

Error Free LED Turn Signal Lamp Conversion Kit



Version Date 14JAN2018

Contents

Table of FIGURES.....	2
Tools.....	3
Bill of Materials.....	3
Disclaimer.....	3
Background.....	3
Procedure.....	4
Driver Side US / Passenger Side Europe (Left Side) Load Resistor.....	6
Passenger Side US/ Driver Side Europe (Right Side) Load Resistor.....	8
Troubleshooting.....	10
The turn signals light up but I still get an error code in one or both sides.....	10
Damaged bulb holder.....	10
Support.....	10
Damaged Taillight Housing.....	10

Table of FIGURES

FIGURE 1: TRUNK TAILLIGHT COVER PANEL.....	4
FIGURE 2: WING NUTS.....	4
FIGURE 3: CONNECTOR DRIVER SIDE US / PASSENGER SIDE EUROPE (LEFT SIDE).....	5
FIGURE 4: CONNECTOR PASSENGER SIDE US / DRIVER SIDE EUROPE (RIGHT SIDE).....	5
FIGURE 5: BULB HOLDER (INSTALLED).....	5
FIGURE 6: BULB HOLDER (WITH LED).....	6
FIGURE 7: TAILLIGHT FEED THROUGH.....	7
FIGURE 8: WIRING DIAGRAM (DRIVER SIDE US/ PASSENGER SIDE EUROPE (LEFT SIDE)).....	8
FIGURE 9 – CONNECTOR LEVER.....	8
FIGURE 10: WIRING DIAGRAM (PASSENGER SIDE US / DRIVER SIDE EUROPE (RIGHT SIDE)).....	9
FIGURE 11: EPOXY LOAD RESISTOR.....	10

Tools

- Wire strippers
- Wire cutters
- Tape (optional)

Bill of Materials

- 2X load resistors and wire harness
- 2 Part Epoxy
- 2X LED lamps

Disclaimer

This kit does not come with a warranty of any kind. The purchaser assumes all risk associated with the install, including personal liability, damages to the vehicle and any other equipment used in the process.

Background

The bulbs burn out or the lamp holders melt after just short periods of time. This is caused by the low grade solder at the base of the bulb corroding thus increasing the resistance and heat. The heat eventually gets so great that it melts the solder at the end of the bulb and/or the bulb holder itself. This is apparently not an issue if you purchase the Saab OEM bulbs as they are of higher quality but are also expensive. Unfortunately, you can just replace the bulbs with LEDs without getting hyper-flashing and an error message. This is because the car's computer is expecting a certain resistance from the bulbs. The incandescent bulbs have a much higher resistance than the LEDs so the car thinks that there is a problem with the bulb. We can fool the computer by placing a load resistor in parallel with the LEDs so that the computer measures the proper resistance across the circuit.

The LEDs are not much more energy efficient than the turn signal lamps because of the size of the load resistor needed to fool the computer.

Procedure

This procedure should only take about 1hr to complete. However, The Epoxy needs to cure for 12 hrs before use

