

POWER WINDOWS
Article Text
1993 Mazda 929
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ARTICLE BEGINNING

1993 ACCESSORIES/SAFETY EQUIPMENT
Mazda Power Windows

929

DESCRIPTION & OPERATION

Main switch (master switch) on driver's door controls all windows. Sub-switch on passenger's door and rear doors controls individual window. 929 uses a power cut switch on driver's door to prevent operation of windows. When power cut switch is in ON position, windows can be operated by main switch or sub-switch. When power cut switch is in OFF position:

- * Driver's window can be operated using main switch; no other windows can be operated using main switch or sub-switch.

SYSTEM TESTING

SYMPTOM DIRECTORY TABLE

AA
Symptom Symptom No.

All Windows Inoperative	1
Driver's Window Inoperative, Other Window(s) Okay	2
Passenger's &/Or Rear Windows Inoperative Using Main Switch, Okay Using Sub-Switches	3
One-Touch Function Inoperative	4
With Power Cut Switch Off, Passenger's Window & Rear Door Windows Operate Using Main Switch	5
Passenger's &/Or Rear Windows Inoperative Using Sub-Switches, Okay Using Main Switch	6
With Power Cut Switch Off, Passenger's Window & Rear Door Windows Operate Using Sub-Switch	7
AA	

NOTE: "Main switch/passenger's" refers to passenger's window switch on main switch. "Main switch/left rear" refers to left rear window switch on main switch. "Main switch/right rear" refers to right rear window switch on main switch.

SYMPTOM NO. 1

- 1) Turn ignition on. Check 30-amp power window fuse in fuse block, near left kick panel. If fuse is blown, replace fuse (repair wiring if necessary). If fuse is okay, go to next step.
- 2) Check voltage at Red/Blue wire terminal of main switch connector. If battery voltage is present, go to next step. If battery

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voltage is not present, repair Red/Blue wire between fuse and main switch.

3) Disconnect main switch connector. Check continuity between ground and Black wire terminal of main switch connector. If there is continuity, reconnect main switch connector and go to next step. If there is no continuity, repair Black wire.

4) Check voltage at the following wire terminals of main switch connector. If battery voltage is present at all terminals, go to next step. If battery voltage is not present at all terminals, replace main switch.

- * Red/Black wire (driver's switch in UP position)
- * Green/Black wire (driver's switch in DOWN position)
- * Red/White wire (main switch/passenger's in UP position)
- * Green/Red wire (main switch/passenger's in DOWN position)
- * Red/Yellow wire (main switch/left rear in UP position)
- * Green/Yellow wire (main switch/left rear in DOWN position)
- * Red/Green wire (main switch/right rear in UP position)
- * Light Green/Red wire (main switch/right rear in DOWN position).

5) Check voltage at the following wire terminals of sub-switch connectors. If battery voltage is present at all terminals, go to next step. If battery voltage is not present at all terminals, repair wiring between main switch and sub-switch.

- * Red/White wire (main switch/passenger's in UP position)
- * Green/Red wire (main switch/passenger's in DOWN position)
- * Red/Green wire (main switch/left rear or main switch/right rear in UP position)
- * Light Green/Red wire (main switch/left rear or main switch/right rear in DOWN position).

6) Check voltage at the following wire terminals of sub-switch connectors. If battery voltage is present at all terminals, go to next step. If battery voltage is not present at all terminals, replace sub-switch.

- * Red wire (main switch/passenger, main switch/left rear or main switch/right rear in UP position)
- * Green wire (main switch/passenger, main switch/left rear or main switch/right rear in DOWN position).

7) Check voltage at the following wire terminals of window motor connectors. If battery voltage is present at all terminals, replace window motor. If battery voltage is not present at all terminals, repair wiring between main switch and window motor (driver's window), or between sub-switch and window motor (except driver's window).

