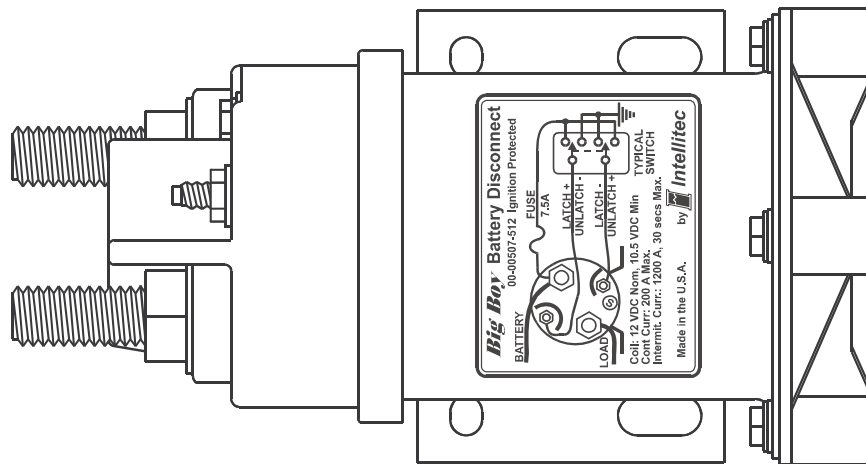


BATTERY DISCONNECT 200AMP "BIG BOY"

SERVICE MANUAL



Battery Disconnect provides a simple and safe means of remotely disconnecting batteries of an RV or boat. With a touch of a remote switch, the batteries will be completely disconnected, preventing unwanted drain when the RV, or boat are put into storage.

The heart of the system is a unique *latching* relay developed specifically for this purpose. While this relay is capable of carrying heavy currents, it requires **NO** power to stay open or closed. It only draws power during activation. The relay is sealed against the environment and is designed to withstand the shock and vibration experienced in the most severe RV, or boat applications.

WARNING

The Battery Disconnect system connects directly to the vehicle's positive battery terminal. Inadvertent shorts across the battery or to ground, may cause severe damage and injury. Use extreme caution when working with these wires. Always wear safety glasses when working with the battery connections.

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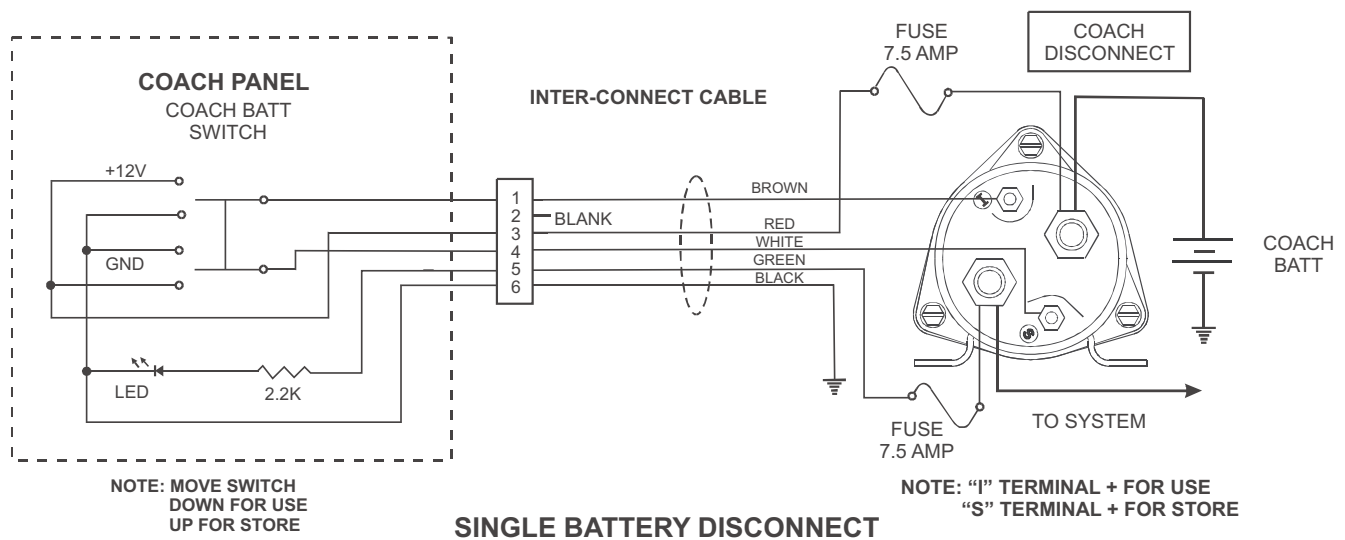
SERVICE MANUAL