1. Open the trunk
2. Remove the 2 cover panes (one on each side) that cover access to the tail lamp assemblies

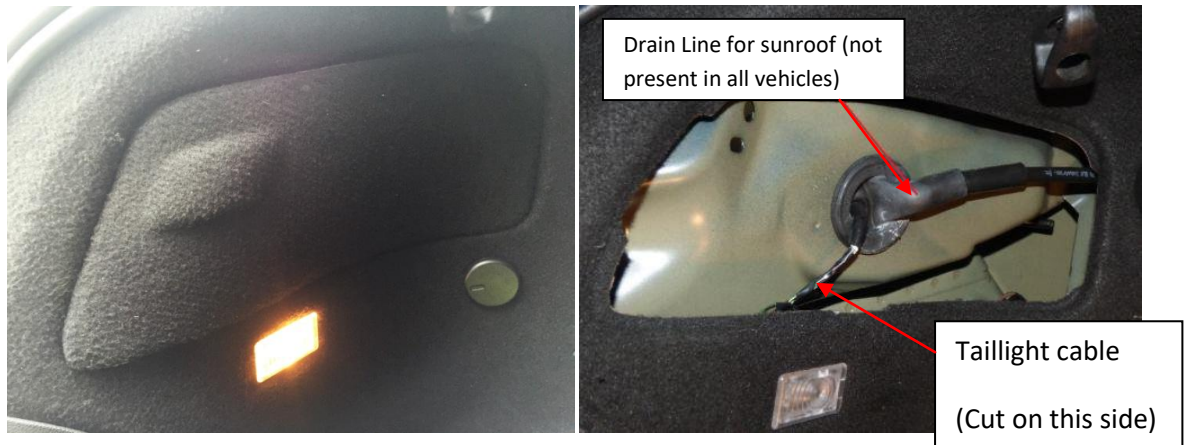


Figure 1: Trunk Taillight Cover Panel

3. Remove the wing nuts holding the tail lamps in place (there are 3 per taillight)



Figure 2: Wing Nuts

4. Carefully remove the tail lamps.
5. Disconnect the connector

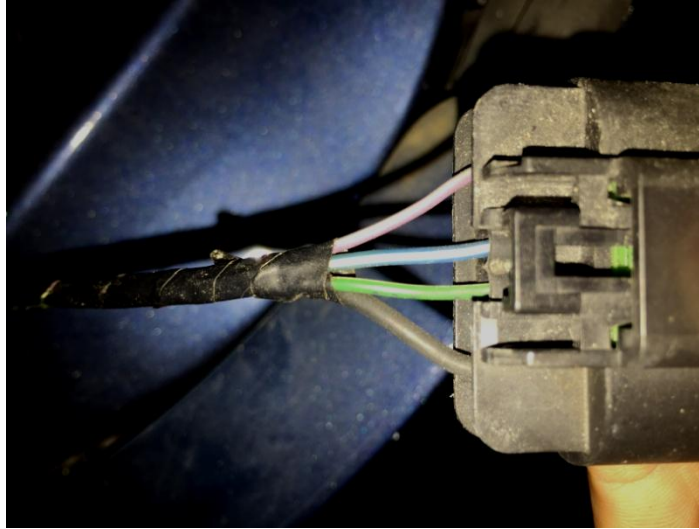


Figure 3: Connector Driver Side US / Passenger side Europe (Left side)



Figure 4: Connector Passenger Side US / Driver side Europe (Right Side)

6. Remove the bulb holder by twisting the black tabs



Figure 5: Bulb Holder (Installed)

7. Remove the incandescent bulb by gently pressing down and then twist 90degrees then pull up
8. Install the LED bulbs



Figure 6: Bulb Holder (With LED)

9. The tail lamps are now functional but will give an error code and will cause hyper flashing

Driver Side US / Passenger Side Europe (Left Side) Load Resistor

10. Inside the Trunk, peel back the protective wrap that cover the wires
11. Cut the **Black** and **Blue wire w/white stripe** (*Blue-White*) wires leaving at least 2-3 inches on either side.

NOTE: The wire will be a thicker gauge than the Blue-White or Purple-Blue wires. The wires tend to fade over time and the Blue-White wire can look an awful lot like the Green-Yellow wire

