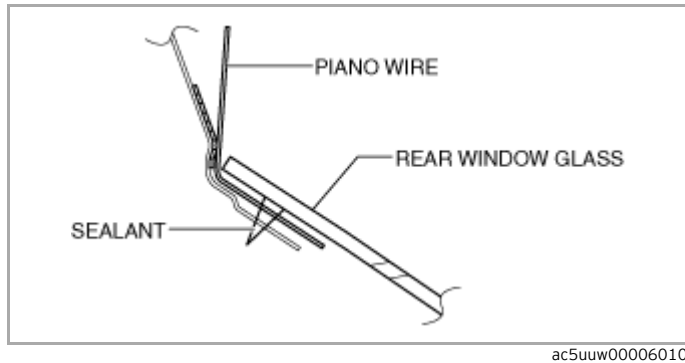


Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2017 MAZDA MX-5 / Miata OEM Service and Repair Workshop Manual

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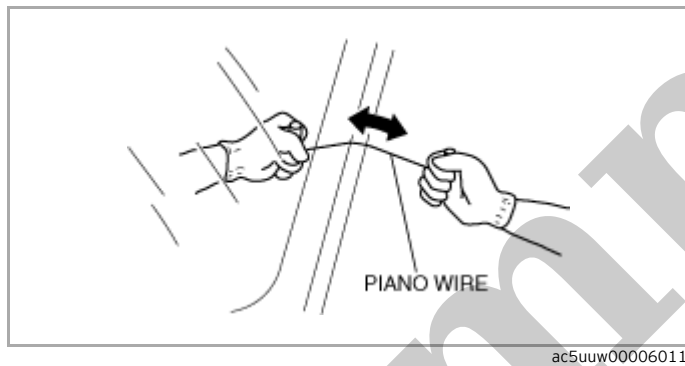


7. Wind both ends of the piano wire using the piano wire grips.

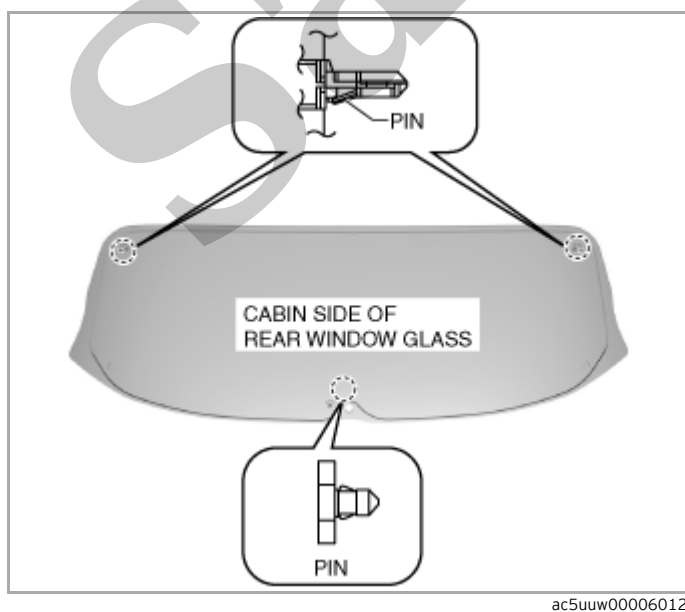
8. Secure one end of piano wire, and while pulling the other end, cut the sealant around the rear window glass.

Note

- Use a long sawing action over the whole length of the piano wire to prevent it from breaking due to localized heating.

