2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

#### 2001 ACCESSORIES & EQUIPMENT

**Power Windows - Corvette** 

# DESCRIPTION

Power window system uses a permanent-magnet motor to operate each window. Motor operation is controlled by Driver Door Module (DDM) or Passenger Door Module (PDM). Window is raised or lowered depending on polarity of current applied to window motor. When right window is raised or lowered from master switch assembly, DDM communicates with PDM over bus wiring.

# **OPERATION**

When ignition switch is in RUN position, power for window system is supplied to left (DDM) and right (PDM) door control modules through fuses No. 30, 31, 33 and 34. Master switch assembly controls both left and right window functions. Express down feature is both a driver and passenger-side feature. Express travel can be stopped at any position by momentarily pressing either switch to UP or DOWN position. Window switches provide a ground signal to control module when operated.

# **COMPONENT LOCATIONS**

#### **COMPONENT LOCATIONS**

Component	Location
Body Control Module	Right Footwell, Mounted To Floor Board Behind
	Carpet
Data Link Connector	Left Side Of Instrument Panel, Below Steering
	Column
Door Control Modules	Behind Center Of Respective Door Panel
Instrument Panel Electrical Center	Right Footwell, Mounted To Floor Board Behind
	Carpet
Underhood Electrical Center	Right Rear Corner Of Engine Compartment,
	Between Battery & Coolant Reservoir

# PROGRAMMING

DOOR CONTROL MODULE

NOTE: Only replacement door control modules on non-convertible models

2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

# must be programmed. If door module is not correctly configured with correct option content, module will set default for some systems which could cause system malfunctions.

Using scan tool, select Driver Door Module (DDM) if left module was replaced or Passenger Door Module (PDM) if right module was replaced. Select DDM/PDM reprogram. Follow scan tool prompts to reprogram module.

# **TROUBLE SHOOTING**

#### PRELIMINARY INSPECTION

- Using scan tool, attempt to establish communication with door control modules. If communication is not successful, repair serial data link fault first. See appropriate wiring diagram in DATA LINK CONNECTORS article in WIRING DIAGRAMS. If communication with modules is successful, retrieve all Diagnostic Trouble Codes (DTC). Perform necessary repairs if DTCs exist. See <u>DIAGNOSTIC TROUBLE CODE</u> <u>DEFINITIONS</u> table under SELF-DIAGNOSTIC SYSTEM.
- 2. If both windows are inoperative from master switch assembly, check fuses No. 30, 31, 33 and 34 in instrument panel electrical center. Replace as necessary.
- 3. If windows move slowly, ensure battery is fully charged, and terminal contact and ground connections are okay. Ground points are located behind left and right kick panels. Ensure aftermarket equipment is properly installed. If no problem was found, repair by symptom. See **<u>SYMPTOM INDEX</u>** table under SYSTEM TESTS.

## SYSTEM CHECK

# NOTE: See appropriate system test for abnormal symptom. Ensure cause of DTCs is cleared before trouble shooting other problems.

- 1. With ignition switch in RUN position, operate each window up and down from master switch assembly. Each window should operate quietly and smoothly, with no sticking.
- 2. Operate each window from individual window switch. Each window should operate quietly and smoothly, with no sticking. Each window should travel down fully without switch being held (express down feature). If problem exists with power window system, go to **PRELIMINARY INSPECTION**.

# SELF-DIAGNOSTIC SYSTEM

#### DOOR SYSTEMS DIAGNOSTIC SYSTEM CHECK

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

#### Using On-Board Diagnostics

If any warning messages exist, depress RESET button. Depress and hold OPTIONS button and press FUEL button 4 times within 5 seconds of depressing OPTIONS button. Module number and module name will appear on Driver's Information Center (DIC) display. Module number for Driver Door Module (DDM) is A0, module number for Passenger Door Module (PDM) is A1. After module is displayed, individual DTCs will be displayed.

To begin manual control of DTC viewing, depress FUEL, TRIP, GAUGES, OPTIONS or RESET button. Depress TRIP button to view previous module. Depress OPTIONS button to view next module. Depress FUEL button to view previous DTC in selected module. Depress GAUGES button to view next DTC in selected module. After retrieving and recording current and history DTCs, proceed to appropriate diagnostic test. See **<u>DIAGNOSTIC TROUBLE</u>** <u>**CODE DEFINITIONS**</u> table. Depress E/M button to exit self-diagnostics.