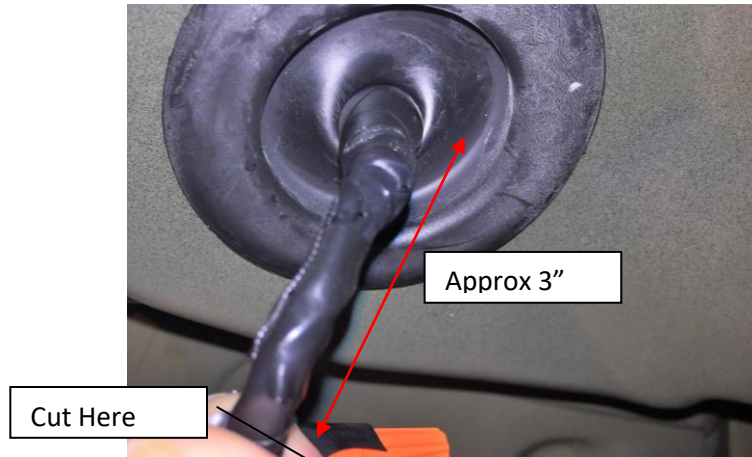


Figure 7: Taillight Feed Through

- a. This will ensure you have enough wire left to work with.
12. Strip the ends of the wires.
13. Insert the one end of the **Blue-White** wire into one of the 2 terminal connectors and close the lever. (See Figure 8 and Figure 9 for layout).
14. Insert the other end to the corresponding 3 terminal connector and close the lever. (See Figure 8 and Figure 9 for layout).
15. Insert the one end of the **Black** wire into one of the 2 terminal connectors and close the lever. (See Figure 8 and Figure 9 for layout).
16. Insert the other end to the corresponding 3 terminal connector and close the lever. (See Figure 8 and Figure 9 for layout).
17. Re-Install the Taillight.

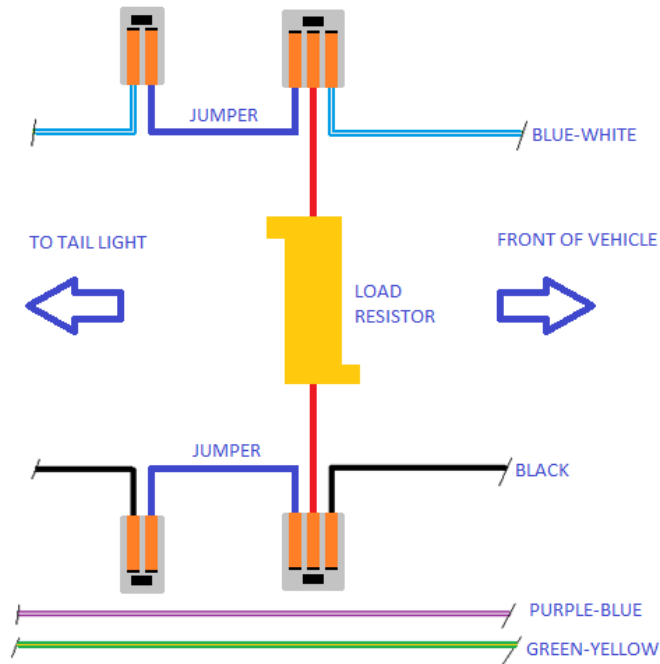


Figure 8: Wiring Diagram (Driver Side US/ Passenger Side Europe (Left side))

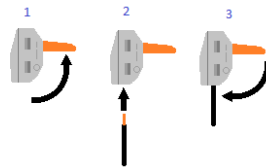


Figure 9 – Connector Lever

Passenger Side US/ Driver Side Europe (Right Side) Load Resistor

18. Peel back the protective wrap that cover the wires
19. Cut the **Black** and **Blue wire w/Purple stripe** (*Blue-Purple*) (sometimes this wire looks kind of green as it ages) wires leaving at least 2-3 inches on either side. This will ensure you have enough wire left to work with.
20. Strip the ends of the wires.
21. Insert the one end of the **Blue-Purple** wire into one of the 2 terminal connectors and close the lever. (See Figure 10 and Figure 9 for layout).
22. Insert the other end to the corresponding 3 terminal connector and close the lever. (See Figure 10 and Figure 9 for layout).
23. Insert the one end of the **Black** wire into one of the 2 terminal connectors and close the lever. (See Figure 10 and Figure 9 for layout).
24. Insert the other end to the corresponding 3 terminal connector and close the lever. (See Figure 10 and Figure 9 for layout).
25. Re-Install the Taillight.