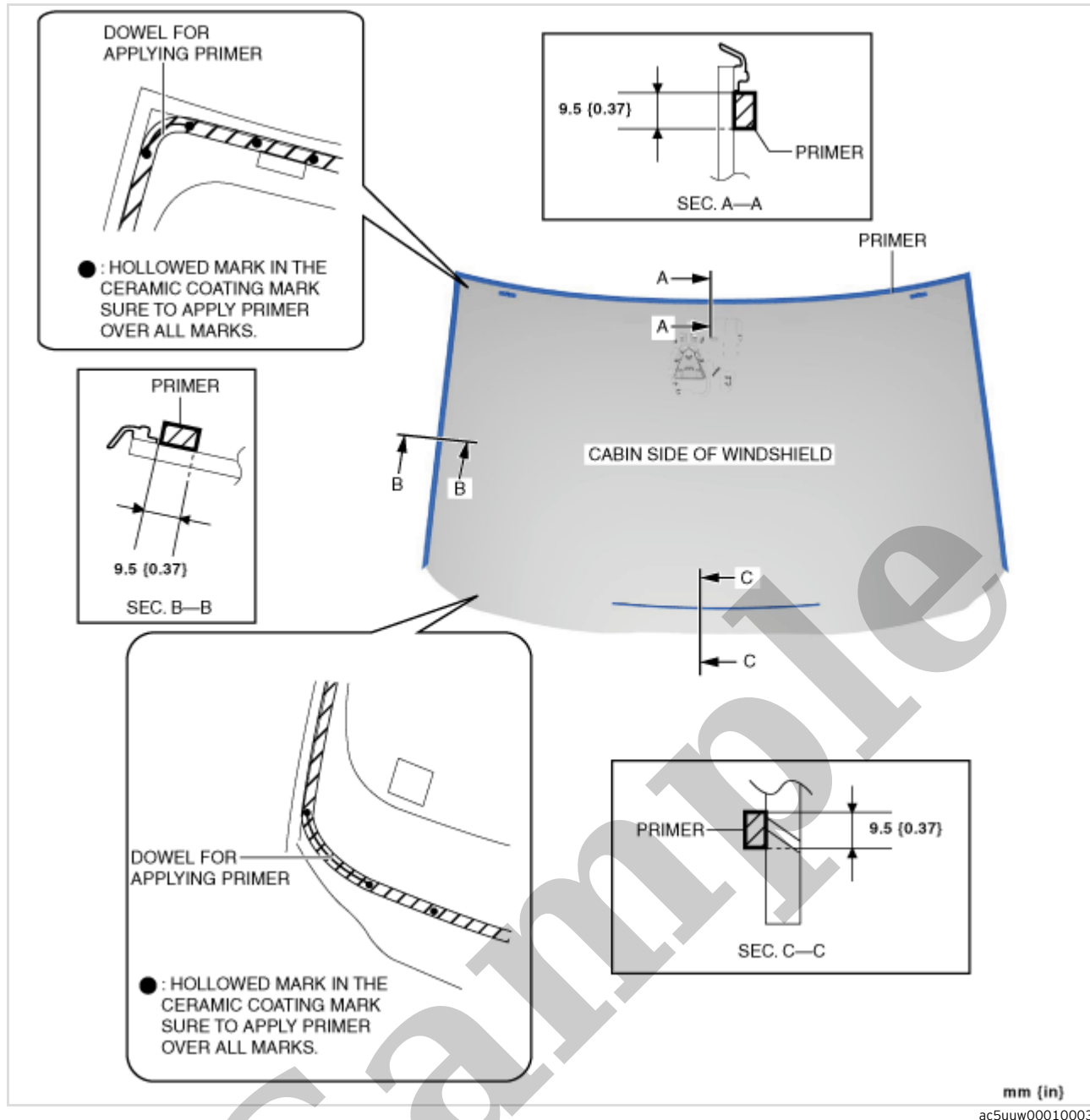


9. After the piano wire reaches the pin position, cut the sealant so that the sealant around the pin does not remain on the body.

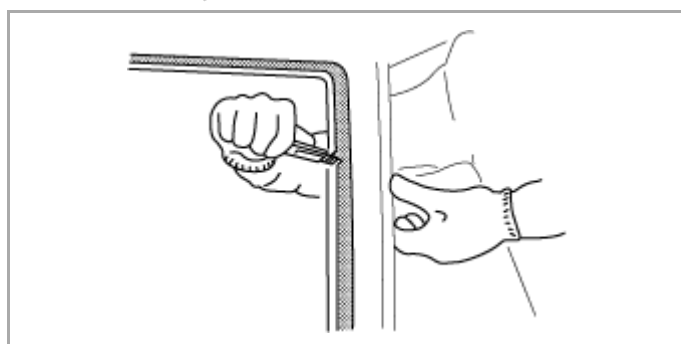


10. After the piano wire reaches the pin position, pull out the piano wire and re insert it at the position avoiding the pin.

11. Cut the sealant around the rear window glass.



7. Cut away the old sealant using a utility knife or scraper so that a 1–2 mm (0.04–0.07 in) thickness of sealant remains along the perimeter of the frame.