#### Using Scan Tool

- Connect scan tool to Data Link Connector (DLC) located under steering column. If scan tool powers up, go to next step. If scan tool does not power up, go to <u>TEST A: SCAN</u> <u>TOOL DOES NOT POWER UP</u> under SYSTEM TESTS in BODY CONTROL MODULES - CORVETTE article.
- Turn ignition on. Attempt to establish communication with the DDM and PDM. If scan tool communicates with both modules, go to next step. If scan tool does not communicate with both door control modules, go to <u>TEST B: SCAN TOOL DOES NOT</u> <u>COMMUNICATE WITH CLASS 2 DEVICE</u> under SYSTEM TESTS in BODY CONTROL MODULES - CORVETTE article.
- 3. Using scan tool, select DISPLAY DTCs function for DDM or PDM. If scan tool displays any DTCs, go to next step. If scan tool does not display and DTCs, diagnose by symptom. See <u>SYMPTOM INDEX</u> table under SYSTEM TESTS.
- 4. Retrieve DTCs and perform appropriate test. See **<u>DIAGNOSTIC TROUBLE CODE</u>** <u>**DEFINITIONS**</u> table.

#### DIAGNOSTIC TROUBLE CODE DEFINITIONS

#### DIAGNOSTIC TROUBLE CODE DEFINITIONS

DTC	Description
B2202-B2208	Window Up/Down Switch Fault
B2274-B2275	Window Motor Fault
B2282-B2285	Battery Fault

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

# UXXXX

(1)

(1) For any DTC beginning with the letter "U", diagnose communication problem with class 2 device. See <u>TEST B: SCAN TOOL DOES NOT COMMUNICATE WITH</u> <u>CLASS 2 DEVICE</u> under SYSTEM TESTS in BODY CONTROL MODULES -CORVETTE article.

#### CLEARING DIAGNOSTIC TROUBLE CODES

Diagnostic Trouble Codes (DTC) can be cleared by using on-board diagnostics clearing feature, using a scan tool, or will automatically clear if malfunction has not occurred within 50 ignition cycles.

#### Using On-Board Diagnostics

Use manual control functions to select and view DTC. See **<u>DOOR SYSTEMS DIAGNOSTIC</u> <u>SYSTEM CHECK</u>**. Depress RESET button for 2 seconds to clear selected DTC from selected module.

#### Using Scan Tool

Select CLEAR DTCs function on scan tool. Clear current and history DTCs. Operate vehicle and recheck for DTCs.

# **DIAGNOSTIC TESTS**

## CAUTION: To prevent damage to terminals, connector Test Adaptor Kit (J-35616-A) must be used whenever a diagnostic procedure requires checking or probing terminals. To locate and identify terminals, see <u>WIRING DIAGRAMS</u>.

#### DTC B2202-B2208: WINDOW UP/DOWN SWITCH FAULT

#### **Circuit Description**

Driver or passenger door switch signal circuits provide input to Driver Door Module (DDM) or Passenger Door Module (PDM). These inputs allow door module to detect a window up or down request. Door modules provide both power and ground to window switches. When a window switch is pressed UP or DOWN, ground is supplied through window switch to signal circuit, which is pulled low. When door module detects low voltage on signal circuit, it will command window up or down. When switch is released, command to window will stop (window express down feature not activated). Door modules monitor signal circuits to determine how long ground

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

had been applied. If ground is applied for longer than 20 seconds, a malfunction is present and a DTC will set.

DTCs B2202-B2208 will set if DDM or PDM detects a low voltage level (short to ground) on a window switch signal circuit. This condition must exist for more than 20 seconds. A DTC will store as a history code. No driver warning will be displayed.

Under all fault conditions, DTCs will clear automatically when DDM or PDM no longer detects a low voltage level (short to ground) at left window up switch input circuit for longer than 20 seconds. Current and history DTCs can be cleared using scan tool or on-board diagnostics.

