialisation.

(3) Initialisation procedures when the power window does not fully open:

1. Connect the battery and turn the engine switch on (IG).
2. Fully close the power window by fully pulling the power window switch, and hold the switch for 6 seconds or more after the window is fully closed (if the power window does not move or stops halfway even when the switch is fully pulled, release the switch and fully pull it again).