

2007 Mazda MX-5 Miata Sport

2007 ACCESSORIES & BODY, CAB Glass/Windows/Mirrors - MX-5 Miata

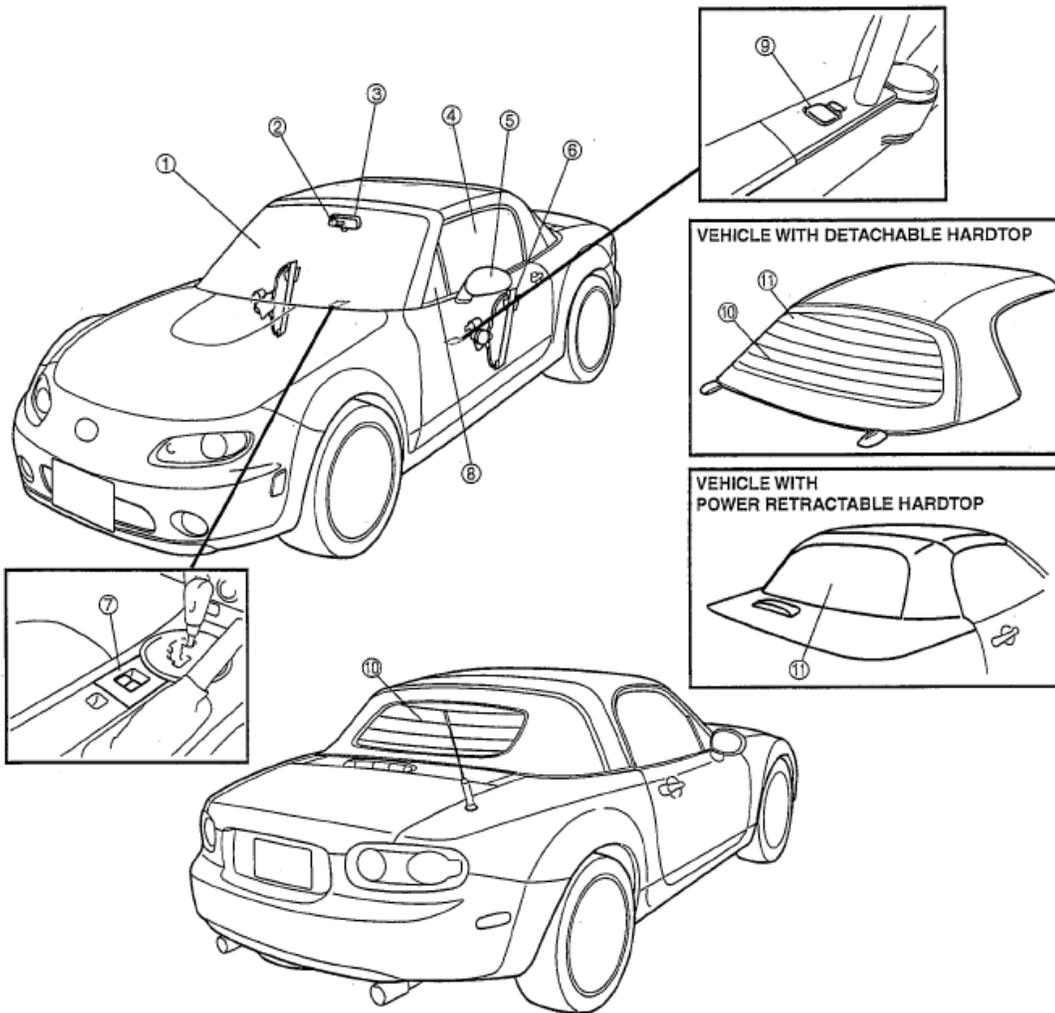
2007 ACCESSORIES & BODY, CAB

Glass/Windows/Mirrors - MX-5 Miata

GLASS/WINDOWS/MIRRORS LOCATION INDEX

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Fig. 1: Identifying Glass/Windows/Mirrors Location
 Courtesy of MAZDA MOTORS CORP.

DOOR GLASS REMOVAL/INSTALLATION

1. Position the door glass so that the distance between the top of the front door glass and top of the front beltline molding is **110 mm {4.33 in.}**
2. Remove the battery cover.
3. Disconnect the negative battery cable.(See **BATTERY REMOVAL/INSTALLATION [LF]** .)
4. Remove the door trim. (See **DOOR TRIM REMOVAL/INSTALLATION** .)
5. Remove the door unit. (See **DOOR UNIT REMOVAL/INSTALLATION** .)

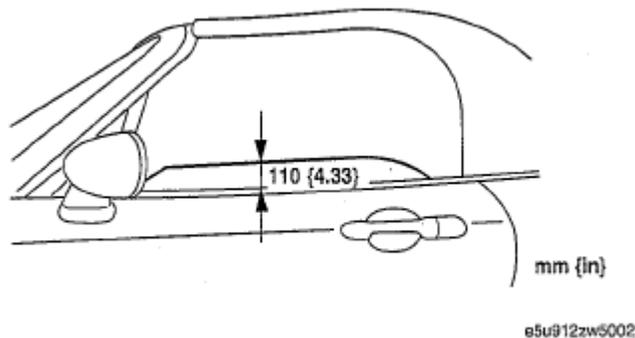


Fig. 2: Identifying Distance Between Top Of Front Door Glass & Top Of Front Belt Line Molding
 Courtesy of MAZDA MOTORS CORP.

6. Remove the glass stopper.

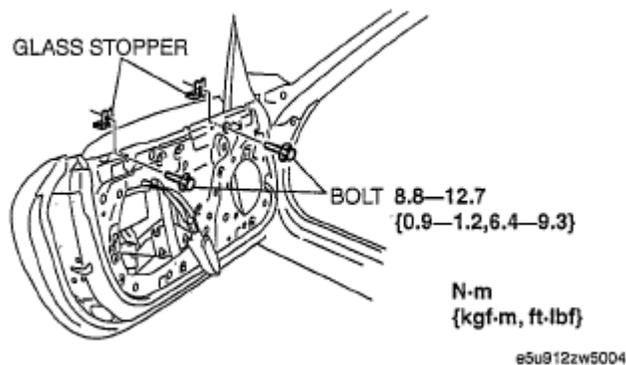


Fig. 3: Identifying Glass Stopper And Bolt With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

7. Remove the nuts attaching door glass to regulator.
8. Lift the door glass up, then remove it while tilting it in the direction of the arrow.
9. Install in the reverse order of removal.

10. Adjust the door glass. (See **DOOR GLASS ADJUSTMENT.**)

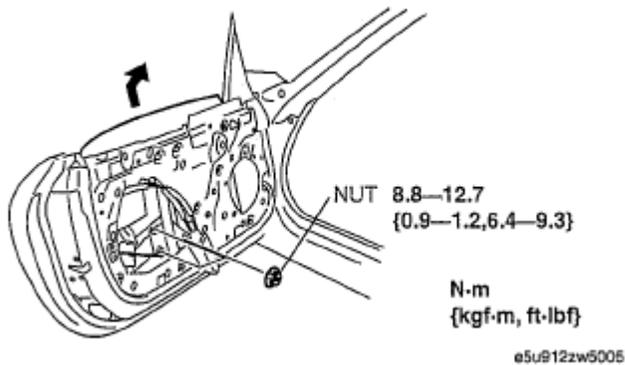


Fig. 4: Lifting Door Glass Up With Torque Specifications
Courtesy of MAZDA MOTORS CORP.

DOOR GLASS ADJUSTMENT

1. Fully close the door glass.
2. Remove the door trim. (See **DOOR TRIM REMOVAL/INSTALLATION .**)
3. Remove the door unit. (See **DOOR UNIT REMOVAL/INSTALLATION .**)
4. Connect the power window regulator connector.
5. Loosen the glass stopper installation bolts.
6. Loosen the power window regulator and door glass tightening nuts.
7. Align the door glass with the rear edge of the front beltline molding.

NOTE:

- The standard position for the rear edge of the front beltline molding is 1 mm from the rear edge of the door panel. If the standard position for the rear edge of the front beltline molding has deviated, align the rear edge of the door glass to the standard position for the rear edge position of the front beltline molding.

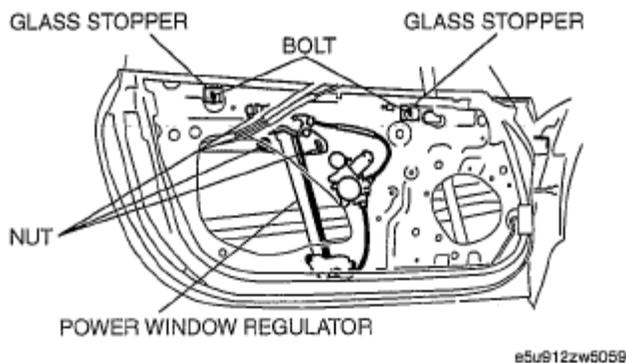


Fig. 5: Identifying Glass Stopper, Power Window Regulator With Bolt And Nut

Courtesy of MAZDA MOTORS CORP.

- Lightly tighten the power window regulator and door glass tightening nuts.

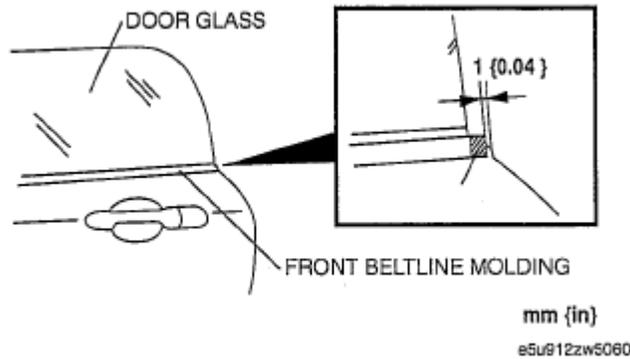


Fig. 6: Identifying Door Glass With Clearance
 Courtesy of MAZDA MOTORS CORP.

- Adjust the clearance between the upper edge of the door glass and the door glass guide.

DOOR GLASS CLEARANCE SPECIFICATIONS

Clearance	Standard	Minimum	Maximum
a	1.0 mm {0.04 in}	0 mm {0 in}	1.5 mm {0.06 in}

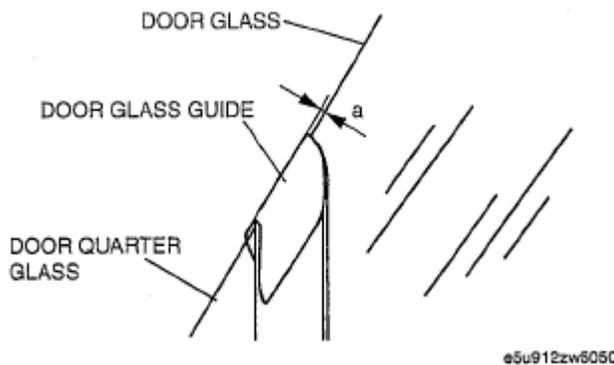


Fig. 7: Identifying Door Glass, Door Glass Guide With Clearance
 Courtesy of MAZDA MOTORS CORP.

- Adjust the door glass position.

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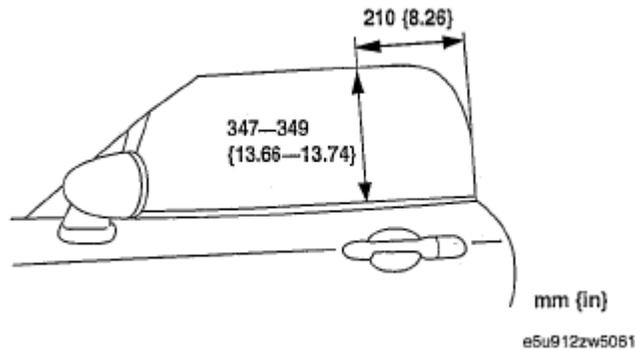


Fig. 8: Identifying Door Glass Position
Courtesy of MAZDA MOTORS CORP.

11. Tighten the power window regulator and door glass tightening nuts.

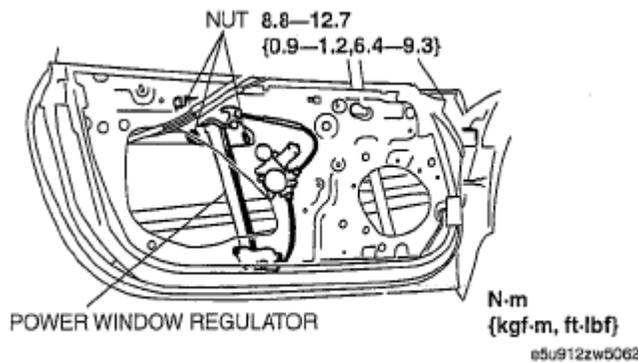


Fig. 9: Identifying Power Window Regulator & Door Glass Tightening Nuts With Torque Specifications
Courtesy of MAZDA MOTORS CORP.