#### **Diagnostic Procedure**

- 1. Perform door systems diagnostic system check. See **DOOR SYSTEMS DIAGNOSTIC** <u>SYSTEM CHECK</u> under SELF-DIAGNOSTIC SYSTEM. After system check is performed, go to next step.
- 2. Turn ignition on, engine off. Using scan tool, select appropriate window switch parameter in appropriate door control module (DDM or PDM) inputs data list. If scan tool displays INACTIVE, go to next step. If scan tool does not display INACTIVE, go to step 4.
- 3. Activate appropriate window switch. Using scan tool, observe appropriate window switch parameter in appropriate door control module inputs data list. If window switch parameter changes state, problem is intermittent. Check for loose wiring or connections. If window switch parameter does not change state, go to next step.
- 4. Turn ignition off. Disconnect appropriate door switch connector. See <u>Fig. 1</u> and <u>Fig. 2</u>. Turn ignition on, engine off. Using scan tool, observe appropriate window switch parameter in appropriate door control module inputs data list. If scan tool displays INACTIVE, go to step 7. If scan tool does not display INACTIVE, go to next step.
- 5. Check for short to ground in Brown or Light Blue wire between switch assembly and DDM or PDM. Repair wiring as necessary, then go to step 10. If wiring is okay, go to next step.
- 6. Check for poor connection at appropriate door module. See <u>Fig. 1</u> and <u>Fig. 3</u>. Repair connection as necessary. If connection was repaired, go to step 10. If connection is okay, go to step 8.
- Check for poor connection at appropriate harness connector for each door switch. See <u>Fig.</u> <u>1</u> and <u>Fig. 2</u>. Repair connection as necessary, then go to step 10. If connection is okay, go to step 9.
- 8. Replace DDM or PDM as necessary. See **DOOR CONTROL MODULE** under REMOVAL & INSTALLATION. Using scan tool, program module. See **DOOR CONTROL MODULE** under PROGRAMMING. After repair, go to step 10.
- 9. Replace appropriate door switch. See **WINDOW SWITCH** under REMOVAL &

2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

INSTALLATION. After repair, go to next step.

 Turn ignition off. Reconnect or install any connectors or components that were disconnected or removed. Turn ignition on. Clear any DTCs. See <u>CLEARING DIAGNOSTIC</u> <u>TROUBLE CODES</u> under SELF-DIAGNOSTIC SYSTEM. Recheck system operation.



# Fig. 1: Identifying Door Module Connectors C1 & C4 & Left Window Switch Connector <u>Terminals</u>

**Courtesy of GENERAL MOTORS CORP.** 

2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette



G98C12445

**Fig. 2: Identifying Right Window Switch Connector Terminals Courtesy of GENERAL MOTORS CORP.** 

2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette



G98B12444

## **Fig. 3: Identifying Door Module Connector C2 & C3 Terminals** Courtesy of GENERAL MOTORS CORP.

**Diagnostic Aids** 

Following conditions may cause an intermittent malfunction:

- Intermittent short to ground in window switch signal circuit (Brown and Dark Blue wires).
- Window switch circuit is shorted to ground internally or is sticking.
- Window switch was depressed for longer than 20 seconds.

#### DTC B2274-B2275: WINDOW MOTOR FAULT

**Circuit Description** 

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

Driver Door Module (DDM) and Passenger Door Module (PDM) provide motor control output functions to respective power windows. This output control allows door module to command window up or down. Window switch provides an input to DDM or PDM when window switch is depressed to UP or DOWN position. When DDM or PCM detects an active window command from a window switch, DDM or PDM will command window motor in appropriate direction. DDM or PDM applies ground and voltage to appropriate circuits (Dark Blue wire or Brown wire) depending on desired direction. DDM or PDM monitors amount of current draw on window motor circuit. If current draw is not within acceptable range, a malfunction is present and DTC will set.

DTCs B2274-B2275 will set if DDM or PDM detects a short to voltage condition in window motor control circuit greater than 45 amps. This condition must exist for more than one second. DTCs will store as a history code. No driver warning will be displayed.

DTCs will clear automatically when DDM or PDM no longer detect a short to voltage in window motor control circuit for longer than one second. Current and history DTCs can be cleared using scan tool or on-board diagnostics.

