

# Troubleshooting Guide



L6473 • ECN 1-2779



**PLEASE NOTE:**  
Store this document in your vehicle glove box or with your important engine documents for future reference.

800.663.0096

[www.powerhalt.com](http://www.powerhalt.com)



## IMPORTANT

Prior to proceeding:

- Ensure all wiring harness connections are securely connected and latched to their mates.
- Inspect all wiring for signs of damage or wear that could cause electrical shorts or discontinuities.
- Ensure any extended lengths of harness do not exceed a span of 6 meters [20 feet] from controller.



Use your discretion to restart the engine after an emergency shut-down. In most cases, it is recommended to wait until the cause is understood and shared with the necessary safety parties before restarting.

## WARNING

- **Do NOT cycle power by removing connectors from controller. Cycle power by disconnecting at battery or removing main power fuse.**
- **Do NOT cycle power to the system until instructed to do so. In certain cases, cycling the power can cause the system to fail.**
- **Do NOT operate engine with any harness connections disconnected. This is dangerous and could cause system components to fail under extreme operation conditions.**
- **Unnecessary connection and disconnection of harness connectors wears out plating on electrical contacts and will affect continuity.**
- **Do NOT disassemble or tamper with any system components. Doing so will void the owner's warranty.**

## General Troubleshooting Procedure

1. Confirm which mode the system is set to by checking the mode selection jumper connector. Refer to the PH+ Installation Manual for more information.
2. Identify Operating Mode of system by checking which pattern the switch light is flashing:
  - a. Solid Light – Valve Closed
  - b. No Flash – Normal Operating Mode
    - i. Enter Test Mode to confirm which Trip Speed is active (Short Flash vs Long Flash).
  - c. Short Flashing light with PTO disconnected – Programming Mode or Test Mode (Primary Trip Speed)
    - i. If mode selection jumper is disconnected, then Programming Mode is active.
  - d. Long Flashing light with PTO line connected – Programming Mode or Test Mode (Secondary Trip Speed)
    - i. If mode selection jumper is disconnected, then Programming Mode is active.
3. If issue is not related to harness connections / Mode Selection Box / Operating Mode, refer to the following detailed Troubleshooting Sections.

## Manual Trip (Toggle Switch) fails to actuate the valve

Cause	Solution
Switch is damaged	<ul style="list-style-type: none"> <li>• See Toggle Switch troubleshooting section</li> </ul>
Actuator is damaged	<ul style="list-style-type: none"> <li>• Perform manual trip and listen for movement to determine if actuator has seized. If seizure suspected, remove intake hose and inspect flap.</li> <li>• Disconnect wiring harness at actuator and confirm 12VDC is being measured across pink/brown wires when toggle switch is activated</li> <li>• Disconnect wiring harness at actuator and ensure coil resistance is equal to manufacturer specification and replace actuator if necessary</li> </ul>
System is not receiving adequate power	<ul style="list-style-type: none"> <li>• Ensure battery voltage is not less than 10V (12V system) and replace/charge battery if necessary</li> <li>• Check main power fuse at battery and replace if necessary</li> </ul>