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8. Clean and degrease along the perimeter of the bonding area on the body.

9. Apply primer to the area of the body shown in the figure.

(1) Assist handle (See [ASSIST HANDLE REMOVAL/INSTALLATION.](#))

(2) Front map light (See [FRONT MAP LIGHT REMOVAL/INSTALLATION.](#))

(3) Sunvisor (See [SUNVISOR REMOVAL/INSTALLATION.](#))

(4) A-pillar trim (See [A-PILLAR TRIM REMOVAL/INSTALLATION.](#))

(5) Auto-dimming rearview mirror (with auto-dimming rearview mirror) (See [AUTO-DIMMING REARVIEW MIRROR REMOVAL/INSTALLATION.](#))

(6) Rearview mirror (without auto-dimming rearview mirror) (See [REARVIEW MIRROR REMOVAL/INSTALLATION.](#))

(7) Rain sensor (with auto light/wiper system) (See [RAIN SENSOR REMOVAL/INSTALLATION.](#))

(8) Forward sensing camera (FSC) (with forward sensing camera (FSC)) (See [FORWARD SENSING CAMERA \(FSC\) REMOVAL/INSTALLATION.](#))

(9) Sensor cover (with sensor cover) (See [SENSOR COVER REMOVAL/INSTALLATION.](#))

(10) Cowl grille (See [COWL GRILLE REMOVAL/INSTALLATION.](#))

(11) Windshield wiper arm and blade (See [WINDSHIELD WIPER ARM AND BLADE REMOVAL/INSTALLATION.](#))

17. Connect the negative battery terminal. (See [NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.](#))

18. Allow the sealant to harden completely.

Reference for sealant hardening time: 24 h

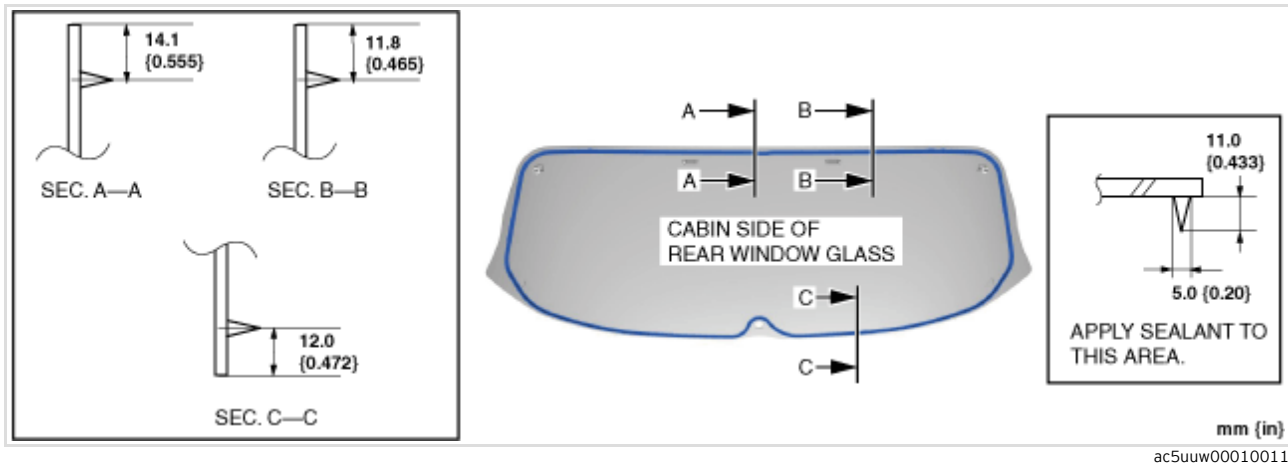
Note

- Follow the product instructions for the sealant hardening time.

