

Power Folding Top Inoperative

Diagnostic Instructions

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
B+ - Folding Top Control Module	1	1	--	--
B+ - Folding Top Control Switch	1	2	--	--
Folding Top Control Switch Close Signal	1	2	B3602	--
Folding Top Control Switch Open Signal	1	2	B3602	--
Pump Direction A Control	B1011	2	--	--
Pump Direction B Control	B1011	2	--	--
Folding Top Motor Valve 2 Control	2, 3, 4	2, 3, 4	--	--
Ground - Folding Top Motor Valve 2	--	2, 3, 4	--	--
Ground - Folding Top Control Module	--	1	--	--
1. No communication with the FTC module. 2. Power folding top is inoperative 3. From the top closed position, the 5 bow will not move. 4. From the top open position, the folding top cover will not open.				

Circuit/System Description

The folding top control switch is a rocker type switch that controls open and close functions of the power folding top. Battery positive voltage is supplied at all times to the switch from the REAR FOG/ALDL TOP SW fuse located in the body control module (BCM) fuse block. When the folding top switches are pressed, they send a 12 volt signal through the switch signal circuit to the folding top control (FTC) module indicating the top open or top close request. The FTC module then commands the folding top to move in response to the switch signal.

The power folding top system uses seven different position or limit switches that provide input information to the FTC module. The FTC module uses this input information to determine the state and position of the folding top components. Then based on this input, the module then applies battery voltage to the appropriate control circuits to the folding top pump motor and the appropriate valves in order to control the hydraulic system used to operate the folding top.

Diagnostic Aids

- Complete the check list, prior to performing the diagnosis:
 - When the folding top control switch is pressed, check for driver information center (DIC) warning messages.
 - Windows are normalized. Refer to [Power Window Reinitialization](#).
 - Luggage barrier is installed and secured, closing the luggage barrier switch.
 - Vehicle is in PARK or the park brake is applied with manual transmission.
 - Press the ignition to ACCY or RUN, with the engine OFF.

- Hydraulic fluid bypass valve in the operating position, turned clockwise, located above the pump motor.
- Pump operating temperature is between 18°C (0°F) and 95°C (199°F).
- Whenever the open/close control switch is released or the top becomes inoperative in a suspended state, pressure will be maintained in the hydraulic system to avoid drifting and damage of components. After 4 minutes, the FTC module will gradually release the hydraulic pressure allowing the top to gradually settle to a resting position.
- When using the scan tool, the folding top cover is referenced as the tonneau.
- If a repair is made to a signal circuit for a short to ground, test the component of that circuit for proper operation.
- Using the scan tool to access the History parameters for the folding top control (FTC) module, will display the last status of the items listed.

Circuit/System Verification

1. Ignition ON, verify the folding top cover pull down actuator is not continuously moving up and down.
⇒If the pull down actuator continuously moves up and down, refer to [Folding Top Stowage Compartment Lid Release Inoperative](#).
2. Unlatch the header latch and verify the scan tool Header Latch Switch parameter is Unlatched.
⇒If not the specified value, refer to the Header Latch Switch Test.
3. Ignition ON, observe the driver information center (DIC) while pressing the appropriate folding top open or close switch. No warning messages should be displayed as a result of top operation.
⇒If warning messages are displayed, refer to [DIC Warning Messages - Roof](#).
4. Attempt to open and close the folding top in either direction.
⇒If the top attempts to open, refer to [Power Folding Top Does Not Open](#).
⇒If the top attempts to close, refer to [Power Folding Top Does Not Close](#).
5. Verify the scan tool Driver Door Module Window Normalization parameter is Yes.
⇒If not the specified value, refer to [Power Window Reinitialization](#).
6. Verify the scan tool Passenger Door Module Window Normalization parameter is Yes.
⇒If not the specified value, refer to [Power Window Reinitialization](#).
7. While pressing either the open or close top control switch, verify the scan tool Top Control Switch parameter reading toggles between Open and Close.
⇒If not the specified value, refer to the Folding Top Control Switch Test.
8. If the top is in the open position, the folding top cover should unlatch when the top close control switch is pressed.
⇒If the folding top cover did not unlatch, refer to [Folding Top Stowage Compartment Lid Release Inoperative](#).
9. If all tests pass, refer to the Folding Top Inoperative Test.

Circuit/System Testing

Header Latch Switch Test

1. Ignition OFF, disconnect the harness connector at the header latch switch.
2. Ignition ON, verify that a test lamp illuminates between the ignition circuit terminal B and ground.
⇒If the test lamp does not illuminate, test the ignition circuit for an open/high resistance.
3. Verify the scan tool Header Latch Switch parameter is Unlatched.
⇒If not the specified value, test the signal circuit terminal A for a short to voltage. If the circuit tests normal, replace the BCM.
4. Install a 3A fused jumper wire between the signal circuit terminal A and the ignition circuit terminal B. Verify the scan tool Header Latch Switch parameter is parameter is Latched.
⇒If not the specified value, test the signal circuit for an open/high resistance. If the circuit tests normal, replace the BCM.