12. Tighten the bolts while pressing the glass stopper in the direction of the arrows.
13. Verify that the door glass opens and closes smoothly.
14. Install the door unit.(See **DOOR UNIT REMOVAL/INSTALLATION** .)
15. Install the door trim.(See **DOOR TRIM REMOVAL/INSTALLATION** .)
16. Close the door with the convertible top, detachable hardtop, or power retractable hardtop closed and verify that the door glass opens and closes smoothly.

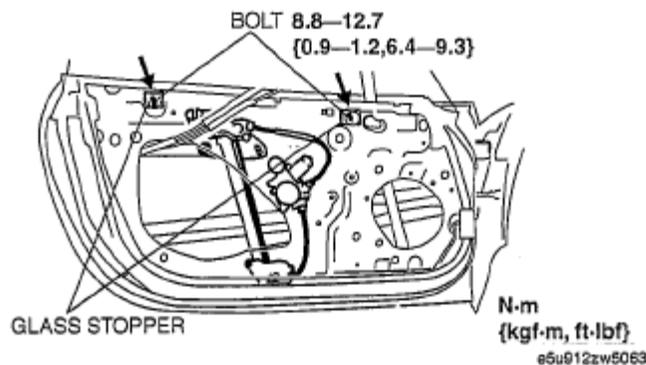


Fig. 10: Identifying Glass Stopper With Bolt With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

DOOR QUARTER GLASS REMOVAL/INSTALLATION

1. Position the door glass so that the distance between the top of the front door glass and top of the front beltline molding is **110 mm {4.33 in.}**
2. Remove the battery cover.
3. Disconnect the negative battery cable.(See **BATTERY REMOVAL/INSTALLATION [LF]** .)
4. Remove the door trim.(See **DOOR TRIM REMOVAL/INSTALLATION** .)
5. Remove the door unit.(See **DOOR UNIT REMOVAL/INSTALLATION** .)
6. Remove the door glass.(See **DOOR GLASS REMOVAL/INSTALLATION**.)
7. Remove the power window regulator.(See **POWER WINDOW REGULATOR REMOVAL/INSTALLATION**.)
8. Remove the nut and bolt, then remove the door glass guide.(See **DOOR GLASS GUIDE INSTALLATION NOTE**.)

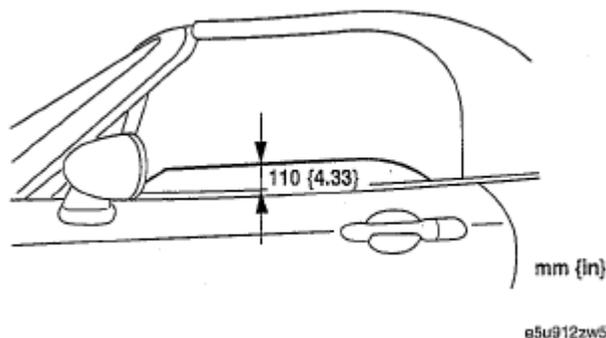


Fig. 11: Identifying Distance Between Top Of Front Door Glass & Top Of Front Belt Line Molding
 Courtesy of MAZDA MOTORS CORP.

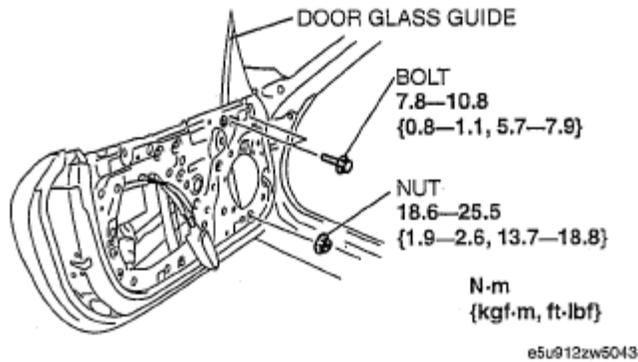


Fig. 12: Identifying Door Glass Guide With Bolt And Nut With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

9. Remove the nuts, then remove the door quarter glass.
10. Install in the reverse order of removal.

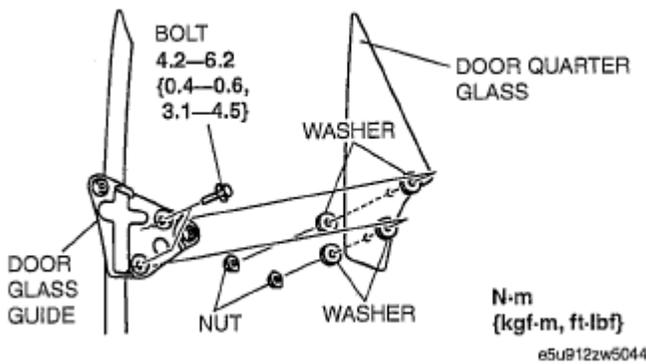


Fig. 13: Identifying Door Quarter Glass Remove/Install Components With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

DOOR GLASS GUIDE INSTALLATION NOTE

1. Adjust the adjustment bolt as shown in the figure.

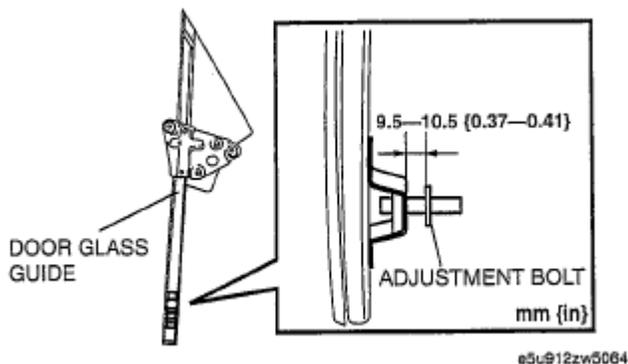


Fig. 14: Identifying Door Glass Guide With Adjustment Bolt

Courtesy of MAZDA MOTORS CORP.

POWER WINDOW REGULATOR REMOVAL/INSTALLATION

1. Remove the battery cover.
2. Disconnect the negative battery cable.(See **BATTERY REMOVAL/INSTALLATION [LF]** .)
3. Remove the door trim.(See **DOOR TRIM REMOVAL/INSTALLATION** .)
4. Remove the door unit.(See **DOOR UNIT REMOVAL/INSTALLATION** .)
5. Remove the door glass.(See **DOOR GLASS REMOVAL/INSTALLATION..**)
6. Remove the nuts.

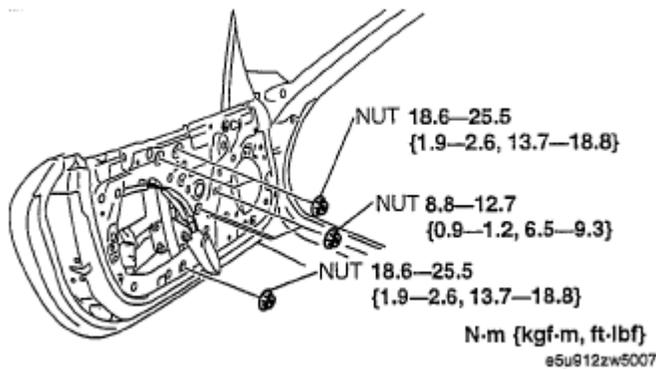


Fig. 15: Identifying Regulator Nuts With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

7. Remove the power window regulator.
8. Install in the reverse order of removal.

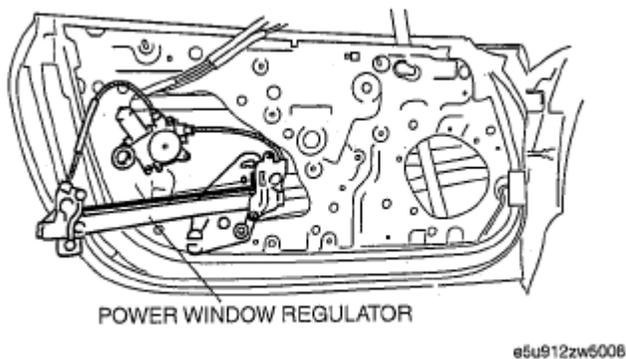


Fig. 16: Identifying Power Window Regulator
 Courtesy of MAZDA MOTORS CORP.

POWER WINDOW REGULATOR DISASSEMBLY/ASSEMBLY

1. Remove in the order indicated in the table.

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Power Window Regulator Disassembly/Assembly Table

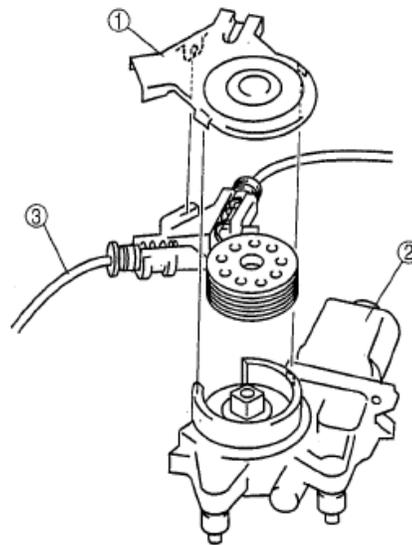
1	Cover (See Cover Disassembly Note)
2	Power window motor
3	Frame

2. Assemble in the reverse order of disassembly.

NOTE:

- When installing the power window motor, be careful that the cable does not become unwound from the drum.

1	Cover
2	Power window motor
3	Frame

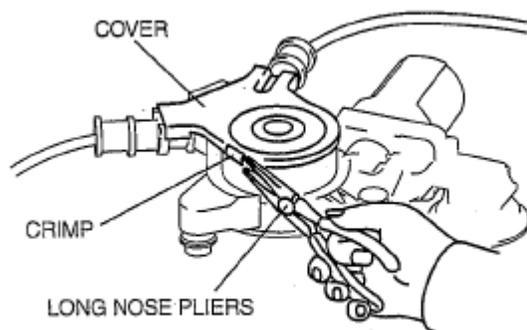


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Fig. 17: Power Window Regulator Disassembly/Assembly View
Courtesy of MAZDA MOTORS CORP.

COVER DISASSEMBLY NOTE

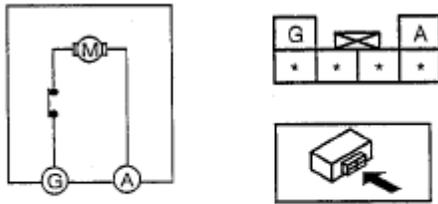
1. Carefully bend away the crimp of the cover using long nose pliers.



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Fig. 18: Crimping Cover Using Long Nose Pliers

Courtesy of MAZDA MOTORS CORP.



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Fig. 19: Identifying Power Window Motor Connector
 Courtesy of MAZDA MOTORS CORP.

POWER WINDOW MOTOR INSPECTION

1. Apply battery positive voltage to the power window motor terminals, and inspect the power window motor operation.
 - If the power window motor does not operate as indicated in the table, replace it.

POWER WINDOW MOTOR OPERATION REFERENCE

Operation	Terminal	
	G	A
Open	Ground	B+
Close	B+	Ground

POWER WINDOW MAIN SWITCH REMOVAL/INSTALLATION

1. Remove the battery cover.
2. Disconnect the negative battery cable.(See **BATTERY REMOVAL/INSTALLATION [LF]** .)
3. Remove the console.(See **CONSOLE REMOVAL/INSTALLATION** .)
4. Depress the tab and remove the power window main switch.
5. Install in the reverse order of removal.

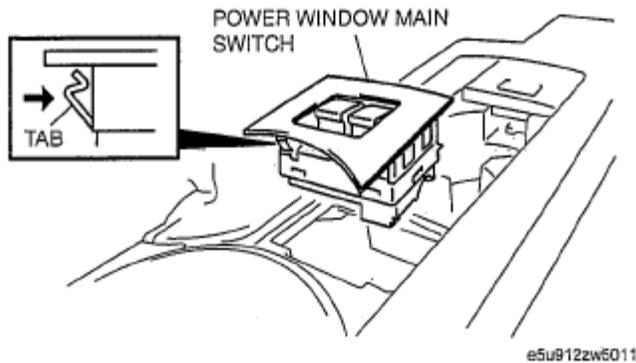


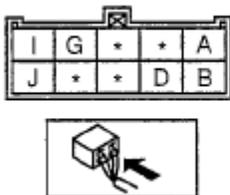
Fig. 20: Locating Tab And Power Window Main Switch
 Courtesy of MAZDA MOTORS CORP.