19. Perform the forward sensing camera (FSC) aiming in the following cases. (See [FORWARD SENSING CAMERA \(FSC\) AIMING.](#))

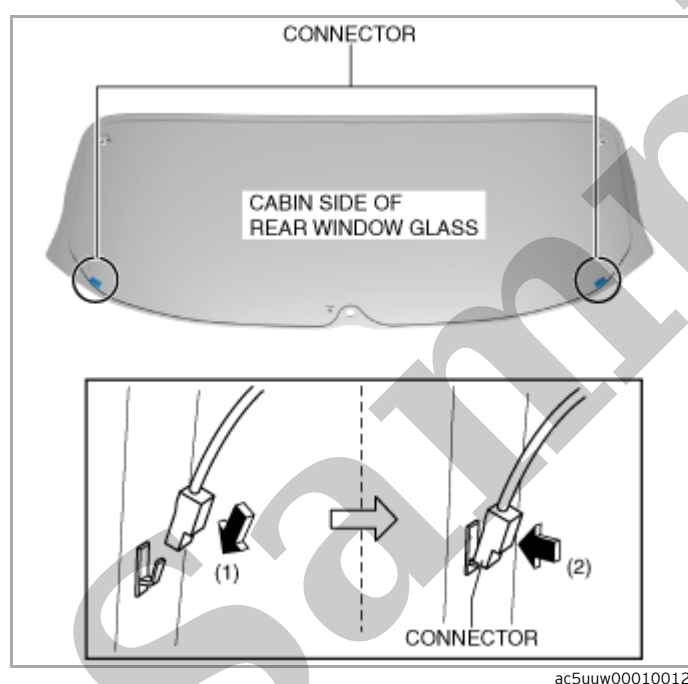
- Windshield is replaced
- Windshield is reused and forward sensing camera (FSC) or forward sensing camera (FSC) clips are replaced

20. If the rain sensor is replaced, perform the auto light sensitivity setting. (See [CONTROL SYSTEM PERSONALIZATION FEATURES SETTING PROCEDURE.](#))



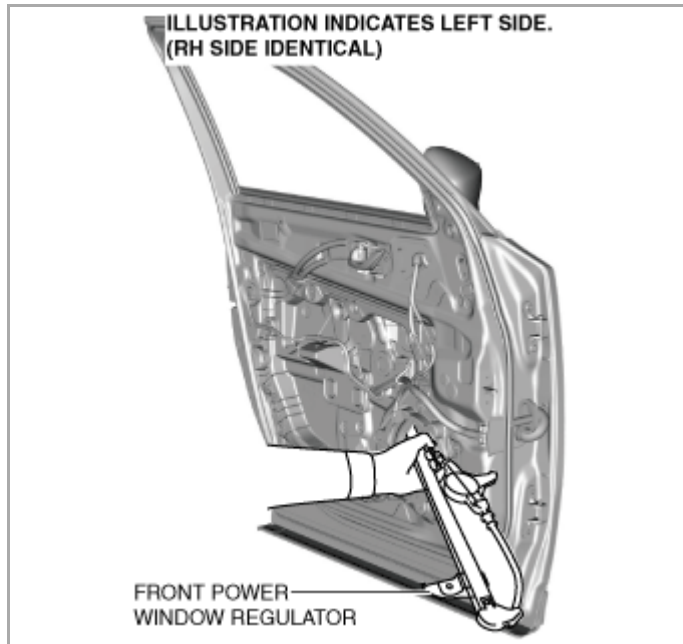
11. Install the rear window glass.

12. Connect the connectors in the direction of the arrow in the order of (1), (2) shown in the figure.



13. Install the following parts:

- (1) Liftgate garnish (See [LIFTGATE GARNISH REMOVAL/INSTALLATION.](#))
- (2) Outer bushing (See [REAR WIPER MOTOR REMOVAL/INSTALLATION.](#))
- (3) Rear wiper motor (See [REAR WIPER MOTOR REMOVAL/INSTALLATION.](#))
- (4) Rear wiper arm and blade (See [REAR WIPER ARM AND BLADE REMOVAL/INSTALLATION.](#))
- (5) Rear spoiler (See [REAR SPOILER REMOVAL/INSTALLATION.](#))
- (6) Liftgate lower trim (See [LIFTGATE LOWER TRIM REMOVAL/INSTALLATION.](#))
- (7) Liftgate recess (See [LIFTGATE RECESS REMOVAL/INSTALLATION.](#))
- (8) Liftgate side trim (See [LIFTGATE SIDE TRIM REMOVAL/INSTALLATION.](#))
- (9) Liftgate upper trim (See [LIFTGATE UPPER TRIM REMOVAL/INSTALLATION.](#))



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9. Install in the reverse order of removal.