#### **Diagnostic Procedure**

- 1. Perform door systems diagnostic system check. See **DOOR SYSTEMS DIAGNOSTIC** <u>SYSTEM CHECK</u> under SELF-DIAGNOSTIC SYSTEM. After system check is performed, go to next step.
- 2. Turn ignition off. Disconnect appropriate window motor connector. Turn ignition on, engine off. Using DVOM, check voltage between both window motor harness connector terminals No. 1 (Dark Blue wire) and No. 2 (Brown wire). Operate window up and down. If 10-14 volts exist in both positions, go to step 4. If 10-14 volts does not exist in both positions, go to next step.
- 3. Check for open, short to ground or voltage in Dark Blue wire or Brown wire between window motor and DDM or PDM. Repair as necessary, then go to step 7. If no problem was found, go to step 5.
- 4. Check window for sticking or binding. Repair as necessary, then go to step 7. If no sticking or binding was present, go to step 6.
- 5. Replace DDM or PDM. See **DOOR CONTROL MODULE** under REMOVAL & INSTALLATION. Using scan tool, program module. See **DOOR CONTROL MODULE** under PROGRAMMING.
- 6. Replace appropriate window motor. See <u>WINDOW MOTOR & REGULATOR</u> under REMOVAL & INSTALLATION. After repair, go to next step.
- 7. Turn ignition off. Reconnect or install any connectors or components that were disconnected

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

# or removed. Turn ignition on. Clear any DTCs. See <u>CLEARING DIAGNOSTIC</u> <u>TROUBLE CODES</u> under SELF-DIAGNOSTIC SYSTEM. Recheck system operation.

#### **Diagnostic Aids**

Following conditions may cause an intermittent malfunction:

- Intermittent short to ground in window motor circuits (Dark Blue wire or Brown wire).
- Window motor is shorted to ground internally.
- Window motor circuit is shorted to voltage, allowing operation in one direction only in certain directions depending on circuit affected.

#### DTC B2282-B2285: BATTERY FAULT

#### **Circuit Description**

Each door module (DDM or PDM) has 2 main power feeds (high and low), and one main ground. Low power feed (battery No. 1) is used to provide power for module logic and internal driver operation. High power feed (battery No. 2) is used to provide power for systems that draw greater amounts of current (motors, light, etc.). For most functions, DDM and PDM will operate properly when vehicle system voltage is 9.0-16.0 volts. DDM and PDM also monitor voltage level at battery No. 1 and battery No. 2 circuits and can determine if voltage level received is out of range in either circuit, a malfunction is present and DTC will set.

DTCs will set if DDM or PDM detects battery No. 1 voltage range less than 8.5 volts or greater than 16.3 volts. This condition must exist for 2 seconds. DTCs will store as a history code in DDM or PDM memory. No driver warning will be displayed.

Under all fault conditions, DTCs will clear automatically when DDM or PDM detects battery No. 1 voltage range 8.5-16.3 volts for longer than 2 seconds. Current and history DTCs can be cleared using scan tool or on-board diagnostics.

#### **Diagnostic Procedure**

- 1. Perform door systems diagnostic system check. See **<u>DOOR SYSTEMS DIAGNOSTIC</u>** <u>SYSTEM CHECK</u>. After system check is performed, go to next step.
- 2. Verify vehicle starting/charging system is functioning properly. See appropriate article in STARTING & CHARGING SYSTEMS. Repair as necessary, then go to step 9. If starting and charging systems are functioning properly, go to next step.
- 3. Install scan tool to Data Link Connector (DLC). Turn ignition on. Using scan tool, select DDM or PDM data display and monitor battery No. 1 and battery No. 2 data. If scan tool

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

display shows 8.5-16.3 volts, go to next step. If scan tool display does not show 8.5-16.3 volts, go to step 5 .