POWER WINDOW MAIN SWITCH INSPECTION

DRIVER'S SIDE

1. Measure the voltage at each terminal (other than terminal J).
 - If the voltage is not as specified in the Terminal Voltage Table, inspect the parts under "Inspection item (s)" and related wiring harnesses.
2. Remove the battery cover.
3. Disconnect the negative battery cable.(See **BATTERY REMOVAL/INSTALLATION [LF]** .)
4. Inspect the power window main switch connector for continuity at terminal J.
5. If the system does not work properly even though the inspection items or related wiring harnesses do not have any malfunction, replace the power window main switch.

POWER WINDOW MAIN SWITCH
 HARNESS-SIDE CONNECTOR



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Fig. 21: Identifying Power Window Main Switch Connector Terminals
 Courtesy of MAZDA MOTORS CORP.

POWER WINDOW MAIN SWITCH INSPECTION CHART

Terminal	Signal name	Connected to	Measured condition	Voltage (V)/Continuity	Inspection item (s)
B	Open	Power window	While door glass is opening	B+	<ul style="list-style-type: none"> • Power window motor (See POWER WINDOW)

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	output	motor	While door glass is closing	1.0 or less	MOTOR INSPECTION..) • Related wiring harnesses
G	Close output	Power window motor	While door glass is opening	1.0 or less	• Power window motor (See POWER WINDOW MOTOR INSPECTION..) • Related wiring harnesses
			While door glass is closing	B+	
I	Power supply	P/WIND 20A fuse	Ignition switch at ON	B+	• P/WIND 20A fuse • Related wiring harnesses
J	GND	Body ground	Under any condition: Inspect for continuity to ground	Continuity detected	• GND

PASSENGER'S SIDE

1. Verify that the continuity between the power window main switch terminals is as indicated in the table.

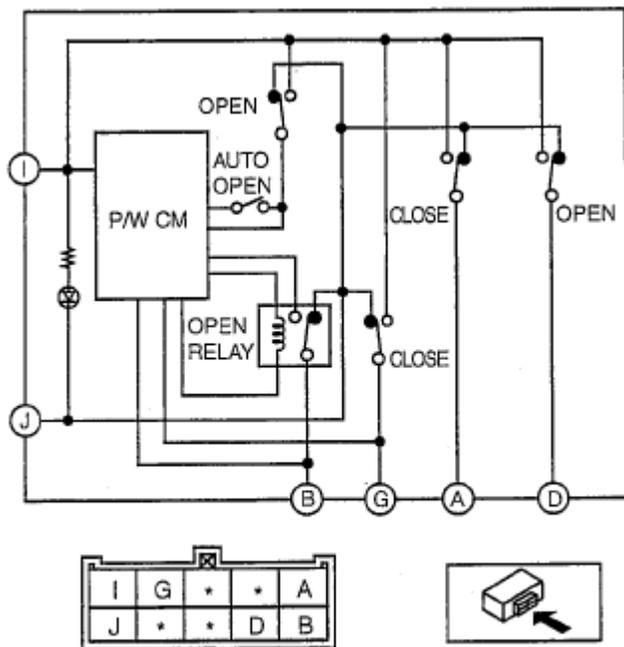
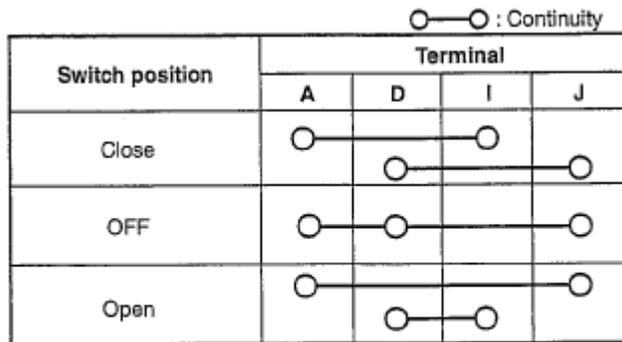


Fig. 22: Power Window Main Switch Circuit Diagram
Courtesy of MAZDA MOTORS CORP.

- If not as indicated in the table, replace the power window main switch.
2. Apply battery positive voltage to terminal I, and connect the ground to terminal J, and then verify that the light emitting diode illuminates.
 - If not as specified, replace the power window main switch.

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Fig. 23: Power Window Main Switch Continuity Table
 Courtesy of MAZDA MOTORS CORP.

POWER WINDOW MAIN SWITCH INSPECTION [POWER RETRACTABLE HARDTOP]

WITH EXTERIOR OPEN FUNCTION

1. Measure the voltage at each terminal (other than terminals 1G, 1H, 2B and 2C).
 - If the voltage is not as specified in the Terminal Voltage Table, inspect the parts under "inspection item(s)" and related wiring harnesses.
2. Disconnect the negative battery cable.
3. Inspect the power window main switch connector for continuity at terminal 1G.
4. If the system does not work properly even though the inspection items or related wiring harnesses do not have any malfunction, replace the power window main switch.

POWER WINDOW MAIN SWITCH INSPECTION CHART (WITH EXTERIOR OPEN FUNCTION)

Terminal	Signal name	Connected to	Measured condition	Voltage (V)/Continuity	Inspection item (s)
1A	Power supply	P/W 20 A fuse	Under any condition	B+	<ul style="list-style-type: none"> • P/W 20 A fuse • Related wiring harnesses
1B	IG 1	IG KEY1 20 A fuse	Ignition switch is at ON position	B+	<ul style="list-style-type: none"> • Inspect IG KEY1 20 A fuse • Related wiring harnesses
			Ignition switch is at LOCK position	1.0 or less	
1D	Close output	Power	While door glass is opening	1.0 or less	<ul style="list-style-type: none"> • Power window motor (See POWER WINDOW MOTOR)

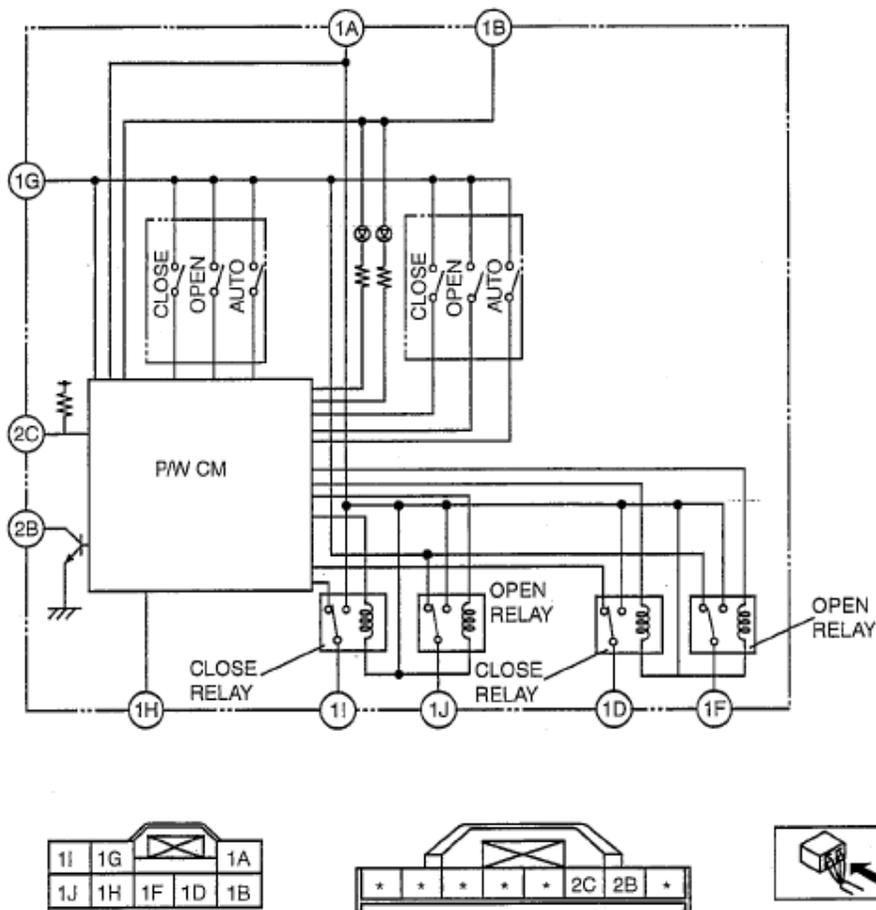
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		window motor	While door glass is closing	B+	<p><u>INSPECTION..)</u></p> <ul style="list-style-type: none"> • Related wiring harnesses
1F	Open output	Power window motor	While door glass is opening	B+	<ul style="list-style-type: none"> • Power window motor (See <u>POWER WINDOW MOTOR INSPECTION..)</u>) • Related wiring harnesses
			While door glass is closing	1.0 or less	
1G	GND	Body ground	Under any condition: Inspect for continuity to ground	Continuity detected	<ul style="list-style-type: none"> • GND
1H	Communication	Keyless control module	Under any condition: Inspect for continuity to keyless control modul	Continuity detected	<ul style="list-style-type: none"> • Keyless control module
1I	Close output	Power window motor	While door glass is opening	1.0 or less	<ul style="list-style-type: none"> • Power window motor (See <u>POWER WINDOW MOTOR INSPECTION..)</u>) • Related wiring harnesses
			While door glass is closing	B+	
1J	Open output	Power window motor	While door glass is opening	B+	<ul style="list-style-type: none"> • Power window motor (See <u>POWER WINDOW MOTOR INSPECTION..)</u>) • Related wiring harnesses
			While door glass is closing	1.0 or less	
2C	Communication	Power retractable hardtop control module	Under any condition: Inspect for continuity to power retractable hardtop	Continuity detected	<ul style="list-style-type: none"> • Power retractable hard top control module
2B	Communication	Power retractable hardtop control module	Under any condition: Inspect for continuity to power retractable hardtop	Continuity detected	<ul style="list-style-type: none"> • Power retractable hard top control module

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Fig. 24: Power Window Main Switch Circuit Diagram (With Exterior Open Function)
 Courtesy of MAZDA MOTORS CORP.

WITHOUT EXTERIOR OPEN FUNCTION

1. Measure the voltage at each terminal (other than terminals A, H and G).
 - If the voltage is not as specified in the Terminal Voltage Table, inspect the parts under "inspection item(s)" and related wiring harnesses.
2. Disconnect the negative battery cable.
3. Inspect the power window main switch connector for continuity at terminal G.
4. If the system does not work properly even though the inspection items or related wiring harnesses do not have any malfunction, replace the power window main switch.

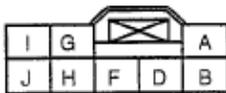
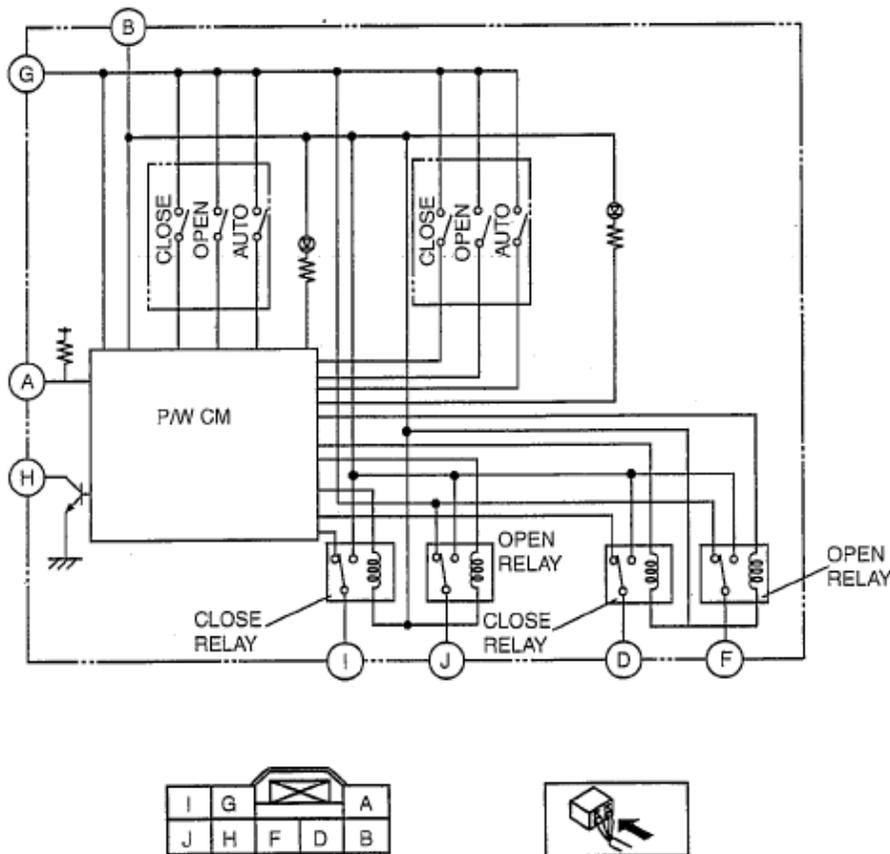
POWER WINDOW MAIN SWITCH INSPECTION CHART (WITHOUT EXTERIOR OPEN FUNCTION)