- * Red/Black wire (driver's switch in UP position)
- * Green/Black wire (driver's switch in DOWN position)

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- * Red wire (main switch/passenger, main switch/left rear or main switch/right rear in UP position)
- * Green wire (main switch/passenger, main switch/left rear or main switch/right rear in DOWN position).

SYMPTOM NO. 2

1) Turn ignition on. At main switch connector, check voltage at Red/Black wire terminal (driver's switch in UP position), and Green/Black wire terminal (driver's switch in DOWN position). If battery voltage is present at both terminals, go to next step. If battery voltage is not present at both terminals, replace main switch.

2) At driver's window motor connector, check voltage at Red/Black wire terminal (driver's switch in UP position), and Green/Black wire terminal (driver's switch in DOWN position). If battery voltage is present at both terminals, replace window motor. If battery voltage is not present at both terminals, repair wiring between main switch and window motor.

SYMPTOM NO. 3

1) Turn ignition on. Check voltage at the following wire terminals of main switch connector. If battery voltage is present at all terminals, go to next step. If battery voltage is not present at all terminals, replace main switch.

- * Red/White wire (main switch/passenger's in UP position)
- * Green/Red wire (main switch/passenger's in DOWN position)
- * Red/Yellow wire (main switch/left rear in UP position)
- * Green/Yellow wire (main switch/left rear in DOWN position)
- * Red/Green wire (main switch/right rear in UP position)
- * Light Green/Red wire (main switch/right rear in DOWN position).

2) Check voltage at the following terminals of sub-switch connector. If battery voltage is present at all terminals, go to next step. If battery voltage is not present at all terminals, repair wiring between main switch and sub-switch.

- * Red/White wire (main switch/passenger's in UP position)
- * Green/Red wire (main switch/passenger's in DOWN position)
- * Red/Green wire (main switch/left rear or main switch/right rear in UP position)
- * Light Green/Red wire (main switch/left rear or main switch/right rear in DOWN position).

3) Check voltage at the following wire terminals of sub-switch connectors. If battery voltage is present at all terminals, go to next step. If battery voltage is not present at all terminals, replace sub-switch.

- * Red wire (main switch/passenger, main switch/left rear or

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main switch/right rear in UP position)

- * Green wire (main switch/passenger, main switch/left rear or main switch/right rear in DOWN position).

4) Check voltage at terminals of window motor connectors as specified in previous step. If battery voltage is present at all terminals, replace window motor. If battery voltage is not present at all terminals, repair wiring between sub-switch and window motor.

SYMPTOM NO. 4

Replace main switch.

SYMPTOM NO. 5

Replace main switch.

SYMPTOM NO. 6

Turn ignition on. Check voltage at Red/Blue wire terminal of sub-switch connector. If battery voltage is present, replace sub-switch. If battery voltage is not present, repair wiring between fuse and sub-switch.

SYMPTOM NO. 7

Replace main switch.

COMPONENT TESTING

MAIN SWITCH TEST

Check continuity across specified terminals of main switch connector with switch button held in specified position. See appropriate MAIN SWITCH CONTINUITY TEST table. See Fig. 1. Replace main switch if continuity is not as specified.

MAIN SWITCH CONTINUITY TEST

[illegible]

Switch Position (1)	Terminals
1	1-2, 3-4
2	1-3, 2-4
3	1-4, 2-3
4	1-2, 3-4

Driver

UP A & D; B & H

DOWN A & B; D & H

One-Touch DOWN	A & B; D & H
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Off (Neutral)	B, D & H
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Passenger

UP A & L; H & J

DOWN A & J; H & L

Off (Neutral) H, J & L

Right Rear

UP A & E; C & H

DOWN	A & C; E & H
Off (Neutral)	C, E & H
Left Rear	
UP	A & K; H & I
DOWN	A & I; H & K
Off (Neutral)	H, I & K

(1) - Ensure power cut switch is in ON position.

