

# **8491 BATTERY SAVER KIT** **INSTRUCTIONS**

Thank you for purchasing the Shoebox Electronics Battery Saver kit! It should provide you with many years of useful service. In my own experience of designing and testing this unit, I have more than once been reminded to shut my headlight switch off after a drive to work on a foggy morning. Your Battery Saver has been built with conservatively rated quality components, and professional assembly, but if you need a replacement part, or the unit fails after installation, please contact: [jim@shoebox-electronix.com](mailto:jim@shoebox-electronix.com) or call 831-332-7681.

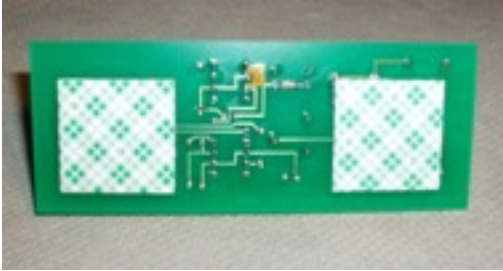
## **KIT CONTENTS**

- 1 ea assembled & tested 8691B printed circuit board
- 1 ea 12" wire w/ RED RING lug
- 1 ea 12" wire w/ 0.23" RED QUICK DISCONNECT lug
- 1 ea 12" wire w/ 0.29" RED QUICK DISCONNECT lug
- 1 ea 12" wire w/ insulation removed from one end
- 2 ea RED TAP SPLICE connector
- 1ea BLUE TAP SPLICE connector
- 3 ea Tie Wraps
- 2 ea 3M Adhesive Pads
- 1 ea Alcohol Pad
- 1 ea Warranty Card

Check the contents of your kit to the kit contents list above. This is also a good time to read through the instructions to familiarize yourself with the installation procedure. You will be connecting three wires between your headlight switch and the circuit board connector. You will need a small regular screwdriver, a #2 Philips head screwdriver, and a pair of pliers. This project should take you about an hour or so to complete.

## PREPARE THE CIRCUIT BOARD and add wires

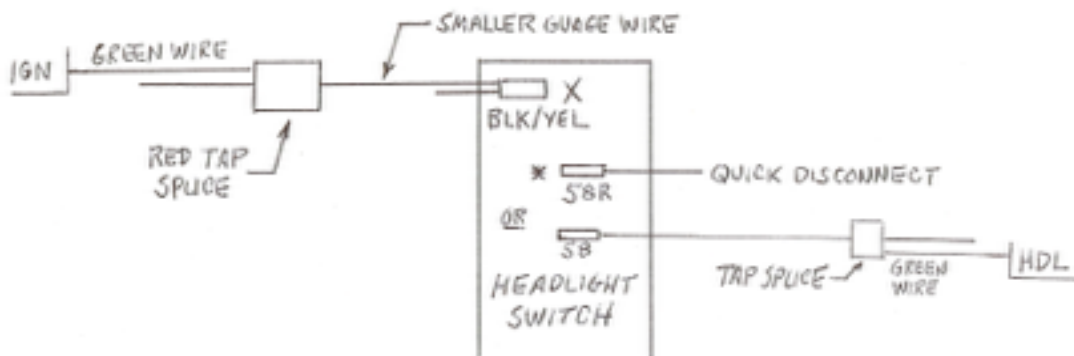
- 1) Remove the backing paper from one side of both adhesive pads.
- 2) Attach the adhesive pads to the circuit board as shown:



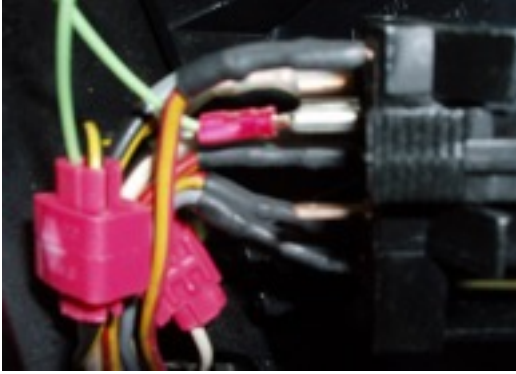
- 3) Connect the end of the wire that has no lug to IGN terminal.
- 4) Connect the wire with RED RING LUG to GRD terminal.
- 5) Connect the wire with a RED QUICK DISCONNECT to HDL terminal.