FRONT POWER WINDOW MOTOR REMOVAL/INSTALLATION

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1. Fully open the front door glass.

Caution

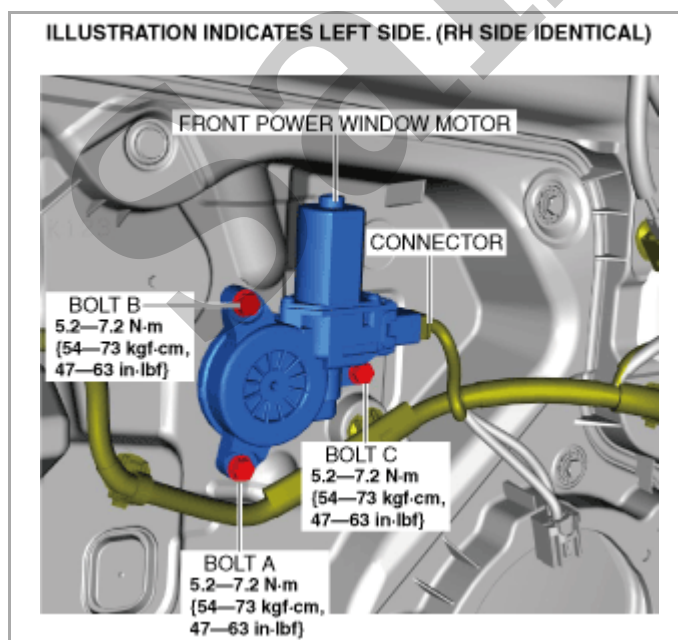
- If the front power window motor is removed with the front door glass fully closed, the front door glass may fall off and be damaged.
- If the front door glass cannot be fully opened due to a front power window motor malfunction, remove the front door speaker, insert your hand through the front door speaker installation hole, and while supporting the front door glass with your hand so that it does not fall, remove the front power window motor. (See **FRONT DOOR SPEAKER REMOVAL/INSTALLATION.**)

2. Disconnect the negative battery terminal. (See **NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.**)

3. Remove the front door trim. (See **FRONT DOOR TRIM REMOVAL/INSTALLATION.**)

4. Remove the front door speaker. (See **FRONT DOOR SPEAKER REMOVAL/INSTALLATION.**)

5. Disconnect the connector.



6. Remove bolt A.

7. Remove bolt B.

FRONT POWER WINDOW MOTOR INSPECTION

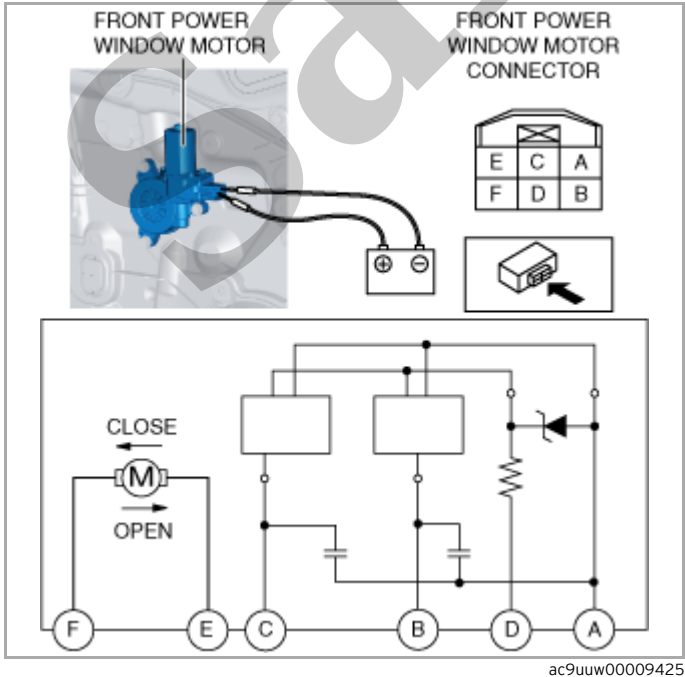
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Driver-side

- 1.Disconnect the negative battery terminal. (See [NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.](#))
- 2.Remove the front door trim. (Driver- side) (See [FRONT DOOR TRIM REMOVAL/INSTALLATION.](#))
- 3.Remove the power window main switch. (See [POWER WINDOW MAIN SWITCH REMOVAL/INSTALLATION.](#))
- 4.Disconnect the front power window motor connector.
- 5.Apply battery positive voltage and connect the ground to front power window motor terminals E and F, and then inspect the front power window motor operation.