AA

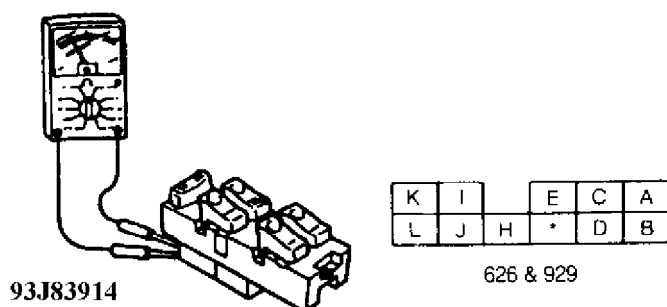


Fig. 1: Main Switch Connector Terminal ID
Courtesy of Mazda Motors Corp.

POWER CUT SWITCH TEST

Check continuity across specified terminals of main switch connector with power cut switch button held in specified position. See POWER CUT SWITCH CONTINUITY TEST table. See Fig. 1. Replace main switch if continuity is not as specified.

POWER CUT SWITCH CONTINUITY TEST TABLE

AA

Application & Switch Position	Terminals
-------------------------------	-----------

ON	B, D, F, G & H
----------	----------------

OFF	(2)
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AA

SUB-SWITCH TEST

Check continuity across specified terminals of sub-switch connector with switch button held in specified position. See SUB-SWITCH CONTINUITY TEST table. See Fig. 2. Replace sub-switch if continuity is not as specified.

SUB-SWITCH CONTINUITY TEST TABLE

AA

Application & Switch Position	Terminals
-------------------------------	-----------

UP	A & E; B & D
----------	--------------

Off (Neutral) A & E; D & F
DOWN B & E; D & F
AA

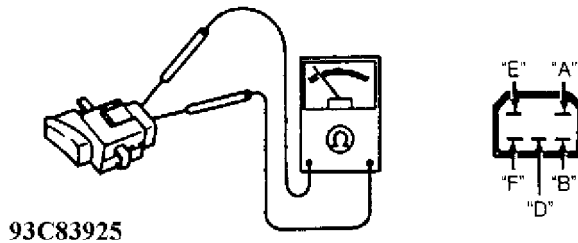


Fig. 2: Sub-Switch Connector Terminal ID
Courtesy of Mazda Motors Corp.

WINDOW MOTOR TEST

Disconnect window motor connector. Apply battery voltage and ground across window motor connector terminals. Reverse polarity to move window in opposite direction. Replace window motor if it does not operate.

REMOVAL & INSTALLATION

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION section before disconnecting battery.

MAIN SWITCH

Removal & Installation

Remove door trim panel. Disconnect main switch electrical connector. Remove screws securing main switch to door trim panel. Remove main switch. To install, reverse removal procedure.

SUB-SWITCH

Removal & Installation

Remove door trim panel. Remove screw(s) securing sub-switch to door. Pull out sub-switch, disconnect electrical connector and remove sub-switch. To install, reverse removal procedure.

WINDOW MOTOR

WARNING: Window regulator is spring-loaded to assist window motor during upward movement. Before separating window motor from regulator, securely position regulator arms in full-up position (if possible). This will relieve spring pressure as much as possible, preventing injury when window motor is

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separated from regulator.

Removal & Installation

Fully open window. Raise window until height of glass (measured at top rear edge) is as specified. See WINDOW HEIGHT SPECIFICATIONS table. Disconnect negative battery cable. Remove door trim panel. Remove window regulator and motor as an assembly. Securely position regulator arms in full-up position (if possible) to relieve spring pressure. Remove window motor from regulator. To install, reverse removal procedure.

WINDOW HEIGHT SPECIFICATIONS TABLE

Application		In. (mm)
Front Door	12.2 (310)
Rear Door	13.8 (350)

WIRING DIAGRAMS

Proceed to chassis WIRING DIAGRAMS article in WIRING DIAGRAMS section.

END OF ARTICLE