

This Service Bulletin is a supplement to the Service Manual, Group 30, New Features Electrical General, PV776-TSP23760/1.

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New Features Electrical General
VN

Battery Lifeguard System



W3003756

(Effective from December 1999)

This Service Bulletin contains information about the Battery Lifeguard System and some changes that have been made to it.

The main reason for this update is that some of the circuits that the Battery Lifeguard disconnects have been moved to other fuses.

There are currently 3 different designs of the Battery Lifeguard System depending on the build date of the vehicle.

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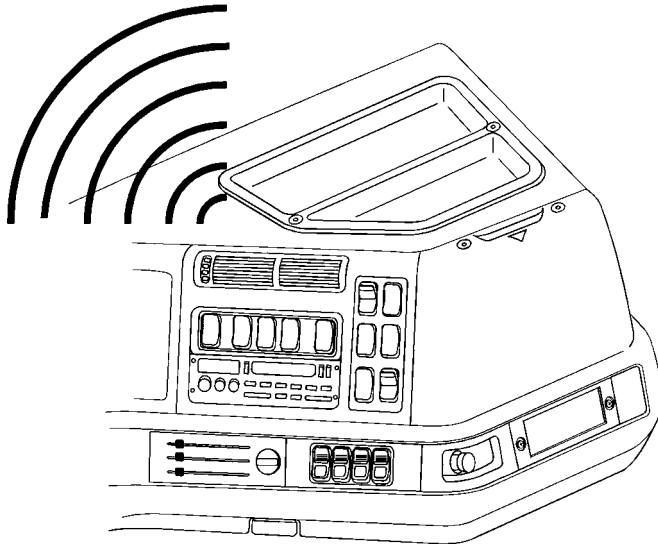
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Battery Lifeguard System, General

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(This reference is for electronic use only)



W3002365

The Battery Lifeguard is an optional system designed to prevent electrical equipment from excessively draining the batteries. This ensures that the vehicle will be able to start the next time the engine is cranked.

If the vehicle batteries are drained to 12.0 volts (12.2 volts before 11/99), the Battery Lifeguard alerts the driver with an audible alarm. The alarm sounds for 60 seconds with alternating long and short beeps. If no corrective action is taken within those 60 seconds, certain circuits are disconnected. Those circuits are automatically reconnected when the voltage reaches 12.9 volts.

For ease of troubleshooting, at the same time the voltage drops to 12.2 volts, an LED on the Battery Lifeguard comes ON and stays on until the unit resets. This LED is visible with the front TEC cover removed, but is not meant to be a warning light. It only indicates when the unit has disconnected the circuits it controls.

When a charging current is applied to the batteries, or when voltage rises above 12.9 volts, the Battery Lifeguard automatically resets and the LED turns OFF.

The Battery Lifeguard uses a latching relay to connect and disconnect power. It is mounted on the TEC tray, and connects into the wiring below the fuse blocks. It is accessed by removing the top cover of the TEC. It is a non-serviceable part (replacement only).

If the Battery Lifeguard frequently trips, it is an indication of a problem in the batteries or charging system.

Battery Lifeguard Units Installed Before 11/99

"Battery Lifeguard System" page 1
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A reliable ground connection (4) is required for voltage monitoring and switching of the Battery Lifeguard relay from one latched position to the other. Disconnecting the ground will disable the unit in a latched on or off state.

If the ground wire is broken or disconnected, the Battery Lifeguard will not function, and the fuses will not be disconnected when voltage drops below 12.2 volts.

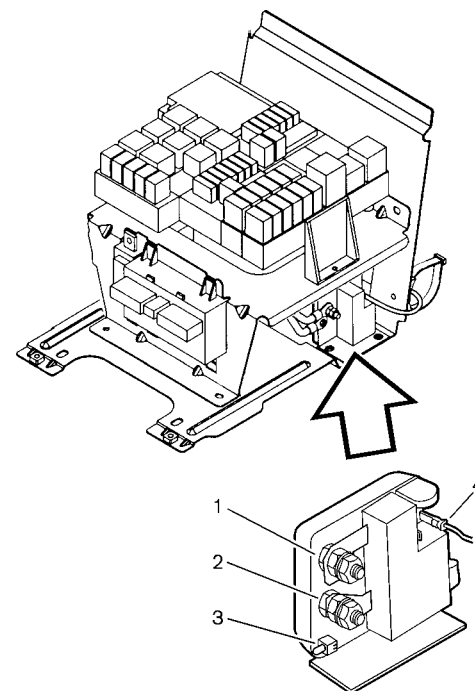
If the ground is broken or disconnected after the fuses are disconnected, the Battery Lifeguard will NOT reset to reconnect the fuses when voltage rises above 12.9 volts. The Battery Lifeguard will not reset until the faulty ground is repaired.

Circuits disconnected by the Battery Lifeguard:

Vehicles Built from 11/97 to 2/98.