Terminal	Signal name	Connected to	Measured condition	Voltage (V)/Continuity	Inspection item (s)

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B	IG 1	IG KEY1 20 A fuse	Ignition switch is at ON position	B+	<ul style="list-style-type: none"> Inspect IG KEY1 20 A fuse Related wiring harnesses
			Ignition switch is at LOCK position	1.0 or less	
D	Close output	Power window motor	While door glass is opening	1.0 or less	<ul style="list-style-type: none"> Power window motor (See POWER WINDOW MOTOR INSPECTION..) Related wiring harnesses
			While door glass is closing	B+	
F	Open output	Power window motor	While door glass is opening	B+	<ul style="list-style-type: none"> Power window motor (See POWER WINDOW MOTOR INSPECTION..) Related wiring harnesses
			While door glass is closing	1.0 or less	
G	GND	Body ground	Under any condition: Inspect for continuity to ground	Continuity detected	<ul style="list-style-type: none"> GND
I	Close output	Power window motor	While door glass is opening	1.0 or less	<ul style="list-style-type: none"> Power window motor (See POWER WINDOW MOTOR INSPECTION..) Related wiring harnesses
			While door glass is closing	B+	
J	Open output	Power window motor	While door glass is opening	B+	<ul style="list-style-type: none"> Power window motor (See POWER WINDOW MOTOR INSPECTION..) Related wiring harnesses
			While door glass is closing	1.0 or less	
A	Communication	Power retractable hardtop	Under any condition: Inspect for continuity to power retractable hardtop	Continuity detected	<ul style="list-style-type: none"> Power retractable hard top control module
H	Communication	Power retractable hardtop	Under any condition: Inspect for continuity to power retractable hardtop	Continuity detected	<ul style="list-style-type: none"> Power retractable hard top control module



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Fig. 25: Power Window Main Switch Circuit Diagram (Without Exterior Open Function)
 Courtesy of MAZDA MOTORS CORP.

WINDSHIELD REMOVAL

1. Remove the battery cover.
2. Disconnect the negative battery cable.(See **BATTERY REMOVAL/INSTALLATION [LF]** .)
3. Remove the following parts:
 1. Wiper arm and blade (See **WIPER ARM AND BLADE REMOVAL/INSTALLATION** .)
 2. Cowl grille (See **COWL GRILLE REMOVAL/INSTALLATION** .)
 3. Side cowl grille (See **SIDE COWL GRILLE REMOVAL/INSTALLATION** .)
 4. Windshield garnish (See **WINDSHIELD GARNISH REMOVAL** .)
 5. Rearview mirror (See **REARVIEW MIRROR REMOVAL/INSTALLATION**.)
 6. Front header trim (See **FRONT HEADER TRIM REMOVAL/INSTALLATION** .)
 7. Map light (See **MAP LIGHT REMOVAL/INSTALLATION** .)
 8. A-pillar trim (See **A-PILLAR TRIM REMOVAL/INSTALLATION** .)
4. Apply protective tape along the edge of the body.

NOTE:

- **Overlap and adhere the protective tape to the corners to prevent damage.**

5. Remove the windshield molding by pulling it outward.

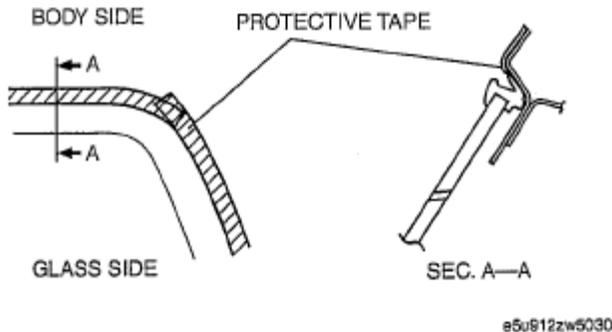


Fig. 26: Identifying Protective Tape
Courtesy of MAZDA MOTORS CORP.

NOTE:

- **If the windshield molding is difficult to remove, warm the windshield molding using a hot air blower.**
- **The windshield molding is a replacement part.**

NOT REUSING WINDSHIELD

NOTE:

- **For the areas of the sealant that are difficult to cut, use the SST (piano wire) and follow the procedure under "Reusing Windshield".**

WARNING:

- **Using the SST (piano wire) with bare hands can cause injury. Always wear gloves when using the SST (piano wire).**

1. Cut out the sealant all around the glass using a sealant remover.
2. Remove the windshield.

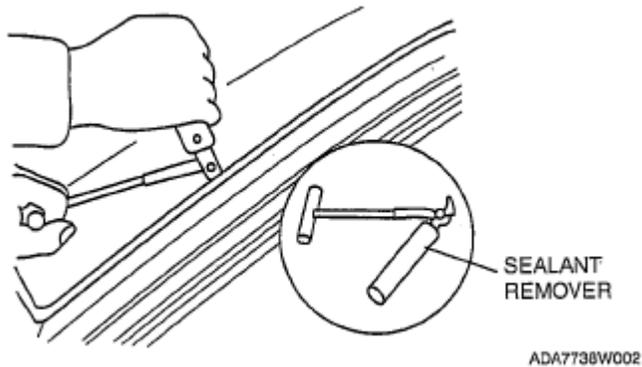


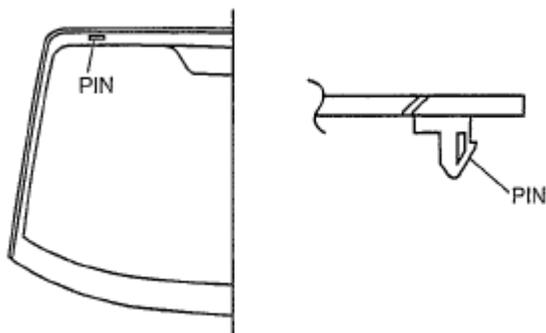
Fig. 27: Cutting Glass Sealant
Courtesy of MAZDA MOTORS CORP.

REUSING WINDSHIELD

- WARNING:**
- Using the SST (piano wire) with bare hands can cause injury. Always wear gloves when using the SST (piano wire).

- NOTE:**
- Before removing the windshield from the body, mark the position of the windshield by affixing tape to the windshield and body panel.

1. Avoiding the pin on the inside of the vehicle, insert the SST (piano wire) which has been cut to sufficient length.



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Fig. 28: Identifying Pin Position
Courtesy of MAZDA MOTORS CORP.

2. Wind each end of the SST (piano wire) around a bar.

- NOTE:**
- Use a long sawing action to spread the work over the whole length of the SST (piano wire) to prevent it from breaking due to localized heating.

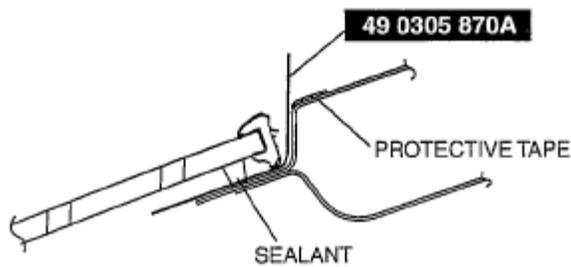


Fig. 29: Identifying SST
Courtesy of MAZDA MOTORS CORP.

3. Secure one end of the SST (piano wire), and while pulling the other end, cut the sealant around the windshield.
4. Pinch the pin from the inside of the vehicle and detach it.
5. Remove the windshield.
6. If the pin is damaged, remove the pin.

NOTE:

- Before removing the pin from the windshield glass, place an alignment mark on the windshield.

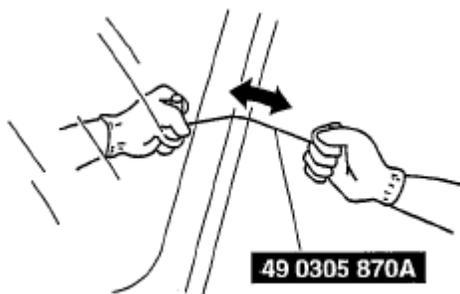


Fig. 30: Cutting Sealant Around Window Glass
Courtesy of MAZDA MOTORS CORP.

WINDSHIELD INSTALLATION

WARNING:

- Using a razor with bare hands can cause injury. Always wear gloves when using a razor.

CAUTION:

- If a door is opened or closed when all the window glass is closed, the resulting change in air pressure could cause the sealant to crack preventing the proper installation of the glass. Keep the door glass opened until the windshield installation is completed.

1. Remove the sealant along the perimeter of the glass using a cutting a razor. (When reusing the glass)
2. Clean and degrease an **approx. 50 mm {2.0 in}** wide strip along the perimeter of the windshield.
3. Inspect the glass for cracks. If it is cracked, chamfer it using sandpaper.
4. Align the marks made before removal and install the pin to the windshield referring to the figure. (when reusing the glass, and the pin was removed)

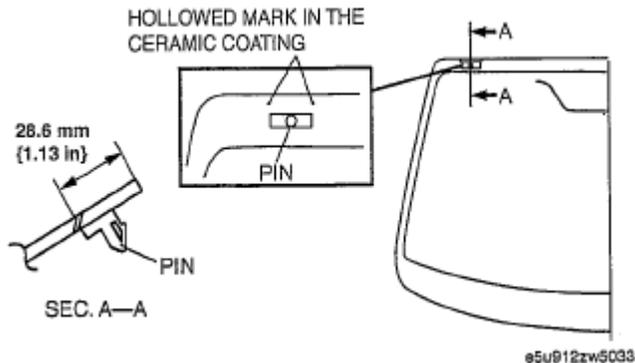


Fig. 31: Positions For Installing Pin To Windshield
 Courtesy of MAZDA MOTORS CORP.

5. Install the windshield molding.
6. Use glass primer on the glass, then allow it to dry for **approx. 30 min.**

CAUTION:

- To prevent weakening of the primer adhesion, keep the bonding surface free of dirt, moisture, and grease. Do not touch the surface with your hand.

NOTE:

- Make sure to apply primer to the hollowed marks in the ceramic coating.

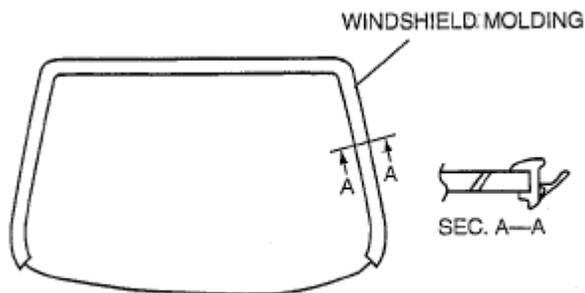


Fig. 32: Identifying Windshield Molding
 Courtesy of MAZDA MOTORS CORP.

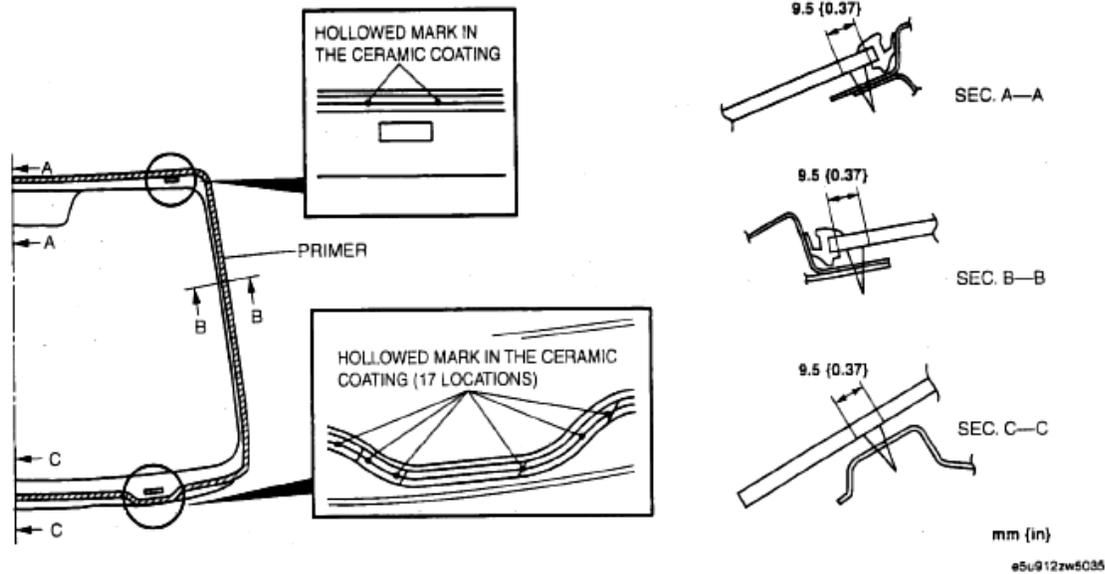
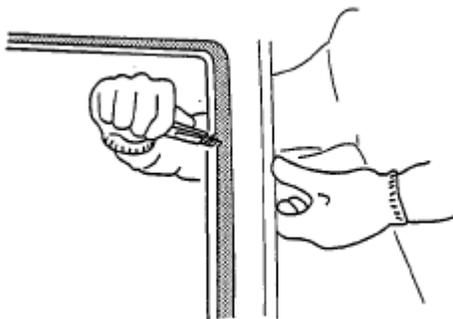


Fig. 33: Identifying Hollowed Mark With Sections For Applying Primer
 Courtesy of MAZDA MOTORS CORP.