- 4. Using scan tool, select DDM/PDM DTC display. Check for DTC B2272, B2273, B2274, B2275, B2276, B2277, B2278 and B2279. For DTCs B2272 and B2273, see POWER MIRRORS CORVETTE article. For DTCs B2276, B2277, B2278 or B2279, see POWER DOOR LOCKS CORVETTE article. For DTCs B2274 and B2275, see <u>DTC B2274-B2275: WINDOW MOTOR FAULT</u>. If no DTCs are stored in history, problem is intermittent. Check wiring and connectors for poor terminal contact.
- Turn ignition off. Disconnect DDM/PDM Red 26-pin connector C1. See <u>Fig. 1</u>. Turn ignition on, engine off. Check voltage between DDM/PDM harness connector C1 terminal No. 1 (Orange wire) and ground. If 8.5-16.3 volts exists, go to next step. If 8.5-16.3 volts do not exist, go to step 7.
- 6. Check for poor connection at harness connectors between appropriate door module and instrument cluster. After repair, go to step 9 . If system was okay, go to step 8 .
- 7. Repair open or short circuit to ground in appropriate battery voltage circuit (Orange wire). After repair, go to step 9.
- 8. Replace DDM or PDM. See **<u>DOOR CONTROL MODULE</u>** under REMOVAL & INSTALLATION. Using scan tool, program module. See **<u>DOOR CONTROL MODULE</u>** under PROGRAMMING. After repair, go to next step.
- Turn ignition off. Reconnect or install any connectors or components that were disconnected or removed. Turn ignition on. Clear any DTCs. See <u>CLEARING DIAGNOSTIC</u> <u>TROUBLE CODES</u> under SELF-DIAGNOSTIC SYSTEM. Recheck system operation.

#### **Diagnostic Aids**

Following conditions may cause an intermittent malfunction:

- Intermittent open or short to ground in battery No. 1 circuit (Orange wire).
- Battery voltage is not 8.5-16.3 volts.
- Charging system malfunction.

Using scan tool, select DDM data display and monitor battery No. 1 voltage while test driving vehicle and operating different devices (windows, door locks, etc.). This can determine if battery No. 1 voltage is affected by these devices and can help duplicate malfunction.

# SYSTEM TESTS

CAUTION: To prevent damage to terminals, connector Test Adapter Kit

# (J-35616-A) must be used whenever a diagnostic procedure requires checking or probing terminals. To locate and identify terminals, see <u>WIRING DIAGRAMS</u>.

#### SYMPTOM INDEX

Symptom	Perform Test
Left Window Inoperative	<u>A</u>
Right Window Inoperative	<u>B</u>

#### TEST A: LEFT WINDOW INOPERATIVE

- 1. Perform door systems diagnostic system check. See **DOOR SYSTEMS DIAGNOSTIC** <u>SYSTEM CHECK</u> under SELF-DIAGNOSTIC SYSTEM. After system check is performed, go to next step.
- 2. Verify left power window inoperative fault is present. If left power window operates correctly, problem is intermittent. Check connectors for poor terminal contact. If left power window does not operate correctly, go to next step.
- 3. If power mirrors and driver's door lock are inoperative, go to step 6. If power mirrors and driver's door lock are not inoperative, go to next step.
- 4. Install scan tool to Data Link Connector (DLC). Turn ignition on, engine off. Observe DRIVER WINDOW DOWN SWITCH and DRIVER WINDOW UP SWITCH parameters in LEFT DOOR CONTROL MODULE INPUTS data list. Operate driver window switch up and down. If scan tool displays ACTIVE for DRIVER WINDOW DOWN SWITCH and DRIVER WINDOW UP SWITCH parameters, go to next step. If scan tool does not display ACTIVE for DRIVER WINDOW UP SWITCH and DRIVER WINDOW UP SWITCH parameters, go to step <u>7</u>.
- 5. Turn ignition off. Disconnect left window motor connector. Turn ignition on, engine off. Connect test light between left window motor connector terminals No. 1 (Dark Blue wire) and No. 2 (Brown wire). Using scan tool, command left window up and down. If test light illuminates with each command, go to step 9. If test light does not illuminate with each command, go to step 8.
- 6. Check driver's door switch ground circuit (Black wire) for an open circuit. Repair wiring as necessary. If wiring is repaired, go to step 15. If wiring is okay, go to step 10.
- 7. Check power window master switch left window signal circuits (Gray and Brown wires) for an open circuit. If an open circuit was found and corrected, go to step 15. If an open circuit was not found, go to step 10.
- 8. Check power window motor left control circuits (Dark Blue and Brown wires) for an open circuit. If an open circuit was found and corrected, go to step 15. If an open circuit was not

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

found, go to step 11.

