



## STAR ONLINE PUBLICATION



**Case Number:** S2223000022 Rev. B

**Release Date:** January 2024

**Symptom/Vehicle Issue:** Power Liftgate Inoperative Or Intermittently Will Not Open Or Close.

### Discussion:

1. Duplicate and verify the customer complaint
2. Check for DTC's in the PLGM Power Lift Gate Module. Follow diagnostics for any active codes. Refer to 08 - Electrical / 8N - Power Systems / Power Liftgate / Diagnosis and Testing for additional information.
3. If no DTC's exist, or in addition to DTC testing inspect wire connections at the power drive unit. (Fig1)
4. Use Service Library diagnostic aids and resources. 08 - Electrical / 8N - Power Systems / Power Liftgate / Diagnosis and Testing section contains condition based diagnostic charts. It also has a table of input/outputs and inhibit monitor explanations.

See the below examples of additional information to assist in diagnosis. Reviewing these items may help in a difficult to duplicate condition with what to monitor

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### SYMPTOM DRIVEN POWER LIFTGATE SYSTEM DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
LIFTGATE WILL NOT INITIATE POWER OPEN/POWER CLOSE WITH EITHER FOB/K OR OVERHEAD CONSOLE SWITCH	1. Power Liftgate System Inhibitors preventing operation.	1. Check Inhibit Monitors using a diagnostic scan tool. Refer to the POWER LIFTGATE SYSTEM INHIBIT MONITORS section below. Repair if required.
	2. Power Liftgate Input/Output status incorrect.	2. Check power liftgate input - output status using a diagnostic scan tool. Refer to the POWER LIFTGATE INPUT-OUTPUT TABLE section below. Repair if required.
	3. Binding or sticking of components.	3. Establish location of binding or sticking components. Repair or replace if required.
	4. Wiring problems (system or vehicle).	4. Refer to the appropriate wiring information. Repair if required.
	5. Ineffective Power Liftgate Module (PLGM).	5. Test the PLGM using a diagnostic scan tool. Replace if required.
	6. Ineffective power liftgate latch assembly.	6. Check for foreign matter or damaged components preventing proper latch operation. Use diagnostic scan tool to cycle the latch. Replace if required.
	7. Ineffective liftgate Power Drive Unit (PDU).	7. Use a diagnostic scan tool to cycle the PDU. Replace if required.
FOBIK DOES NOT OPERATE POWER LIFTGATE, BUT OVERHEAD CONSOLE SWITCH DOES	1. Power Liftgate System Inhibitors preventing operation.	1. Check Inhibit Monitors using a diagnostic scan tool. Refer to the POWER LIFTGATE SYSTEM INHIBIT MONITORS section below. Repair if required.
	2. Power Liftgate Input/Output status incorrect.	2. Check power liftgate input - output status using a diagnostic scan tool. Refer to the POWER LIFTGATE INPUT-OUTPUT TABLE section below. Repair if required.
	3. Key in ignition.	3. FOB with Integrated Key (FOBIK) buttons do not function while key is in ignition by design. Remove key from ignition and retry.

## Customer complaint/condition-based diagnostics

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## POWER LIFTGATE SYSTEM CONTROL PARAMETERS

The power liftgate system is designed with a number of control parameters, which are conditions that must be fulfilled to allow operation. These control parameters are listed below:

- The PLGM will inhibit operation of the power liftgate in extreme ambient temperatures. These temperatures are at or below about -30° C (-22° F) and at or above about 65° C (149° F). The pinch sensor/thermistors assembly on the right side of the liftgate monitors the ambient temperature.
- The transmission must be in the Park (P) or Neutral (N) positions for the power liftgate system to operate.
- The vehicle speed input must be zero (0) for the power liftgate system to operate.
- The electrical system voltage must be within minimum and maximum specifications for the power liftgate system to operate. A low-voltage cut off is built into the power liftgate system to prevent the battery from discharging to the point where the vehicle cannot be operated.
- If the ignition switch is in the Start position, the power liftgate system will not initiate a power cycle.
- If the ignition switch is moved to the Start position during a power cycle, the power liftgate will pause.
- If the vehicle is locked, the exterior liftgate handle will not release the latch. The FOB/K and the overhead console switch will work for power open or close cycles.
- If the vehicle theft alarm is armed, the overhead console switch will not open the liftgate; however, the FOB/K will.
- If a liftgate pinch sensor is activated during a power close, the liftgate will reverse direction. If a pinch sensor is already active, the power liftgate system will not initiate a power close. A pinch activation during latch cinch will stop the cinch operation.
- If something sufficiently impedes liftgate travel, the power liftgate will detect an obstacle and reverse direction, traveling to full open or full closed.
- If multiple obstacles are detected during the same power open or close cycle, the liftgate will abort that power cycle and go into full manual operation.
- The power liftgate components are protected by the power liftgate system fuse. If the fuse is ineffective, the power liftgate system will not function.
- Some Diagnostic Trouble Codes (DTC) stored in the PLGM may cause the power liftgate system not to operate. Always use a diagnostic scan tool to check and clear DTCs from the PLGM before and after servicing any power liftgate system components.

## POWER LIFTGATE INPUT - OUTPUT TABLE

INPUT	NORMAL READINGS			DESCRIPTION
	FULLY CLOSED AND LATCHED	FULLY OPEN	BETWEEN FULLY OPEN AND CLOSED	
PRIMARY RATCHET - AJAR SWITCH CLOSED	FALSE	TRUE	TRUE	Primary/Ajar switch, internal to the liftgate latch. Open when latch is in primary. Closed when latch is out of primary.
SECONDARY RATCHET SWITCH CLOSED	FALSE	TRUE	TRUE	Internal to the liftgate latch. Indicates when the latch is in secondary position. Open when in secondary position. Closed when out of secondary position.
SECTOR GEAR SWITCH CLOSED	FALSE	FALSE	FALSE	Internal to the liftgate latch. Essentially a park switch for the latch. When latch is running a cinch or release, this switch is Closed. After cinch or release is complete, the Power LiftGate Module (PLGM) will reverse direction of the latch until the switch is Open.

## Operational and input/output information

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Customer Preferences 2021 JEEP GRAND CHEROKEE 3.6L V6 24V VVT ENGINE UPG I W/ESS  
1C4RJKBG9M8188521 13.00 Volts

**Utilities**

- Flight Recording Viewer
- Custom Display
- Vehicle Data
- Flight Recording
- Barcode Reader
- NVP
- Analysis**
- Reports
- OBDII Monitor
- Inhibit Monitors**
- Loss of Comm Test

**Resources**

- DealerCONNECT
- Service Library

**Help**

## Inhibit Monitors

PLGM

### Inhibit Monitor 1

NAME	VALUE	UNITS
Ratchet Fork Bolt Switch Closed	---	
Pawl Detent Switch Closed	---	
Position Sensor 2 Status	---	
Primary Ratchet Switch Closed	---	
Number of Good Cycles Since Set	---	-
Position Sensor 1 Status	---	
Gear Position 1 Switch Closed	---	
Battery Voltage	---	V
Right Pinch Sensor Voltage	---	Volts
Inhibit Monitor ID	---	
Left Pinch Sensor Voltage	---	Volts

Inhibit monitors are found in WiTECH under the Analysis tab.

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### POWER LIFTGATE SYSTEM INHIBIT MONITORS

The following is a list of inhibit monitors that may be observed using an appropriate diagnostic scan tool.