7. Cut away the old sealant using a razor or scraper so that 1-2 mm {0.04-0.07 in} thickness of sealant remains along the perimeter of the frame.
8. If the sealant has come off completely in any one place, apply some primer after degreasing, and allow it **approx. 30 min** to dry. Then apply **2 mm {0.07 in}** thickness of new sealant.

CAUTION:

- To prevent weakening of the primer adhesion, keep the bonding surface free of dirt, moisture, and grease. Do not touch the surface with your hand.



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Fig. 34: Cutting Old Sealant Using Razor Or Scraper
 Courtesy of MAZDA MOTORS CORP.

9. Clean and degrease along the perimeter of the bonding area on the body.
10. Apply body primer on the body as shown in the figure, then allow it to dry for **approx. 30 min**.

- CAUTION:**
- To prevent weakening of the primer adhesion, keep the bonding surface free of dirt, moisture, and grease. Do not touch the surface with your hand.

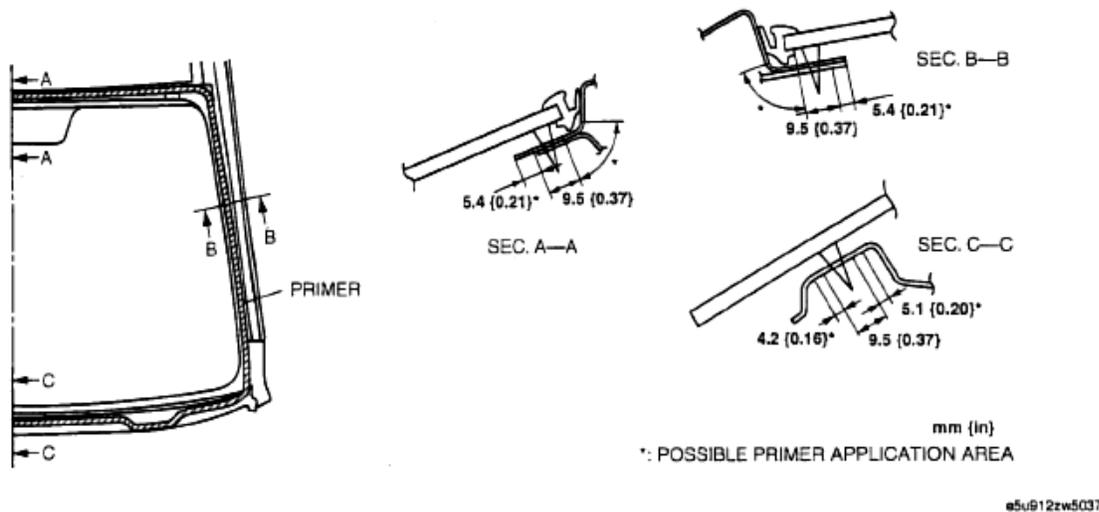


Fig. 35: Identifying Sections For Applying Primer
Courtesy of MAZDA MOTORS CORP.

11. Apply sealant to the area of the glass surface as shown in the figure.
12. Insert the windshield locator pins to the body and install the windshield.

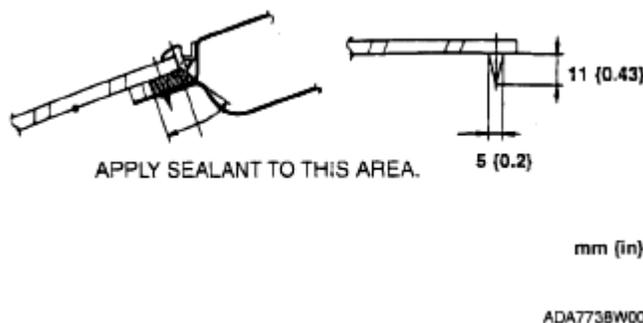


Fig. 36: Applying Sealant To Glass Surface
Courtesy of MAZDA MOTORS CORP.

13. Verify that the clearance of the A-pillar is within the range shown in the figure, and press along the perimeter of the glass.
14. Install the following parts:
 1. A-pillar trim (See **A-PILLAR TRIM REMOVAL/INSTALLATION** .)
 2. Map light (See **MAP LIGHT REMOVAL/INSTALLATION** .)
 3. Front header trim (See **FRONT HEADER TRIM REMOVAL/INSTALLATION** .)
 4. Rearview mirror (See **REARVIEW MIRROR REMOVAL/INSTALLATION..**)

5. Windshield garnish (See WINDSHIELD GARNISH INSTALLATION .)
6. Cowl grille (See COWL GRILLE REMOVAL/INSTALLATION .)
7. Side cowl grille (See SIDE COWL GRILLE REMOVAL/INSTALLATION .)
8. Wiper arm and blade (See WIPER ARM AND BLADE REMOVAL/INSTALLATION .)

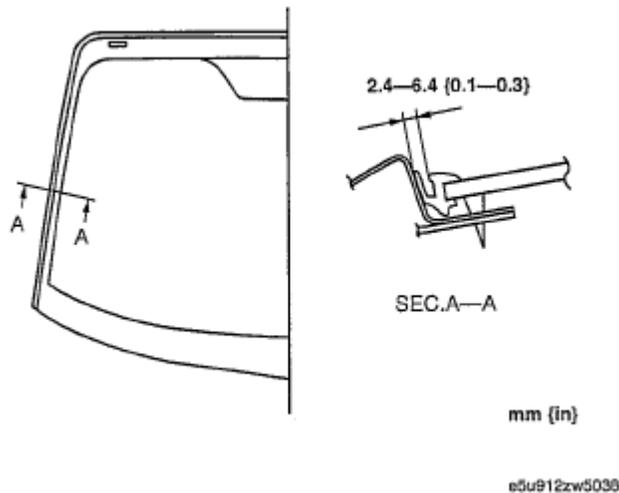


Fig. 37: Identifying Clearance Of A-Pillar
Courtesy of MAZDA MOTORS CORP.

15. Allow the sealant to harden completely.

Sealant hardening time: 24 h

REAR WINDOW GLASS REMOVAL[DETACHABLE HARDTOP]

1. Remove the battery cover.
2. Remove the negative battery cable.(See BATTERY REMOVAL/INSTALLATION [LF] .)
3. Remove the detachable hardtop.
4. Remove the B-pillar garnish.
5. Remove the side lock.
6. Remove the B-pillar upper trim. (See B-PILLAR UPPER TRIM REMOVAL [DETACHABLE HARDTOP] .)
7. Remove the rear trim. (See REAR TRIM REMOVAL [DETACHABLE HARDTOP] .)
8. Remove the rear deck lock. (See DETACHABLE HARDTOP ADJUSTMENT .)
9. Cut the rear window molding lip using a razor.

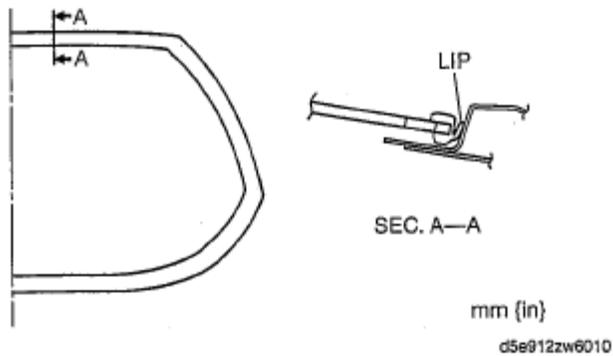


Fig. 38: Identifying Lip With Section A-A
 Courtesy of MAZDA MOTORS CORP.

10. Apply protective tape along the edge of the body.

NOTE:

- Overlap and adhere the protective tape to the corners to prevent damage.

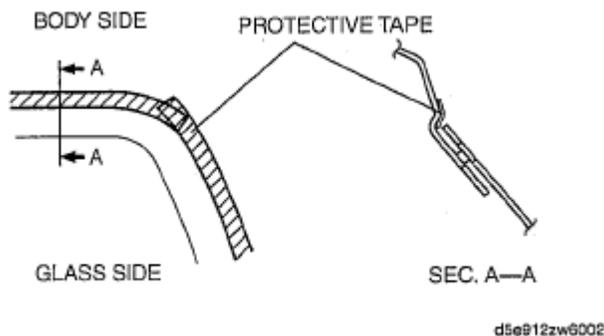


Fig. 39: Identifying Protective Tape On Edge Of Body
 Courtesy of MAZDA MOTORS CORP.

11. Insert the SST (piano wire), which has been cut to sufficient length from inside the vehicle.

WARNING:

- Using the SST (piano wire) with bare hands can cause injury. Always wear gloves when using the SST (piano wire).

NOTE:

- Before removing the rear window glass from the body, mark the position of the glass by affixing tape to the glass and body panel.

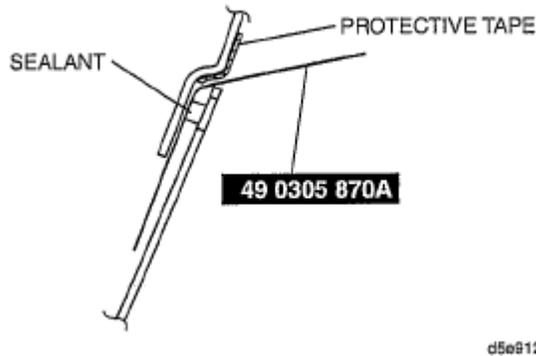


Fig. 40: Identifying SST (Piano Wire)
Courtesy of MAZDA MOTORS CORP.

12. Wind each end of the SST (piano wire) around a bar.

NOTE:

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

13. Secure one end of the SST (piano wire), and while pulling the other end, cut the sealant around the rear window glass.

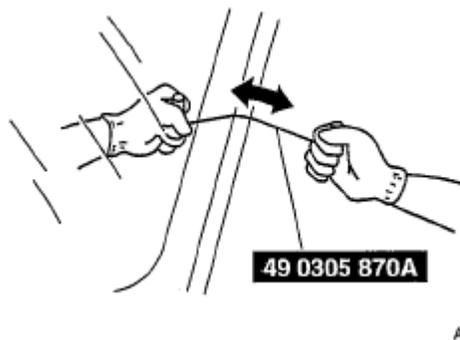


Fig. 41: Cutting Sealant Around Window Glass
Courtesy of MAZDA MOTORS CORP.

14. Cut the pins out.
15. Remove the rear window glass.
16. Mark the seating positions of the pins and remove the pins from the rear window glass.
17. Remove the rear window molding from the rear window glass.

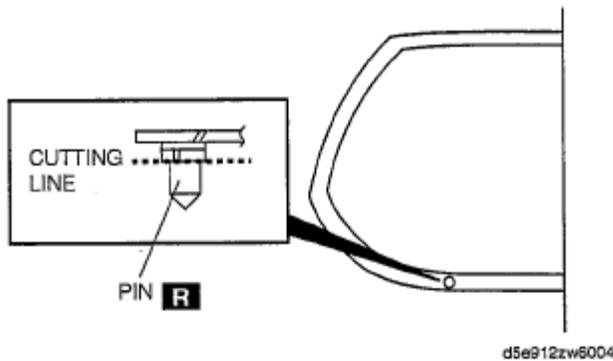


Fig. 42: Identifying Cutting Line And Pin
 Courtesy of MAZDA MOTORS CORP.

REAR WINDOW GLASS INSTALLATION[DETACHABLE HARDTOP]

CAUTION:

- Proper installation of the rear window glass may be difficult if sealant is cracked or the glass is pushed out by air pressure when a door is opened/closed with all the window glass closed. Leave all the windows open until the rear window glass is installed completely.

1. Cut away the old sealant using a razor so that a **1-2 mm {0.04-0.07 in}** thickness of sealant remains along the perimeter of the frame.

WARNING:

- Using a razor with bare hands can cause injury. Always wear gloves when using a razor.