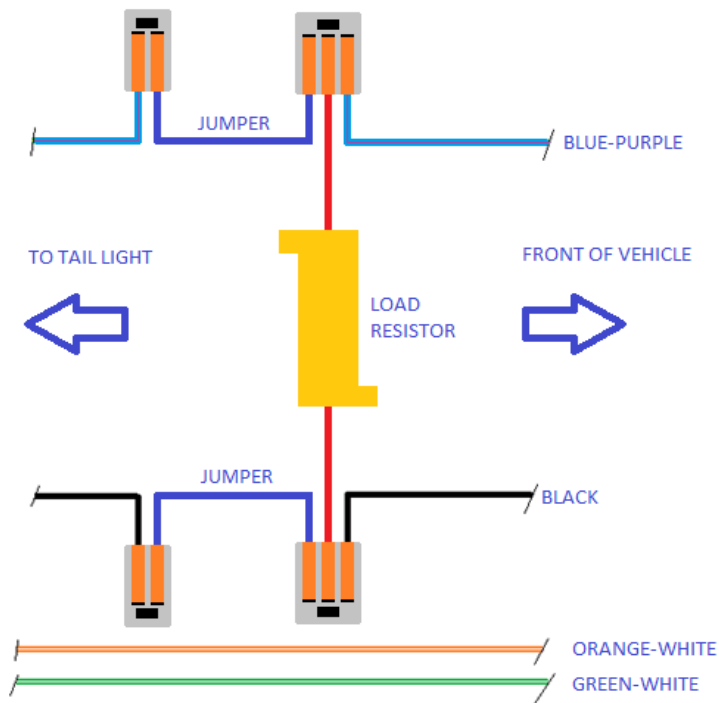


Figure 10: Wiring Diagram (Passenger Side US / Driver Side Europe (Right Side))

26. Test each of the turn signals (ignition must be on).
 - a. **⚠ Caution:** The resistor will get very hot quickly when in use and will burn you if you touch it and can melt plastic.
27. Once you confirm all is working mix equal parts of the Epoxy together.
28. Apply a generous amount to the bottom of the load resistor.
29. Secure the load resistor to a metal surface.
 - b. Use care to ensure that the resistor will not come into contact with anything made of plastic or the trunk liner. The resistor gets very hot under repeated use and will melt plastic.
 - c. Allow 12 hours for the epoxy to cure before use.

TIP: Use tape to hold the resistors in place while the epoxy sets. Don't forget to remove it before use though!

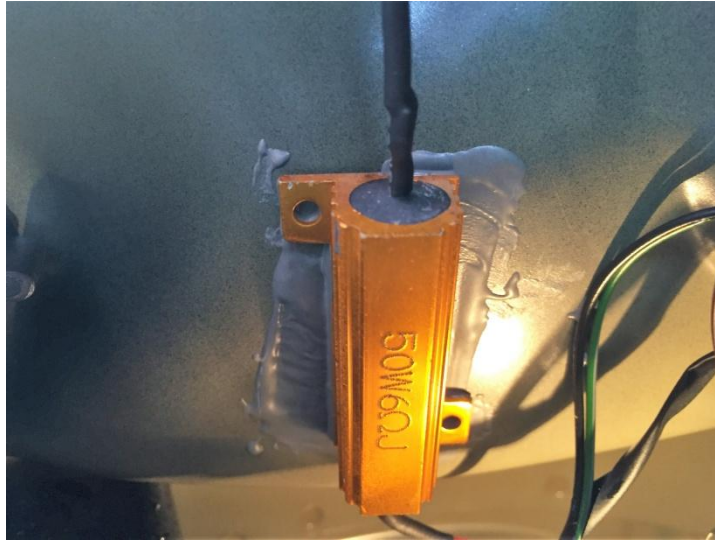


Figure 11: Epoxy Load Resistor

Troubleshooting

The turn signals light up but I still get an error code in one or both sides

The load resistor is likely connected to the wrong signal wire. Verify that it is connected to the correct wire. Remember that the turn signal wire is slightly thicker than the other colored wires.

Damaged bulb holder

In some cases the bulb holders may be damaged because of the issues with the incandescent bulb. Unfortunately you will need new ones for the kit to work properly. You can order the bulb holder online from a number of sites and they are readily available

Support

If you have questions or need any help during the installation please send submit your request through email. LightBarKit95@gmail.com

Damaged Taillight Housing

If the taillight housing contacts are damaged there are 2 options

1. Using a screwdriver gently try to bend the bulb contacts inside the taillight housing back into the correct position to make contact with the bulb holder
2. If option 1 does not work or if the damage is too severe. Contact Gary Stottler at www.saabled.com for taillight assembly repair options.