## Automatic Shutdown Function fails to actuate valve at programmed Trip Speed

Cause	Solution
Controller is not programmed for the correct trip speed	<ul style="list-style-type: none"> <li>• Use <u>TEST Mode</u> to ensure the controller was programmed correctly. <u>Refer to Programming Manual for more information.</u></li> </ul>
Controller is not correctly sensing engine speed	<ul style="list-style-type: none"> <li>• Ensure crankshaft speed sensing jumper connectors are fully connected and latched</li> <li>• Use <u>TEST Mode</u> and perform test procedure to verify engine shut down occurs at 1500RPM. <u>Refer to Installation Manual for more information.</u></li> </ul>
Throttle Valve Actuator is damaged	<ul style="list-style-type: none"> <li>• Perform manual trip and listen for movement to determine if actuator has seized. If seizure suspected, remove intake hose and inspect flap.</li> <li>• Disconnect wiring harness at actuator and confirm 12VDC is being measured across pink/brown wires when toggle switch is activated</li> <li>• Disconnect wiring harness at actuator and ensure coil resistance is equal to manufacturer specification and replace actuator if necessary</li> </ul>
System is not receiving adequate power	<ul style="list-style-type: none"> <li>• Ensure battery voltage is not less than 10V (12V system) and replace/charge battery if necessary</li> <li>• Check main power fuse at battery and replace if necessary</li> </ul>
<b>If Applicable:</b> Secondary Trip Speed is unintentionally enabled (or disabled) and is causing system to trip unexpectedly	<ul style="list-style-type: none"> <li>• System can be configured to force engine shutdown at 2 different engine speeds. Secondary Trip Speed is the additional trip speed and it is active when its input from the harness is supplied ground.</li> <li>• <b>Applicable if:</b> Secondary Trip Speed input (Brown Wire, Pin 3 on grey connector of Common Power Harness) is connected or shorted to electrical ground</li> <li>• Depending on application, ensure that Secondary Trip Speed is correctly enabled/disabled</li> </ul>
Wiring harness is loose	<ul style="list-style-type: none"> <li>• Ensure all connectors are fully installed and latched</li> </ul>
Wiring harness is damaged	<ul style="list-style-type: none"> <li>• Inspect all wiring for signs of damage and replace if necessary.</li> </ul>

## False Trip: System has automatically shut down the engine at incorrect engine speed

Cause	Solution
Controller is not programmed for the correct trip speed	<ul style="list-style-type: none"> <li>Use <u>TEST Mode</u> to ensure the controller was programmed correctly. Refer to <u>Programming Manual</u> for more information.</li> </ul>
<b>If Applicable:</b> Secondary Trip Speed is unintentionally enabled (or disabled) and is causing system to trip unexpectedly	<ul style="list-style-type: none"> <li>System can be configured to force engine shutdown at 2 different engine speeds. Secondary Trip Speed is the additional trip speed and it is active when its input from the harness is supplied ground.</li> <li><b>Applicable if:</b> Secondary Trip Speed input (Brown Wire, Pin 3 on grey connector of Common Power Harness) is connected or shorted to electrical ground</li> <li>Depending on application, ensure that Secondary Trip Speed is correctly enabled/disabled</li> </ul>
Controller cannot correctly sense the engine speed	<ul style="list-style-type: none"> <li>Ensure crankshaft speed sensing jumper connectors are fully connected and latched</li> <li>Use <u>TEST Mode</u> and perform test procedure to verify engine shut down occurs at 1500RPM. Refer to <u>Installation Manual</u> for more information.</li> </ul>
Wiring harness is loose	<ul style="list-style-type: none"> <li>Ensure all connectors are fully installed and latched</li> </ul>
Wiring harness is damaged	<ul style="list-style-type: none"> <li>Inspect all wiring for signs of damage and replace if necessary</li> </ul>

## Controller is unresponsive and toggle switch indicator does not flash

Cause	Solution
Wiring harness is loose	<ul style="list-style-type: none"> <li>Ensure all connectors are fully installed and latched</li> </ul>
Wiring harness is damaged	<ul style="list-style-type: none"> <li>Inspect all wiring for signs of damage and replace if necessary</li> </ul>
System is not receiving adequate power.	<ul style="list-style-type: none"> <li>Ensure battery voltage is not less than 10V (12V system) and replace/charge battery if necessary</li> <li>Check fuse and replace if necessary</li> </ul>