2. If the sealant has come off completely in any one place, apply some primer after degreasing, and allow it to dry for **approx. 30 min.** Then apply a **2 mm {0.08 in}** thickness of sealant.
3. Clean and degrease the perimeter **approx. 50 mm {1.97 in}** from the glass end and the bonding area on the body.
4. Apply glass primer on the rear window glass, and body primer as shown in the figure. Allow it to dry for **approx. 30 min.**

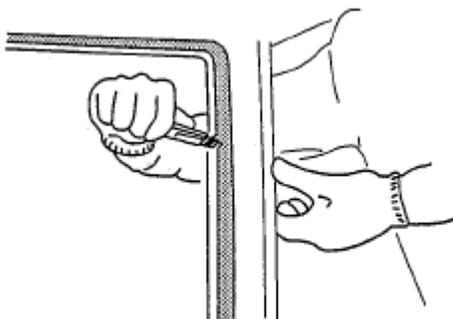


Fig. 43: Cutting Sealant Using Razor
 Courtesy of MAZDA MOTORS CORP.

CAUTION:

- Keep the area free of dirt and grease, and do not touch the surface. Otherwise, the primer may not properly bond to the surface of the glass and body, which may cause leakage.

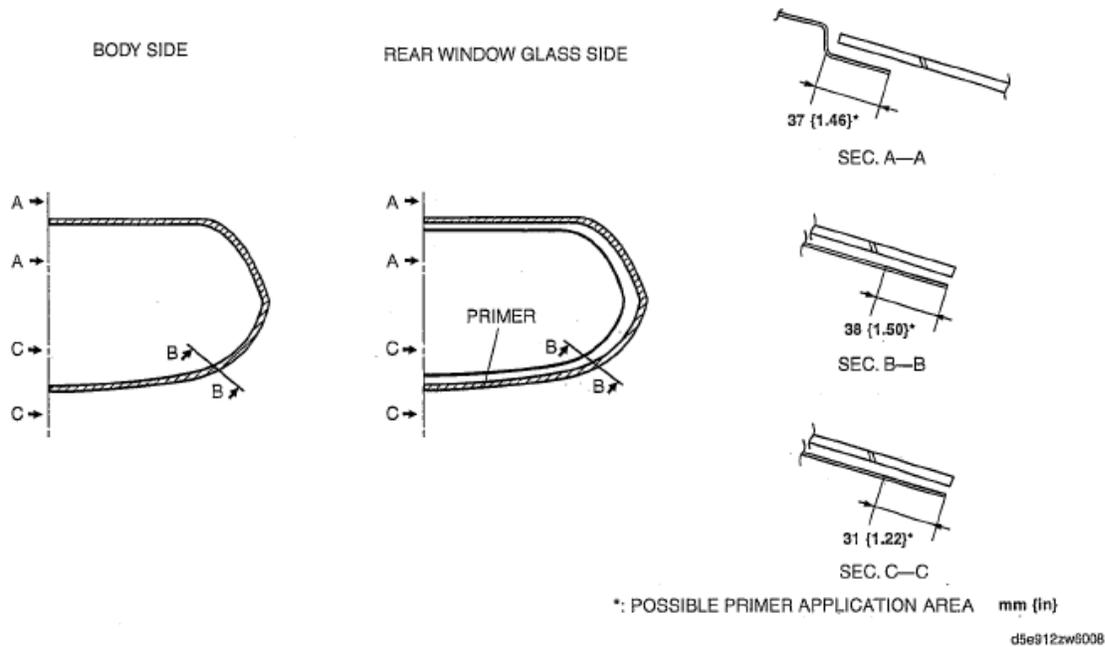


Fig. 44: Identifying Primer Application Area With Specifications
 Courtesy of MAZDA MOTORS CORP.

5. Apply sealant to the area of the glass surface as shown in the figure.
6. Insert the positioning pins into the body, then install the rear window.



Fig. 45: Identifying Sealant Applying Area On Glass Surface
 Courtesy of MAZDA MOTORS CORP.

7. Press the rear window pins to engage the tabs to the body.

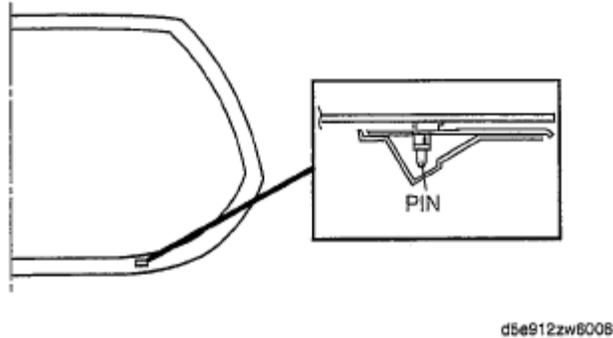


Fig. 46: Identifying Rear Window Pin
 Courtesy of MAZDA MOTORS CORP.

8. Press completely along the perimeter of the glass so that the measurement of the molding lip gap is within the specification.
9. Connect the filament connector.
10. Install the following parts:
 1. Rear deck lock cover (See **DETACHABLE HARDTOP ADJUSTMENT** .)
 2. Rear trim (See **REAR TRIM INSTALLATION [DETACHABLE HARDTOP]** .)
 3. B-pillar upper trim (See **B-PILLAR UPPER TRIM INSTALLATION [DETACHABLE HARDTOP]** .)
 4. Side lock
 5. B-pillar garnish
 6. Detachable hardtop
11. Allow the sealant to harden completely.

Sealant hardening time: 24 h

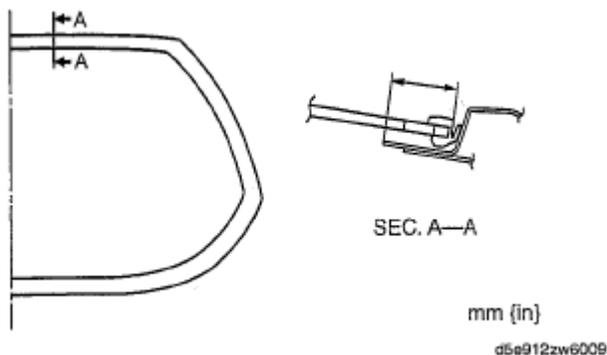


Fig. 47: Identifying Molding Lip Gap
 Courtesy of MAZDA MOTORS CORP.

REAR WINDOW GLASS REMOVAL/INSTALLATION[POWER RETRACTABLE HARDTOP]

2007 Mazda MX-5 Miata Sport

2007 ACCESSORIES & BODY, CAB Glass/Windows/Mirrors - MX-5 Miata

1. Remove the battery cover.
2. Disconnect the negative battery cable. (See **BATTERY REMOVAL/INSTALLATION [LF]** .)
3. Remove the following parts:
 1. Console (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
 2. Quarter trim (See **QUARTER TRIM REMOVAL/INSTALLATION** .)
 3. Scuff plate (See **SCUFF PLATE REMOVAL/INSTALLATION** .)
 4. Tire house trim (See **TIRE HOUSE TRIM REMOVAL/INSTALLATION** .)
 5. Aeroboard (See **AEROBOARD REMOVAL/INSTALLATION** .)
 6. Front seat back bar garnish (See **SEAT BACK BAR GARNISH REMOVAL/INSTALLATION** .)
 7. Back trim (See **BACK TRIM REMOVAL/INSTALLATION** .)
 8. Seat belt upper anchor installation bolt (See **SEAT BELT REMOVAL/INSTALLATION** .)
 9. Power retractable hardtop link bracket (See **POWER RETRACTABLE HARDTOP LINK BRACKET REMOVAL/INSTALLATION** .)
 10. Rear side trim (See **REAR SIDE TRIM REMOVAL/INSTALLATION** .)
 11. Cab-side weatherstrip (See **CONVERTIBLE TOP DISASSEMBLY/ASSEMBLY** .)
 12. Power retractable hardtop (See **POWER RETRACTABLE HARDTOP REMOVAL/INSTALLATION** .)

NOTE:

- The number of shims varies depending on the location of the rear window glass installation nut. Adjustment will be easier by verifying the number of shims to be used before removing the rear window glass.

4. Disconnect the filament connector.
5. If the rear window glass or the middle roof panel is to be reused, remove it using the following procedure.

NOTE:

- If the rear window glass or middle roof panel is to be used, positioning and adjustment during installation will be easier by placing marks for the installation before removal.
- Placing marks is not necessary if the rear window glass or middle roof panel is to be replaced with a new one because there will be no marked positions.

1. Affix masking tape to the position shown in the figure.

NOTE:

- Mark the roof link and rear window glass at 4 locations as shown in the figure.

2007 Mazda MX-5 Miata Sport

2007 ACCESSORIES & BODY, CAB Glass/Windows/Mirrors - MX-5 Miata

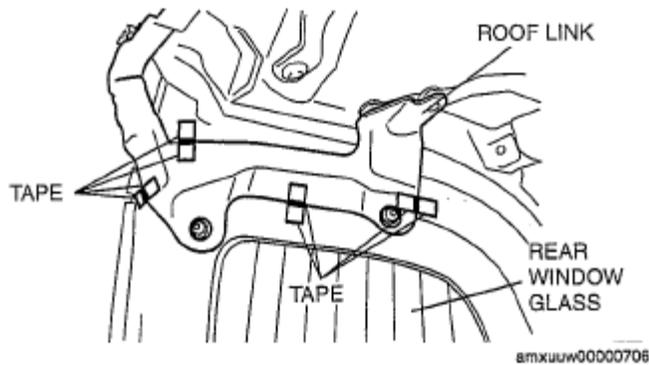


Fig. 48: Identifying Masking Tape
Courtesy of MAZDA MOTORS CORP.

2. Apply positioning marks to the masking tape.
3. Apply a positioning mark to the exterior circumference of the nuts.

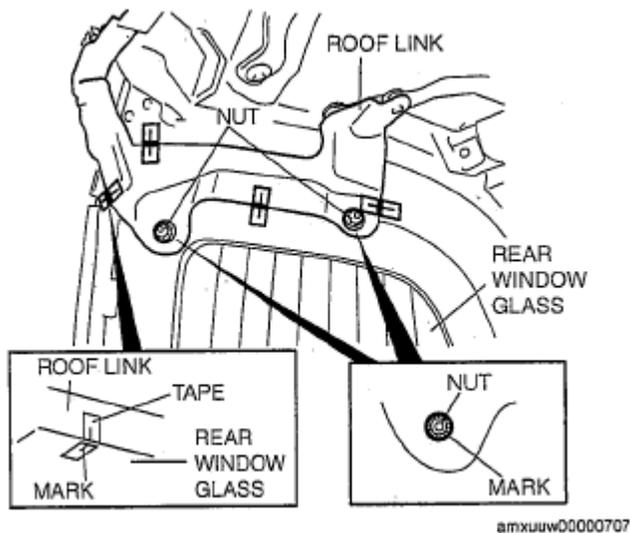


Fig. 49: Identifying Marks
Courtesy of MAZDA MOTORS CORP.

6. Move the power retractable hardtop in the open direction as shown in the figure until it is separated from the middle roof panel.

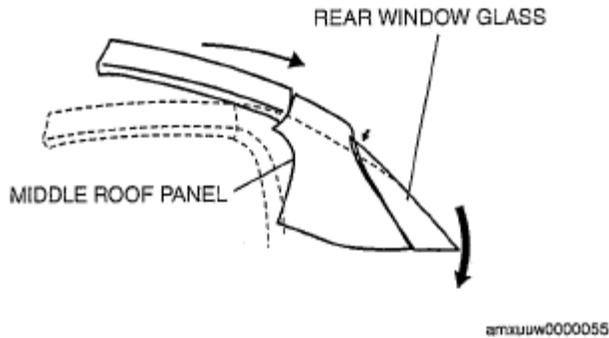


Fig. 50: Moving Power Retractable Hardtop
 Courtesy of MAZDA MOTORS CORP.

7. Remove the cap.
8. Remove the nuts and washers.
9. Remove the shims.
10. Remove the rear window glass.
11. Remove the rear window defroster.
12. Install in the reverse order of removal.