B+ Terminal	Ground Terminal	Operation
E	F	Close
F	E	Open



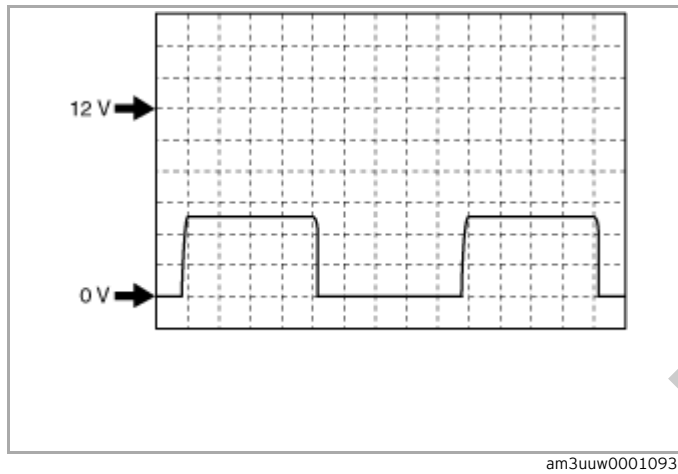
• If the front power window motor does not operate as indicated in the table, replace it. (See [FRONT POWER WINDOW MOTOR REMOVAL/INSTALLATION.](#))

- 6.Connect the front power window motor connector.

7. Connect the power window subswitch connector. (See [POWER WINDOW SUBSWITCH REMOVAL/INSTALLATION.](#))

8. Connect the negative battery terminal. (See [NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.](#))

9. Operate the rear power window motor and verify the wave patterns for terminals B and C.



- Terminal: B(+), C(+) ↔ ground (-)
- Oscilloscope setting: 2 V/DIV (Y), 1 ms/DIV (X), DC range
- If the malfunction, replace the rear power window motor. (See [REAR POWER WINDOW MOTOR REMOVAL/INSTALLATION.](#))

Power Outer Mirror Switch

Terminal	Signal name	Connected to	Measurement condition	Voltage (V)	Inspection item (s)
1B	Power supply	P.WINDOW3 30A fuse	Under any condition	B+	• P.WINDOW3 30A fuse • Related wiring harness
1C	Door lock signal	Rear body control module (RBCM)	Door lock switch ON	1.0 or less	• Rear body control module (RBCM) • Related wiring harness
			Other	approx. 5.0	
1C	-	-	-	-	-
1K	GND	Body ground	Under any condition	1.0 or less	• Related wiring harness
2A	Retract signal	Power outer mirror (LH/RH)	Power outer mirror (LH/RH) is retracting	B+	Power outer mirror
			Other	1.0 or less	
2B	Power outer mirror right/down signal	Power outer mirror (LH)	Outer mirror glass (LH) is operating downward or to right direction	B+	Power outer mirror
			Other	1.0 or less	
2C	Power outer mirror right/down signal	Power outer mirror (RH)	Outer mirror glass (RH) is operating downward or to right direction	B+	Power outer mirror
			Other	1.0 or less	
2E	Power outer mirror up signal	Power outer mirror (LH/RH)	Outer mirror glass (LH/RH) is operating to upward	B+	Power outer mirror
			Other	1.0 or less	
2G	Power outer mirror left signal	Power outer mirror (RH)	Outer mirror glass (RH) is operating to left direction	B+	Power outer mirror
			Other	1.0 or less	
2H	Power outer mirror left signal	Power outer mirror (LH)	Outer mirror glass (LH) is operating to left direction	B+	Power outer mirror
			Other	1.0 or less	
2I	Return signal	Power outer mirror (LH/RH)	Power outer mirror (LH/RH) is returning	B+	Power outer mirror
			Other	1.0 or less	
2K	ACC	MIRROR 7.5 A fuse	Switch the ignition to OFF	1.0 or lessB+	• MIRROR 7.5 A fuse • Related wiring harness
			Other	B+	

Inspection Using an Oscilloscope (Reference)