## Engine will not start

Cause	Solution
Valve is in activated state	<ul style="list-style-type: none"> <li>Confirm the red indicator light is not illuminated.</li> </ul>
Actuator is Damaged	<ul style="list-style-type: none"> <li>Perform manual trip and listen for movement to determine if actuator has seized. If seizure suspected, remove intake hose and inspect flap.</li> <li>Disconnect wiring harness at actuator and confirm 12VDC is being measured across pink/brown wires when toggle switch is activated</li> <li>Disconnect wiring harness at actuator and ensure coil resistance is equal to manufacturer specification and replace actuator if necessary</li> </ul>
Wiring harness is loose.	<ul style="list-style-type: none"> <li>Ensure all connectors are fully installed and latched</li> </ul>
Wiring harness is damaged.	<ul style="list-style-type: none"> <li>Inspect all wiring for signs of damage and replace if necessary</li> </ul>

## Engine fails to shut down when valve actuates

Cause	Solution
Actuator is Damaged	<ul style="list-style-type: none"> <li>• Perform manual trip and listen for movement to determine if actuator has seized. If seizure suspected, remove intake hose and inspect flap.</li> <li>• Disconnect wiring harness at actuator and confirm 12VDC is being measured across pink/brown wires when toggle switch is activated</li> <li>• Disconnect wiring harness at actuator and ensure coil resistance is equal to manufacturer specification and replace actuator if necessary</li> </ul>
Valve is obstructed	<ul style="list-style-type: none"> <li>• Remove air intake hose and inspect valve for dirt and debris.</li> <li>• Activate toggle switch and visually inspect valve for binding or unexpected resistance</li> </ul>
There is a leak in the system allowing air to continue entering the engine.	<ul style="list-style-type: none"> <li>• Inspect all piping/hosing for leaks and repair/patch</li> <li>• In rare circumstances due to wear, some throttle bodies may not seal completely when fully closed. If complete shut-down does not occur, the factory throttle body may need to be replaced.</li> </ul>

## Toggle Switch and/or light are unresponsive

Cause	Solution
Switch/light are improperly wired	<ul style="list-style-type: none"> <li>• Re-confirm switch/harness pin-outs are connected correctly. <a href="#">Refer to Installation Manual for Details.</a></li> </ul>
Switch is damaged	<ul style="list-style-type: none"> <li>• Check for continuity across toggle switch contacts when closed. <a href="#">Refer to Installation Manual for Details.</a></li> <li>• <a href="#">Contact PowerHalt support for replacement switch if necessary.</a></li> </ul>
Light is damaged	<ul style="list-style-type: none"> <li>• Check for continuity across switch light contacts or apply power and ground to test. <a href="#">Refer to Installation Manual for Details.</a></li> <li>• <a href="#">Contact PowerHalt support for replacement switch if necessary.</a></li> </ul>
System is not receiving adequate power	<ul style="list-style-type: none"> <li>• Ensure battery voltage is not less than 10V (12V system) and replace/charge battery if necessary</li> <li>• Check fuse and replace if necessary</li> </ul>

## Check Engine Light or Fault Codes are triggered

Cause	Solution
Engine Light/Fault code triggered during installation	<ul style="list-style-type: none"> <li>• Disconnecting factory throttle valve or crankshaft speed sensor connector with vehicle ignition power active will trigger alarm.</li> <li>• Clear fault codes and check if warnings return.</li> </ul>
Wiring harness is loose.	<ul style="list-style-type: none"> <li>• Ensure all connectors are fully installed and latched</li> </ul>
Wiring harness is damaged.	<ul style="list-style-type: none"> <li>• Inspect all wiring for signs of damage and replace if necessary</li> </ul>

\* 2017-2024 GM Duramax 6.6L applications will trigger a check engine light and P0106 fault code on every PH+ shutdown. This is normal and may put the truck in a reduced power state. The code can be cleared with a code reading device or will extinguish on its own after several normal start-up and shutdown cycles.

\* 2011-2019 Ford Power Stroke 6.7L applications will display a check engine light and P0069 fault code after two consecutive forced shutdowns with PH+. Two consecutive normal start-up and shutdown cycles should clear the check engine light. Alternatively, a code reading device can be used to clear the code.