(See **REAR WINDOW GLASS INSTALLATION NOTE..**)

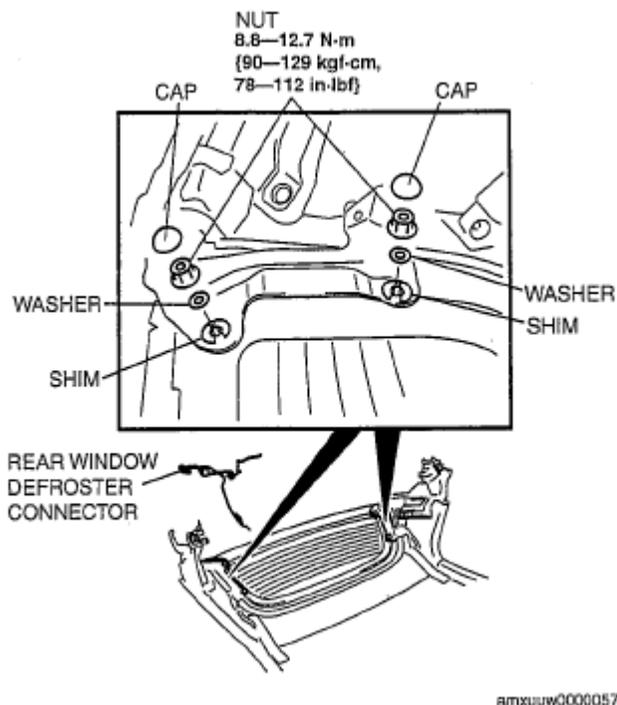


Fig. 51: Identifying Rear Window Defroster Remove/Install Components With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

REAR WINDOW DEFROSTER INSTALLATION NOTE

1. Remove the connector from the roof motor bracket.
2. Remove the wiring harness from clip A.
3. Remove clip B, then remove clip C while pulling it in the direction shown by the arrow avoiding the tab.

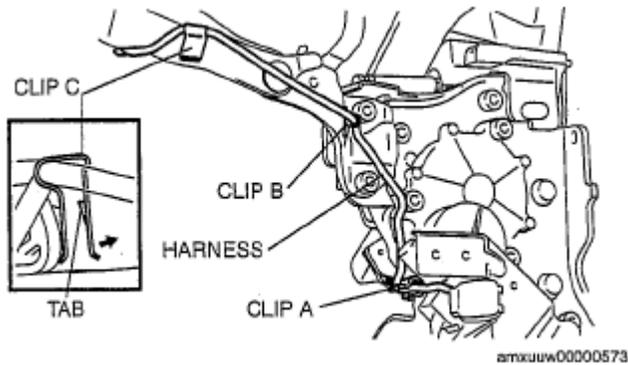


Fig. 52: Identifying Wiring Harness Clips
Courtesy of MAZDA MOTORS CORP.

4. Remove the wiring harness from the roof link lock groove.

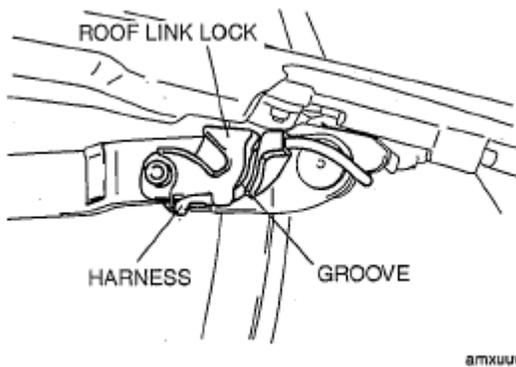


Fig. 53: Identifying Harness, Groove And Roof Link Lock
Courtesy of MAZDA MOTORS CORP.

5. Remove clip D while pulling it in the direction shown by the arrow avoiding the tab.

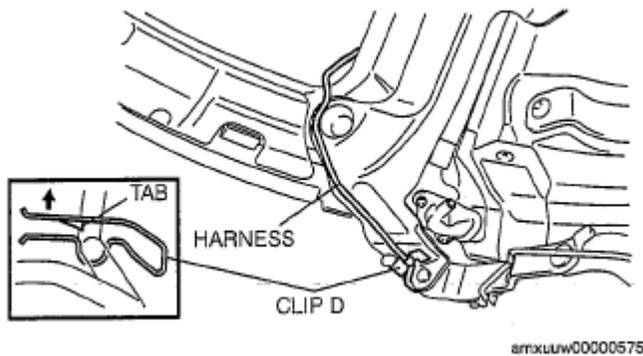


Fig. 54: Removing Clip D
Courtesy of MAZDA MOTORS CORP.

REAR WINDOW GLASS INSTALLATION NOTE

Rear window glass or middle roof panel is newly replaced

1. Adjust the rear window glass and middle roof panel gap and height difference so that it is within the specification. (See **POWER RETRACTABLE HARDTOP ADJUSTMENT** .)

Rear window glass or middle roof panel is reused

1. Install the shim according to the number verified prior to removal.
2. Align the alignment marks applied before the rear window glass removal, install the rear window glass, and then remove the masking tape.
3. Refer to **POWER RETRACTABLE HARDTOP ADJUSTMENT** and verify that the gap and height difference between the rear window glass and middle roof panel are within the specifications. Adjust the power retractable hardtop if necessary. (See **POWER RETRACTABLE HARDTOP ADJUSTMENT** .)

REAR WINDOW DEFROSTER FILAMENT INSPECTION

1. Turn the ignition switch to the ON position.
2. Turn the rear window defroster switch on.

CAUTION:

- Directly touching the rear window defroster filament with the lead of the voltmeter could damage it. Wrap aluminum foil around the end of the lead and test the rear window defroster filament by touching it with the foil.

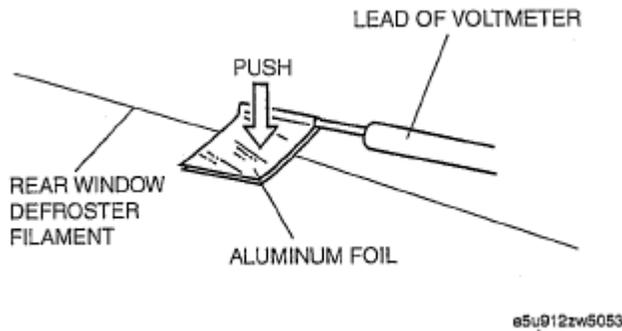


Fig. 55: Touching Rear Window Defroster Filament With Lead Of Voltmeter
 Courtesy of MAZDA MOTORS CORP.

3. Connect the positive lead of the tester to the positive side of each rear window defroster filament and the negative lead to ground.
 4. Gradually slide the positive lead from the positive side to the negative side and verify that the voltage decreases accordingly.
- If the voltage changes rapidly, the rear window defroster filament has a malfunction. Repair the rear window defroster filament.

VOLTAGE (REFERENCE)

Measured part	Voltage (Reference)
(1) to (2)	Approx. 12 V to 0 V

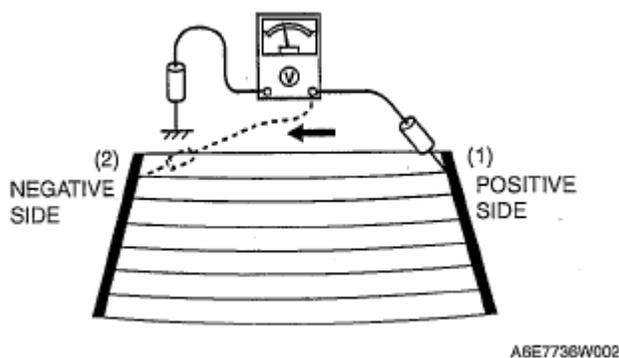
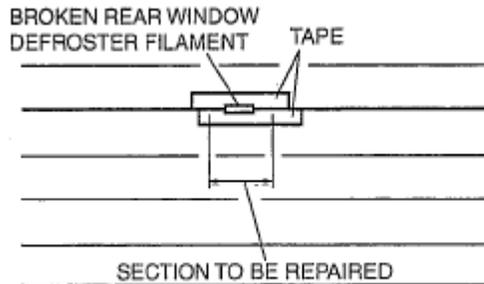


Fig. 56: Checking Voltage Drop In Filament
 Courtesy of MAZDA MOTORS CORP.

REAR WINDOW DEFROSTER FILAMENT REPAIR

1. Clean the rear window defroster filament using isopropyl alcohol.
2. Attach tape to both sides of the rear window defroster filament.
3. Using a small brush or marking pen, apply silver paint.
4. After 2-3 min, carefully remove the tape without damaging the applied area.

- CAUTION:**
- Do not operate the rear window defroster until the paint is completely dry. It may cause other malfunctions if it is used before paint is dry.



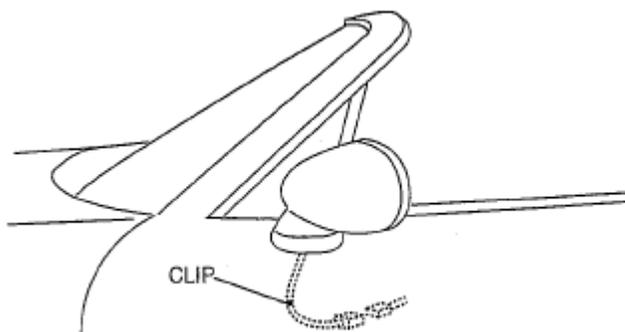
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Fig. 57: Identifying Tape On Rear Window Defroster Filament
Courtesy of MAZDA MOTORS CORP.

5. Dry the repaired part using the following procedure.
 - When the room temperature is 25°C { 77°F } , leave as it is for **24 h.**
 - When a hot air blower is used, dry with the temperature of 150°C { 302°F } for **30 min.**

POWER OUTER MIRROR REMOVAL/INSTALLATION

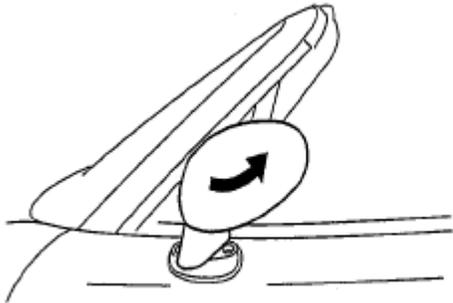
1. Remove the battery cover.
2. Disconnect the negative battery cable.(See **BATTERY REMOVAL/INSTALLATION [LF]** .)
3. Remove the door trim.(See **DOOR TRIM REMOVAL/INSTALLATION** .)
4. Remove the door speaker.(See **DOOR SPEAKER REMOVAL/INSTALLATION** .)
5. Remove the door unit.(See **DOOR UNIT REMOVAL/INSTALLATION** .)
6. Remove clips.



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Fig. 58: Identifying Clip
Courtesy of MAZDA MOTORS CORP.

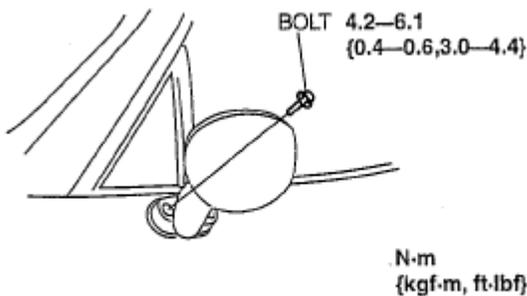
7. Rotate the power outer mirror in the direction shown by the arrow.



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Fig. 59: Rotating Power Outer Mirror
Courtesy of MAZDA MOTORS CORP.

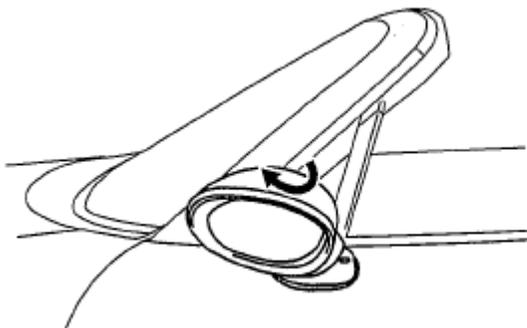
8. Remove the bolt.



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Fig. 60: Identifying Mirror Bolt With Torque Specifications
Courtesy of MAZDA MOTORS CORP.

9. Rotate the power outer mirror in the direction shown by the arrow.



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Fig. 61: Rotating Power Outer Mirror
Courtesy of MAZDA MOTORS CORP.

10. Remove the bolt and the power outer mirror.
11. Install in the reverse order of removal.

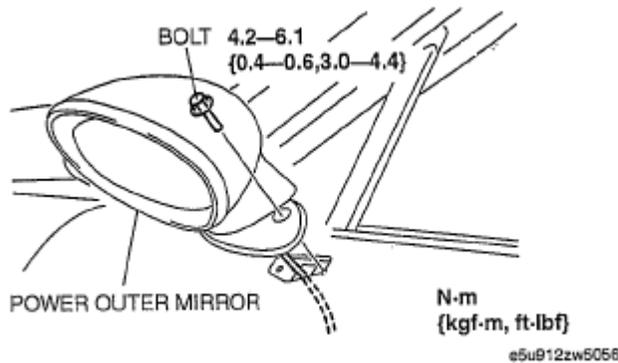


Fig. 62: Identifying Power Outer Mirror And Bolt With Torque Specifications
 Courtesy of MAZDA MOTORS CORP.