## CONNECT THE WIRING to your Vanagon

- 1) Remove the instrument panel top cover.
- 2) Remove the cable connector from the SEAT BELT / BRAKE indicator.
- 3) Remove the SEAT BELT / BRAKE indicator from the instrument cluster.
- 4) Remove the 4 Philips head screws holding the instrument cluster in place.
- 5) Slide the instrument cluster towards you about an inch or so.
- 6) Remove the HEADLIGHT SWITCH from the instrument cluster.
- 7) Push the RED TAP SPLICE onto the **smaller** gauge BLK/YEL wire connected to terminal X on the HEADLIGHT SWITCH. (there are two BLK/YEL wires connected to terminal X – one is a smaller gauge wire)



*\* IF YOUR HEADLIGHT SWITCH DOES NOT HAVE A 5BR TERMINAL AVAILABLE, YOU WILL NEED TO USE A TRP SPLICE TO CONNECT THE HDL WIRE TO THE WIRE CONNECTED TO TERMINAL SB ON THE HEADLIGHT SWITCH.*



- 8) Place the green wire into the RED TAP SPLICE up against the stop as shown, and squeeze the connector closed with a pair of pliers. Hold the 12" wire against the stop to make sure it gets crimped. The cover should click into place. The other end of this wire connects to the IGN terminal on the circuit board.



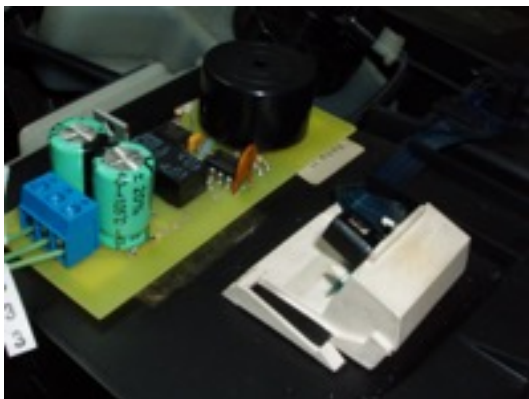
**NOTE:** Check your headlight switch for an available 58(R) terminal. .If you have a 58R terminal, proceed to step 9. If there isn't one, then you will need to add a tap splice like you just did for the IGN wire. Add this tap splice to the wire connected to the 58 terminal on your headlight switch. Cut the quick disconnect off the green wire, and insert and crimp it into the tap splice. Crimp the tap splice onto the terminal 58 wire. Proceed to step 10.

- 9) Slide the QUICK DISCONNECT lug onto headlight switch terminal 58R.
- 10) Connect the other end of this green wire to the HDL terminal on the circuit board.
- 11) Replace the HEADLIGHT SWITCH into the instrument cluster, clicking both clips into place. Make sure the switch is firmly mounted.

- 12) Replace the SEAT BELT / BRAKE warning light.
- 13) Slide the instrument cluster to align its mounting holes on the dashboard.
- 14) Fasten the RED RING LUG to the dashboard using a Philips head screw you removed earlier on the left side closest to the headlight switch.
- 15) Fasten the instrument cluster in place using the remaining three screws.
- 16) Place the three tie wraps on the three wires – pull them taught and cut off the excess. Tuck the wiring down and out of the way.
- 17) Replace the SEAT BELT/BRAKE warning light cable connector.

## **INSTALL THE CIRCUIT BOARD**

- 1) Clean the area on the top of your speedometer housing w/ the alcohol pad.
- 2) Remove the backing paper from the two adhesive pads on the circuit board.
- 3) Fasten the circuit board on top of your speedometer housing behind the white plastic bulb assembly as shown:



- 4) Replace the instrument panel cover.

## **TEST YOUR ALARM**

With your ignition switch OFF, push your headlight switch one click to activate your parking lights. The alarm should beep for approximately ten seconds, and then stop. If you turn your headlight switch back off before ten seconds, the alarm should silence. The two inputs, IGN and HDL go to 12V when the ignition switch is on, and when the headlight switch is not OFF respectively. These inputs can be checked at the blue connector using a voltmeter or a 12V test bulb from either input to GND (the center contact).

Visit our website [www.shoebox-electronix.com](http://www.shoebox-electronix.com) for information about us, and other new Vanagon products. If you would prefer speaking with one of us here at Shoebox, feel free to call us at 831-332-7681.

Thank you for your support.