THE RELAY - How It Works

The Battery Disconnect Relay is a mechanically latching switch. It operates by the momentary application of battery voltage to the coil terminals in one direction for latching (closed), or the other direction for unlatching (open).

To close the relay, +12 volts is applied to the "I" terminal and ground to the "S" terminal of the relay. When this is done, the plunger is magnetically pulled into the solenoid coil and the contact washer connects to the contact studs, making electrical connection. While this happens, the rod magnet, suspended below the plunger in a plastic holder, is attracted (opposite poles attract) to the plunger, by the magnetic field. It swings into position at the end of the plunger (See *FIGURE 1*). When the voltage is removed from the coil, the plunger gets pushed back by the return spring, but is blocked by the magnet holder. The contacts remain CLOSED.

To open the relay, +12 volts is applied to the "S" terminal and ground on the "I" terminal. When this is done, the plunger is again pulled into the coil. However, since the magnetic polarity of the coil is reversed, the rod magnet is repelled (like poles oppose), and swings out of the way (See *FIGURE 2*). When the voltage is removed from the coil, the plunger gets pushed out by the return spring, breaking the connection between the two large terminals.



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DISCONNECT CLOSED & LATCHED

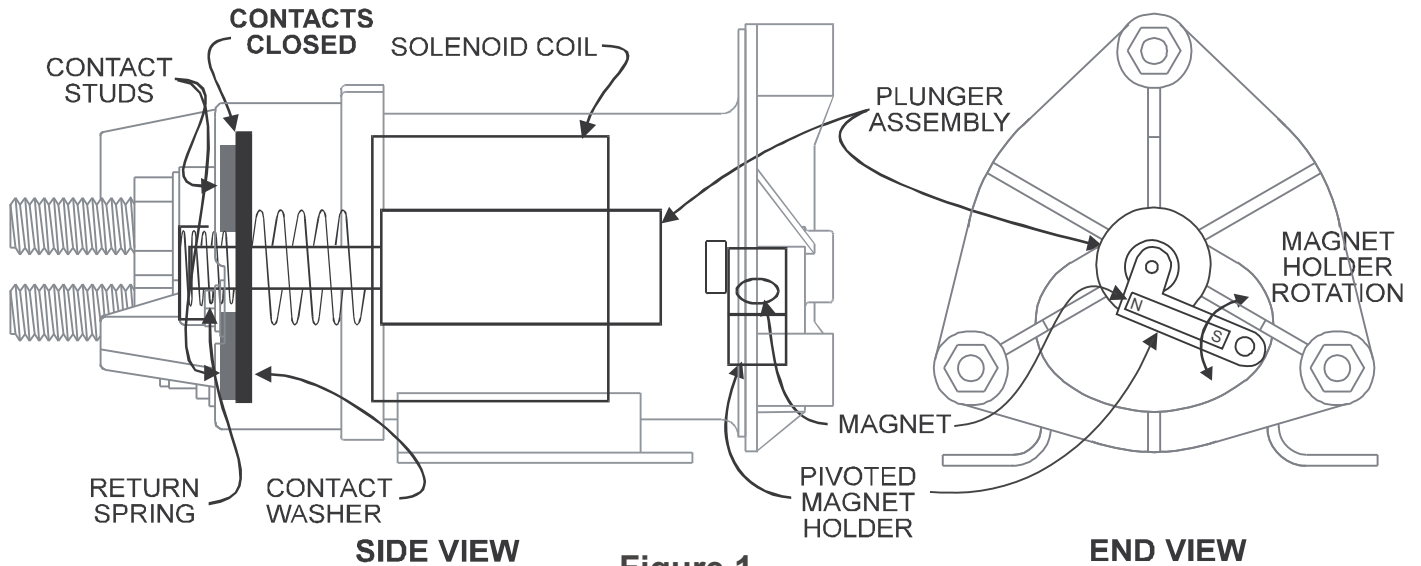


Figure 1

DISCONNECT OPEN

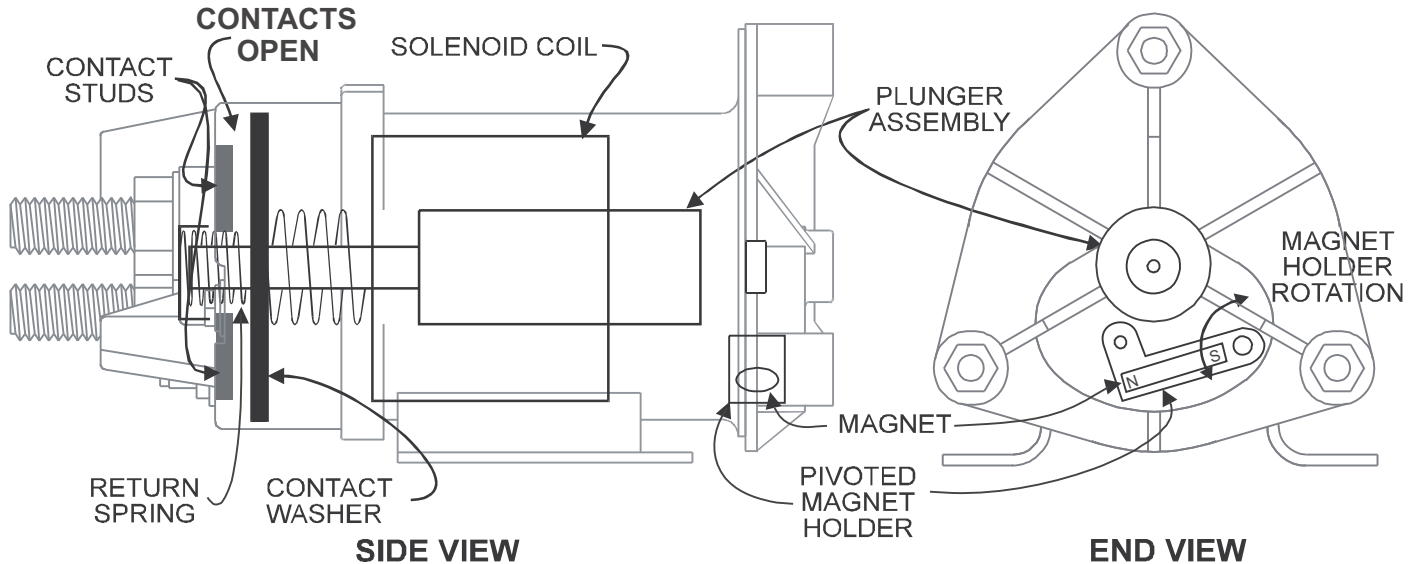


Figure 2

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BATTERY DISCONNECT 200AMP "BIG BOY"

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Trouble Shooting

Problem	Possible Cause/Solution
Relay won't engage	<p>Check fuses on relay</p> <p>Check battery voltage, must be greater than 10.5 volts.</p> <p>While switch is engaged, check for voltage across the coil terminals (+ on the "I" terminal and ground on the "S" terminal). If 0 volts, replace panel, if + voltage, replace relay.</p> <p>Check wiring</p>
Relay won't disengage	<p>Check fuses on relay</p> <p>Check battery voltage, must be greater than 10.5 volts</p> <p>While switch is engaged, check voltage across the coil terminals (+ on the "S" terminal and ground on the "I" terminal). If 0 volts, replace panel, if + voltage, replace relay.</p> <p>Check wiring</p>
Light on panel remains on although relay is off.	<p>Is coach plugged in? Unplug coach</p> <p>Is engine running? Turn engine off</p> <p>Check wiring</p> <p>Check fuses on relay</p> <p>Check wiring</p>
Light is off although relay is on	<p>Replace panel assembly</p> <p>Check fuses on relay</p> <p>Check wiring</p>
BD1 No voltmeter reading	<p>Check voltage on green wire. If + voltage, replace panel</p>

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