5. If all circuits test normal, test or replace the header latch switch.

Folding Top Control Switch Test

1. Ignition OFF, disconnect the harness connector at the folding top control switch.
2. Ignition ON, verify that a test lamp illuminates between the B+ circuit terminal 4 and ground.
=If the test lamp does not illuminate, test the B+ circuit for a short to ground or an open/high resistance. If the circuit tests normal and the B+ circuit fuse is open, test all components associated to the fuse for a short to ground.
3. Verify the scan tool Top Control Switch parameter is Inactive.
=If not the specified value, test the appropriate signal circuit terminal 2 or 5 for a short to voltage. If the circuit tests normal, replace the FTC module.
4. Install a 3A fused jumper wire between the signal circuit terminal 2 and the B+ circuit terminal 4. Verify the scan tool Top Control Switch parameter is Open.
=If not the specified value, test the signal circuit for an open/high resistance. If the circuit tests normal, replace the FTC module.
5. Install a 3A fused jumper wire between the signal circuit terminal 5 and the B+ circuit terminal 4. Verify the scan tool Top Control Switch parameter is Close.
=If not the specified value, test the signal circuit for an open/high resistance. If the circuit tests normal, replace the FTC module.
6. If all circuits test normal, test or replace the folding top control switch.

Folding Top Inoperative Test

1. Ignition OFF, wait four minutes for the module to release the pressure in the hydraulic system.
2. Manually open the folding top cover to access the hydraulic fluid bypass valve.
3. Turn the hydraulic fluid by-pass valve counterclockwise to inhibit folding top movement.
4. Disconnect the X431 inline harness connector at the folding top motor assembly.
5. Test for less than 5 ohms between the ground circuit terminals listed below and ground.
 - A2
 - A3
 - B3
=If greater than the specified range, test the ground circuit for an open/high resistance.
6. Ignition ON, test for less than 5 ohms between the control circuit terminals listed below and ground.
 - A4
 - B4
=If greater than the specified range, test the control circuit for an open/high resistance. If circuits test normal, replace the FTC module.
7. Connect a test lamp between control circuit terminal B4 and control circuit terminal A4.
8. Ignition ON, command Pump Motor A Direction and Pump Motor B Direction with a scan tool. The test lamp should turn ON when commanding the Pump Motor A Direction and Pump Motor B Direction states.
=If the test lamp remains OFF during either of the commands, test for a short to ground on either control circuit. If the circuits test normal, replace the FTC module.
9. Connect a test lamp between the control circuit terminal B6 and the ground circuit terminal B3.
10. Ignition ON, command Valve 3 ON and OFF with a scan tool. The test lamp should turn ON and OFF when changing between the commanded states.
=If the test lamp is always ON, test the control circuit for a short to voltage. If the circuit tests normal, replace the module.
=If the test lamp is always OFF, test the control circuit for a short to ground or open/high resistance. If the circuit tests normal, replace the FTC module.
11. If all circuits test normal, test or replace the folding top motor assembly.

Component Testing

Header Latch Switch

1. Ignition OFF, disconnect the harness connector at the header latch switch.
2. Test for infinite resistance between the signal terminal A and the ignition terminal B with the switch in the open position.
⇒If not the specified value, replace the header latch switch.
3. Test for less than 1 ohm between the signal terminal A and the ignition terminal B with the switch in the closed position.
⇒If not the specified value, replace the header latch switch.

Folding Top Control Switch

1. Ignition OFF, disconnect the harness connector at the folding top control switch.
2. Test for infinite resistance between the signal terminal 2 and the B+ terminal 4 with the switch in the open position.
⇒If not the specified value, replace the folding top control switch.
3. Test for less than 1 ohm between the signal terminal 2 and the B+ terminal 4 with the switch in the closed position.
⇒If not the specified value, replace the folding top control switch.
4. Test for infinite resistance between the signal terminal 5 and the B+ terminal 4 with the switch in the open position.
⇒If not the specified value, replace the folding top control switch.
5. Test for less than 1 ohm between the signal terminal 5 and the B+ terminal 4 with the switch in the closed position.
⇒If not the specified value, replace the folding top control switch.

Repair Instructions

Perform the [Diagnostic Repair Verification](#) after completing the diagnostic procedure.

- [Folding Top Pump with Motor Replacement](#)
- [Convertible Top Switch Replacement](#)
- [Folding Top Front Locating Pin Replacement](#)
- [Control Module References](#) for FTC module replacement, setup, and programming