POWER OUTER MIRROR DISASSEMBLY/ASSEMBLY

1. Remove the outer mirror glass. (See **OUTER MIRROR GLASS DISASSEMBLY NOTE.**) (See **OUTER MIRROR GLASS ASSEMBLY NOTE.**)
2. Assemble in the reverse order of disassembly.

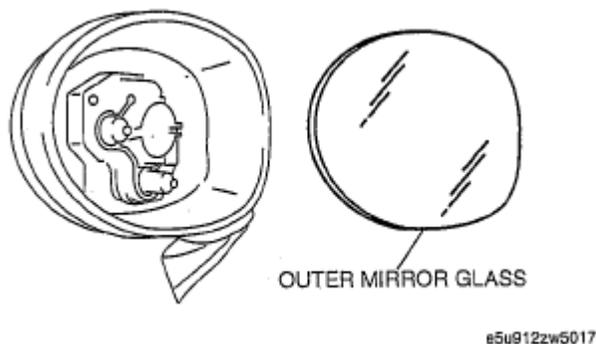


Fig. 63: Identifying Outer Mirror Glass
 Courtesy of MAZDA MOTORS CORP.

OUTER MIRROR GLASS DISASSEMBLY NOTE

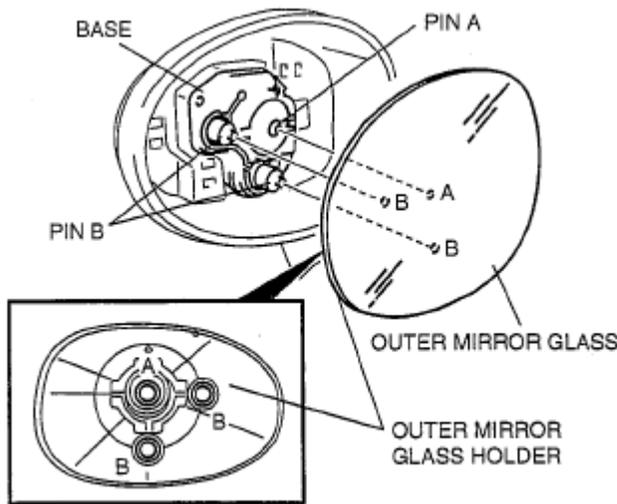
1. Press area A of the outer mirror glass so that area B moves outward.



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Fig. 64: Identifying Area A And B
Courtesy of MAZDA MOTORS CORP.

2. Detach pin A while lifting up the inside of the outer mirror glass holder.
3. Pull out the outer mirror glass holder and detach pins B.
4. Remove the outer mirror glass holder and the outer mirror glass as a single unit.

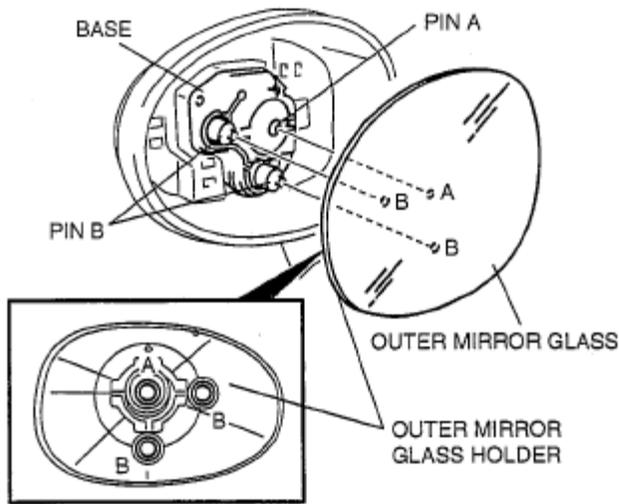


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Fig. 65: Identifying Outer Mirror Glass Holder & Pins
Courtesy of MAZDA MOTORS CORP.

OUTER MIRROR GLASS ASSEMBLY NOTE

1. Press area A of the mirror glass into the base to attach pin A.
2. Press areas B of the outer mirror glass into the base to attach pins B.



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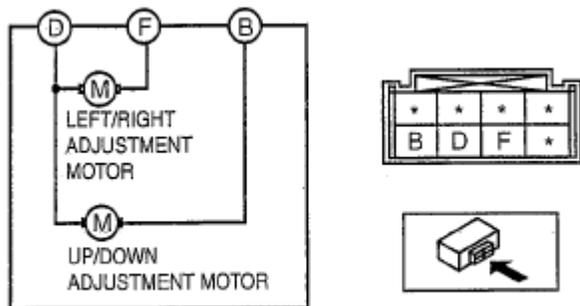
Fig. 66: Identifying Outer Mirror Glass Holder & Pins
 Courtesy of MAZDA MOTORS CORP.

POWER OUTER MIRROR INSPECTION

1. Apply battery positive voltage and connect the ground to the corresponding power outer mirror terminals, and then inspect the operation of the power outer mirror.
 - If not as specified, replace the power outer mirror.

POWER OUTER MIRROR OPERATION REFERENCE

Operation	Terminal	
	B+	GND
Up	B	D
Down	D	B
Left	F	D
Right	D	F



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Fig. 67: Identifying Power Outer Mirror Connector Terminals

Courtesy of MAZDA MOTORS CORP.

POWER OUTER MIRROR SWITCH REMOVAL/INSTALLATION

1. Remove the battery cover.
2. Disconnect the negative battery cable.(See **BATTERY REMOVAL/INSTALLATION [LF]** .)
3. Remove the handle pull.(See **DOOR TRIM DISASSEMBLY/ASSEMBLY** .)
4. Remove the armrest.(See **DOOR TRIM DISASSEMBLY/ASSEMBLY** .)
5. Remove the door trim.(See **DOOR TRIM REMOVAL/INSTALLATION** .)
6. Remove the switch panel from the door trim by depressing the tab.
7. Remove the screws and the power outer mirror switch.
8. Install in the reverse order of removal.

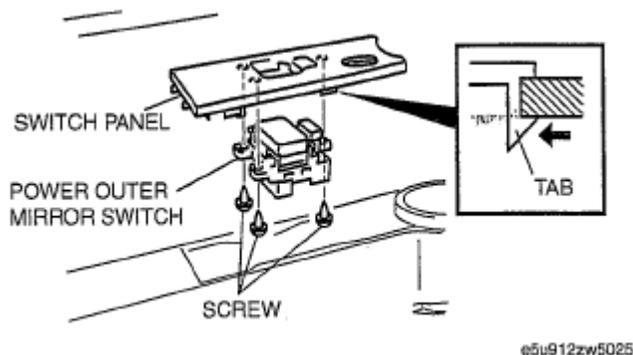


Fig. 68: Power Outer Mirror Switch Remove/Install Components
Courtesy of MAZDA MOTORS CORP.

POWER OUTER MIRROR SWITCH INSPECTION

1. Inspect for continuity between the power outer mirror switch terminals using an ohmmeter.
 - If not as specified, replace the power outer mirror switch.

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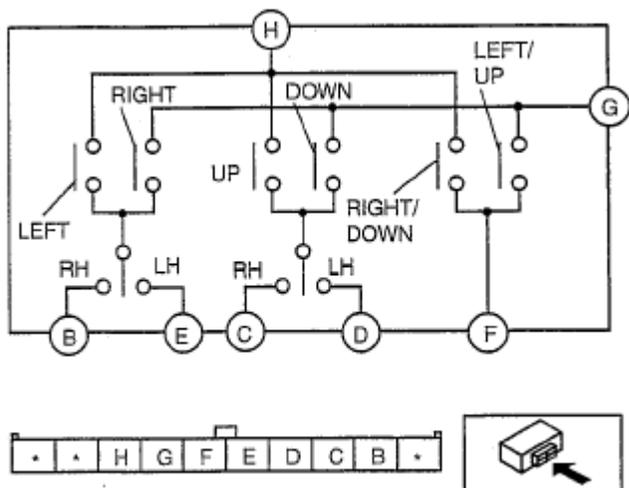
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○—○ : Continuity

Operation		D	C	E	B	H	G	F
LH	Up	○				○		○
	Down	○					○	○
	Left			○		○		○
	Right			○		○		○
RH	Up		○			○		○
	Down		○				○	○
	Left				○	○		○
	Right				○	○		○

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Fig. 69: Power Outer Mirror Switch Continuity Table
Courtesy of MAZDA MOTORS CORP.



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Fig. 70: Power Outer Mirror Switch Circuit Diagram
Courtesy of MAZDA MOTORS CORP.

BASE REMOVAL

1. Remove the rearview mirror.
2. Wind each end of a wire around a bar.

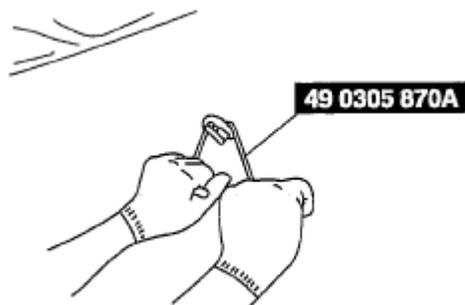
WARNING:

- Using the SST (piano wire) with bare hands can cause injury. Always wear gloves when using the SST (piano wire).

NOTE:

- Use a long sawing action to spread the work over the whole length of

the SST (piano wire) to prevent it from breaking. Do not pull too hard to prevent damage to windshield.



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Fig. 71: Identifying SST
Courtesy of MAZDA MOTORS CORP.

3. Saw through the sealant to remove the base.

BASE INSTALLATION

1. Cut away all of the original sealant using a razor.

WARNING:

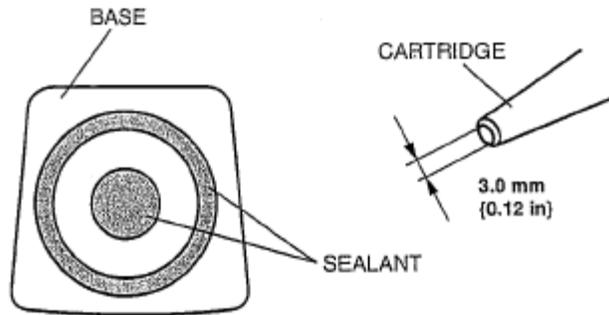
- Using a razor with bare hands can cause injury. Always wear gloves when using a razor.

2. Clean and degrease the ceramic coating on the glass and the base.

CAUTION:

- Keep the area free of dirt and grease, and do not touch the surface. Otherwise, the primer may not properly bond to the surface of the glass.

3. Apply primer to the bonding area of the glass and the base.
4. Use only glass primer on the glass, and body primer on the base. Allow the primer to dry for **approx. 30 min.**
5. Apply **3.0 mm {0.12 in}** layer of sealant to the base.



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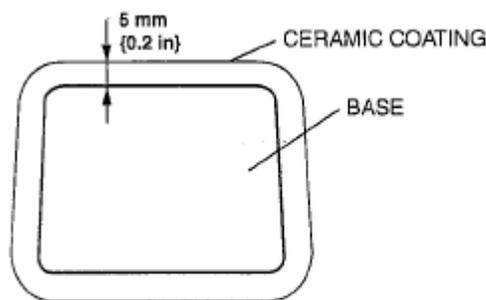
Fig. 72: Identifying Sealant Applying Area With Specification
 Courtesy of MAZDA MOTORS CORP.

6. Center the base in the ceramic coating and press it onto the glass.
7. Use isopropyl alcohol to remove any excess repair sealant.

Hardening time of sealant

SEALANT HARDENING TIME

Temperature	Surface hardening time	Time required until vehicle can be put into service
5 °C {41 °F}	Approx. 1.5 h	Approx. 12 h
20 °C {68 °F}	Approx. 1 h	Approx. 4 h
35 °C {95 °F}	Approx. 10 min.	Approx. 2 h



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Fig. 73: Identifying Ceramic Coating And Base
 Courtesy of MAZDA MOTORS CORP.

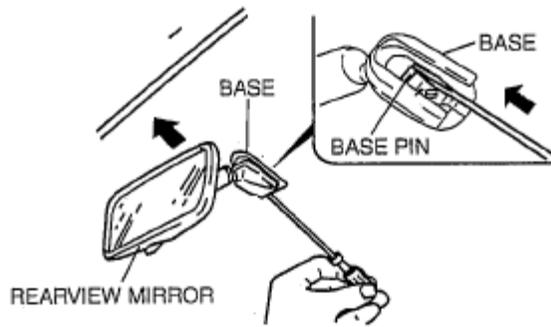
8. Install the rearview mirror.

REARVIEW MIRROR REMOVAL/INSTALLATION

1. Insert a flathead screwdriver between the rearview mirror and base.
2. Press the base pin downward and remove the rearview mirror.

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Fig. 74: Removing/Installing Rearview Mirror
Courtesy of MAZDA MOTORS CORP.