- 9. Check for poor connection at driver window motor. If poor connection was found and corrected, go to step 15. If poor connection was not found, go to step 12.
- 10. Check for poor connection at driver door switch. If poor connection was found and corrected, go to step 15. If poor connection was not found, go to step 13.
- 11. Check for poor connection at Driver Door Module (DDM). If poor connection was found and corrected, go to step 15. If poor connection was not found, go to step 14.
- 12. Replace driver window motor. See <u>WINDOW MOTOR & REGULATOR</u> under REMOVAL & INSTALLATION. After motor replacement, go to step 15.
- 13. Replace driver door switch. See <u>WINDOW SWITCH</u> under REMOVAL & INSTALLATION. After door switch replacement, go to step 15.
- 14. Replace DDM. See **DOOR CONTROL MODULE** under REMOVAL & INSTALLATION. Using scan tool, program module. See **DOOR CONTROL MODULE** under PROGRAMMING. After repair, go to next step.
- 15. Operate system and verify repair. If problem is still present, go to step 2.

## TEST B: RIGHT WINDOW INOPERATIVE

- 1. Perform door systems diagnostic system check. See **DOOR SYSTEMS DIAGNOSTIC** <u>SYSTEM CHECK</u> under SELF-DIAGNOSTIC SYSTEM. After system check is performed, go to next step.
- 2. Verify right power window inoperative fault is present. If right power window operates correctly, problem is intermittent. Check connectors for poor terminal contact. If right power window does not operate correctly, go to next step.
- 3. If driver's window, driver's door lock and power mirrors are inoperative, go to step 8. If driver's window, driver's door lock and power mirrors are not inoperative, go to next step.
- 4. If passenger door lock is inoperative, go to step 9. If passenger door lock is operative, go to next step.
- 5. Turn ignition off. Install scan tool to Data Link Connector (DLC) located under left side of steering column. Observe PSGR WINDOW DOWN and PSGR WINDOW UP switch parameters in Passenger Door Module (PDM) inputs data list. Operate driver door switch passenger window switch up and down. If scan tool displays ACTIVE for PSGR WINDOW DOWN SWITCH and PSGR WINDOW UP SWITCH parameters, go to next step. If scan tool does not display ACTIVE for PSGR WINDOW DOWN SWITCH and PSGR WINDOW UP SWITCH parameters, go to step 10.
- 6. Observe PSGR WINDOW DOWN SWITCH and PSGR WINDOW UP SWITCH parameters in RIGHT DOOR CONTROL MODULE INPUTS data list. Operate passenger

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

door window switch up and down. If scan tool displays ACTIVE for PSGR WINDOW DOWN SWITCH and PSGR WINDOW UP SWITCH parameters, go to next step. If scan tool does not display ACTIVE for PSGR WINDOW DOWN SWITCH and PSGR WINDOW UP SWITCH parameters, go to step 11.

- 7. Turn ignition off. Disconnect passenger window motor connector. Turn ignition on, engine off. Connect test light between power window motor up circuit (Dark Blue wire) and down circuit (Brown wire). Operate passenger window switch up and down. If test light comes on in both directions, go to step 13. If test light does not come on in both directions, go to step 12.
- 8. Check driver door switch ground circuit (Black wire) for an open circuit. If an open circuit was found and corrected, go to step 21. If circuit is okay, go to step 14.
- 9. Check passenger door switch ground circuit (Black wire) for an open circuit. If an open circuit was found and corrected, go to step21. If circuit is okay, go to step 15.
- 10. Check driver door switch power window master switch right front signal circuits (Tan and Light Blue wires) for an open circuit. If an open circuit was found and corrected, go to step 21. If circuit is okay, go to step 14.
- 11. Check passenger window switch right front signal circuits (Orange/Black and Red/Black wires) for an open circuit. If an open circuit was found and corrected, go to step 21. If an open circuit was not found, go to step 15.
- 12. Check passenger window motor control circuits (Brown and Dark Blue wires) for an open circuit. If an open circuit was found and corrected, go to step 21. If an open circuit was not found, go to step 16.
- 13. Check for poor connection at power window motor connector. If poor connection was found and corrected, go to step 21. If poor connection was not found, go to step 17.
- 14. Check for poor connection at driver door switch connector. If poor connection was found and corrected, go to step 21. If poor connection was not found, go to step 18.
- 15. Check for poor connection at passenger door switch connector. If poor connection was found and corrected, go to step 21. If poor connection was not found, go to step 19.
- 16. Check for poor connection at Passenger Door Module (PDM). If poor connection was found and corrected, go to step 21 . If poor connection was not found, go to step 20 .
- 17. Replace passenger window motor. See <u>WINDOW MOTOR & REGULATOR</u> under REMOVAL & INSTALLATION. After replacement, go to step 21.
- 18. Replace driver door switch. See <u>WINDOW SWITCH</u> under REMOVAL & INSTALLATION. After replacement, go to step 21.
- 19. Replace passenger door switch. See <u>WINDOW SWITCH</u> under REMOVAL & INSTALLATION. After replacement, go to step 21.
- 20. Replace PDM. See DOOR CONTROL MODULE under REMOVAL &