INHIBIT MONITOR	POSSIBLE CAUSES	CORRECTION
\$80 OPEN INHIBIT - VOLTAGE TOO LOW	1. Low or dead battery.	1. Test and charge battery. Replace if required.
	2. Ineffective power or ground circuits to the Power LiftGate Module (PLGM).	2. Check the power and ground circuits for the PLGM. Repair if required.
\$82 CLOSE INHIBIT - VOLTAGE TOO LOW	3. Inaccurate voltage reading from the PLGM.	3. Compare the PLGM battery reading using a diagnostic scan tool with a voltmeter reading at the PLGM wiring connections. If a voltage difference of 0.5 Volt or greater is obtained, replace the PLGM.
\$81 OPEN INHIBIT - VOLTAGE TOO HIGH	1. Charging system over voltage.	1. Test the charging system. Repair if required.
\$83 CLOSE INHIBIT - VOLTAGE TOO HIGH	2. Inaccurate voltage reading from the PLGM.	2. Compare the PLGM battery reading using a diagnostic scan tool with a voltmeter reading at the PLGM wiring connections. If a voltage difference of 0.5 Volt or greater is obtained, replace the PLGM.
\$84 OPEN INHIBIT - TEMPERATURE TOO LOW	1. Temperature was below -30° C (-22° F) when the operation was attempted.	1. Inform customer of power liftgate system temperature operating range.
	2. Open or high resistance to right pinch sensor thermistor through signal or ground circuit.	2. Check the signal and ground circuits between the pinch sensor and the PLGM including the in-line connectors. Repair if required.
\$86 CLOSE INHIBIT - TEMPERATURE TOO LOW	3. Ineffective right pinch sensor or thermistor.	3. Allow vehicle to sit in a constant temperature environment for one hour with the liftgate open. Test the resistance of the right pinch sensor and thermistor compared to specification. Replace if required.
	4. Inaccurate temperature reading from the PLGM.	4. Allow vehicle to sit in a constant temperature environment for one hour with the liftgate open. Compare the PLGM temperature reading using a diagnostic scan tool with the temperature indicated by the resistance specification of the right pinch sensor and thermistor. If the right pinch sensor and thermistor are within range of specification and the temperature difference at the PLGM is greater than 4.5° C (8° F), replace the PLGM.
\$85 OPEN INHIBIT - TEMPERATURE TOO HIGH	1. Temperature was above 65° C (149° F) when the operation was attempted.	1. Inform customer of power liftgate system temperature operating range.
	2. Shorted or partially shorted right pinch sensor thermistor through signal or ground circuit.	2. Check the signal and ground circuits between the pinch sensor and the PLGM including the in-line connectors. Repair if required.
		3. Allow vehicle to sit in a constant temperature environment for one hour with the liftgate open. Test the resistance of the right pinch sensor and

### Liftgate Inhibit Monitor Information.

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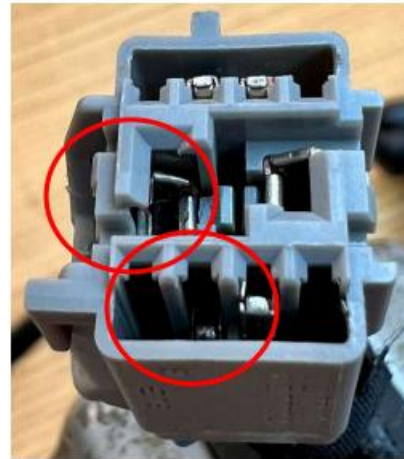
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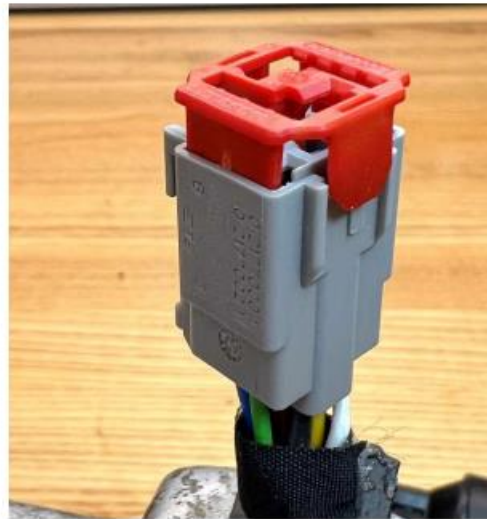
## STAR ONLINE PUBLICATION



Normal lock



Lock with unseated pins



Other possible intermittent causes of Power Lift Gate opening issues

Left images are normal condition

Right images show damaged and unseated pins due to a pin lock not fully assembled

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