Fuse Circuit

- 41 Cigarette Lighter
- 42 Auxiliary Power Sockets
- 43 Luggage Compartment Lamps
- 44 Cab Interior Lamps
- 45 Headlamp (right-hand side only)
- 46 Horn (city)
- 47 Back of Cab Lamp
- 48 Tractor Stop Lamps



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Battery Lifeguard Location in Center Dash
(before 11/99)

Vehicles Built from 2/98 to 11/99.

Fuse Circuit

- 15 Vehicle Marker Lamps
- 18 Cigarette Lighter
- 19 Cab Interior Lamps
- 20 Headlamp (left-hand side only)
- 21 Trailer Stop Lamps
- 22 Auxiliary Lamps
- 23 Horn (air)
- 24 Trailer Marker Lamps
- 25 CB Radio Power
- 26 Back of Cab Lamp Switch
- 27 Communications System (Qualcomm)
- 28 Bunk Power Outlets/Refrigerator
- 29 Diagnostic Connector/Instrument Cluster
- 30 Headlamp Interrupter
- 31 Stop Lamp Air Switch
- 32 Headlamp (right-hand side only)
- 34 Horn (city)
- 35 Vehicle Stop Lamps

Electrical Connections		
1	Voltage supply to fuses from Battery Lifeguard	5/16 in. ring terminal
2	Voltage supply from ignition relay to Battery Lifeguard	1/4 in. ring terminal
3	LED	
4	Battery Lifeguard Ground	Soldered connection

Battery Lifeguard Units Installed 11/99 and After

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(This reference is for electronic use only)

It is now required that the parking brake on the vehicle be activated in order for the Battery Lifeguard to function. If the battery voltage drops below 12.0 volts during normal operation (parking brake not activated), the unit will not disconnect circuits; however, the LED and alarm will function as previously described. Once the parking brake is set the Battery Lifeguard will disconnect the circuits described below.

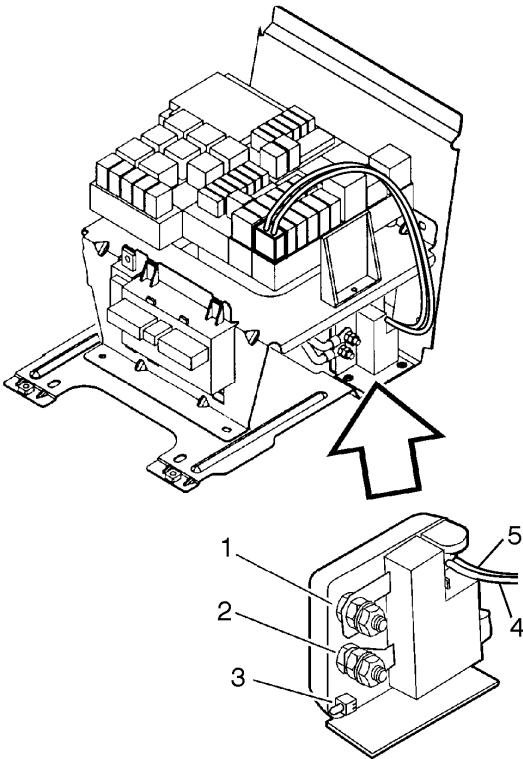
The required ground (4) and parking brake (5) connections that are needed to feed the Battery Lifeguard unit are supplied in the VN fuse block. There is a harness connector that plugs into expansion block 2, location 6 (see fuse decal behind the front TEC cover for the exact location).

If either of these connections are broken, or if the connector is disconnected from the fuse block, the Battery Lifeguard will not function, and the fuses will not be disconnected when the voltage drops below 12.0 volts. Please be aware that intentionally disconnecting the ground circuit may damage the Battery Lifeguard unit.

Additionally, if the circuits are disconnected when the ground connection is broken, the Battery Lifeguard will NOT reset to reconnect the circuits when voltage rises above 12.9 volts. The Battery Lifeguard will not reset until the ground signal is restored.

Cicuits disconnected by the Battery Lifeguard:
(For units installed 11/99 and after)

Fuse	Circuit
15	Vehicle Marker Lamps
16	Cigarette Lighter
17	Cab Interior Lamps
18	Headlamp (left-hand side only)
19	Auxiliary Lamps
20	Trailer Marker Lamps
22	CB Radio Power
23	Back of Cab Lamp Switch
24	Communications System (Qualcomm)
25	Bunk Power Outlets/Refrigerator
26	Luggage Lamps
27	Flash to Pass
36	Bunk Fan Motor
37	Mirror Controls
38	Radio Power
39	Driver Window Motor
40	Passenger Window Motor



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Battery Lifeguard Location in Center Dash
(after 11/99)

Electrical Connections		
1	Voltage supply to fuses from Battery Lifeguard	5/16 in. ring terminal
2	Voltage supply from ignition relay to Battery Lifeguard	1/4 in. ring terminal
3	LED	
4	Battery Lifeguard Ground	Soldered connection
5	Battery Lifeguard Park Brake Signal	Soldered Connection