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

INSTALLATION. Using scan tool, program module. See **<u>DOOR CONTROL MODULE</u>** under PROGRAMMING. After replacement, go to next step.

21. Operate system to verify repair. If problem is still present, go to step 2.

# **REMOVAL & INSTALLATION**

#### DOOR CONTROL MODULE

#### **Removal & Installation**

- 1. Remove appropriate door panel to gain access to door control module. See **DOOR <u>PANEL</u>**.
- Remove Driver Door Module (DDM) or Passenger Door Module (PDM) mounting screws. See <u>Fig. 4</u>. Disconnect module electrical connectors and remove module from door. To install, reverse removal procedure. Tighten module mounting screws to 27 INCH lbs. (3 N.m).

#### 2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette



G00011682

#### **Fig. 4: Removing Door Control Module** Courtesy of GENERAL MOTORS CORP.

#### **DOOR PANEL**

# CAUTION: To reduce possibility of damage, leave switches in panel until after panel is removed from door.

#### **Removal & Installation**

1. Lower appropriate door window. Pull inside door handle open to access openings to bezel locking tabs. Insert a flat bladed screwdriver in lower opening and tip screwdriver up while pulling on bezel, releasing lower locking tab. Repeat for top of bezel. Grasp bezel firmly and pull to release rear locking tabs and remove bezel.

#### CAUTION: Lower door panel retainers are a 2-piece unit. Male

2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

# fastener is attached to door panel and female retainer is attached to door. To avoid breaking door panel fasteners, pry between male fastener and female retainer.

2. Remove pull handle plug for access to 2 door panel screws. Remove 2 screws from behind pull handle plug. Pry lower door panel fasteners loose from door. For better sight access to fasteners, start by first prying out fastener at rear of trim panel (about 2 inches above trim panel seam). Lift door panel up and off upper retainers. Disconnect electrical connectors from door panel. To install, reverse removal procedure.

#### WINDOW MOTOR & REGULATOR

# **NOTE:** Window regulator and motor are serviced as an assembly.

# WARNING: Disconnect power window switch when working inside door. Express down feature will cause window to drop rapidly, which could cause injury.

#### **Removal & Installation**

- 1. Remove door trim panel. See <u>DOOR PANEL</u>. Remove power window switch. See <u>WINDOW SWITCH</u>.
- 2. Remove water shield. Remove speaker from door. Remove plugs from window clamp access holes. Reinstall window switch to adjust window height for access to window clamp nuts. Remove window clamp nuts and window from door.
- 3. Disconnect window motor electrical connector. Remove access plug from under front of door. Place marks on regulator to aid in installation adjustment. Remove nuts from top and bottom of each regulator channel.
- 4. Remove regulator motor mounting nuts. Remove regulator assembly through door inner opening. To install, adjust regulator jack screws to same position as old regulator. Install nuts to regulator channel studs in following order, upper front, lower front, upper rear then lower rear. Tighten nuts to 89 INCH lbs. (10 N.m). To complete installation, reverse removal procedure.

#### WINDOW SWITCH

# NOTE: Driver's side power mirror switches, power door lock switches and power window switches are replaced as an assembly.

#### Removal & Installation

2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

On passenger side, pry up front edge of switch assembly and slide forward. Disconnect electrical connector. On driver side, pry up rear edge of switch assembly and slide rearward. Disconnect electrical connector. To install, reverse removal procedure.

# WIRING DIAGRAMS

2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

2001 ACCESSORIES & EQUIPMENT Power Windows - Corvette

# Fig. 5: Power Window System Wiring Diagram (Corvette)