

Fog to Brake Light Conversion

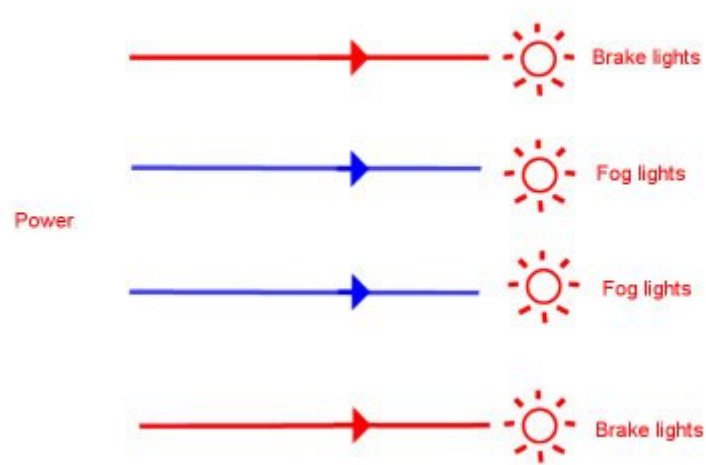
The following is the procedure to convert your rear fog lights into brake lights.



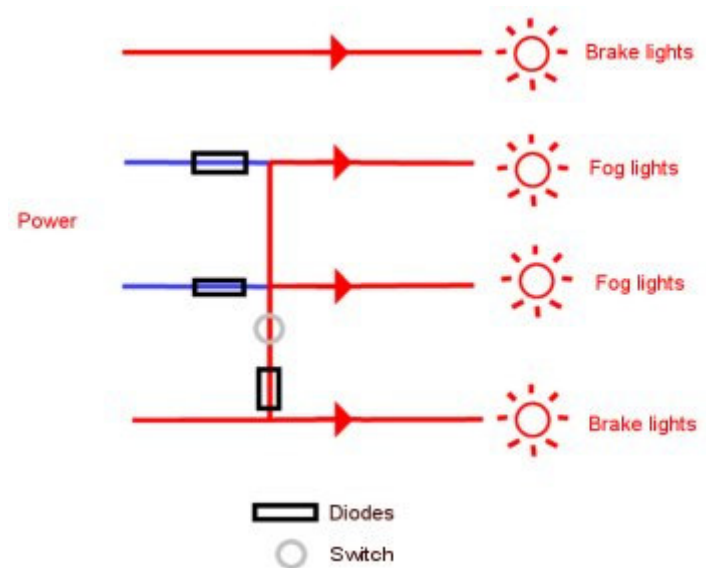
Parts Required:

- 3 x 3A Diodes (Jaycar stock code ZR1018 - '1N5408 3A 1000V Diode')
- 1 x Reel of automotive electrical wire (no, you do not need a whole reel, but wire always comes in handy anyway)
- 1 x Simple SPST switch (Jaycar stock code SK0975)
- Wire Strippers or something to strip/cut wires
- 1 x Flat head screwdriver
- 1 x Soldering iron and some tin solder
- 1 x Electrical tape

This is a basic wiring diagram of what we will be performed:



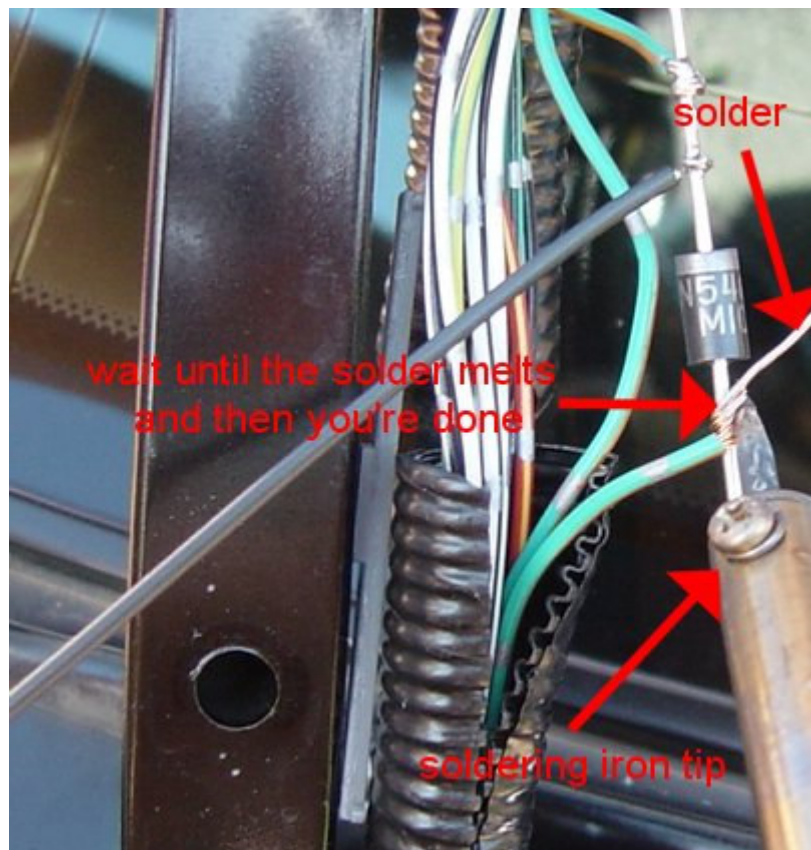
Normally each light is powered by its own power line. Hence the brake lights and fogs operate individually of each other.



But if we divert power from the brake lights to the fogs, then they will come on when the brake is pressed. The switch lets us disable the modification and return to normal functioning while the diodes ensure electricity does not flow in the opposite direction.

Step 1: Preparing the wiring

- Cut 3 lengths of automotive wire, each about 60-70cm long. They need to be long enough to allow for opening and closing of the boot lid.
- Strip approximately 2cm of the insulation from each end of all of the wires.



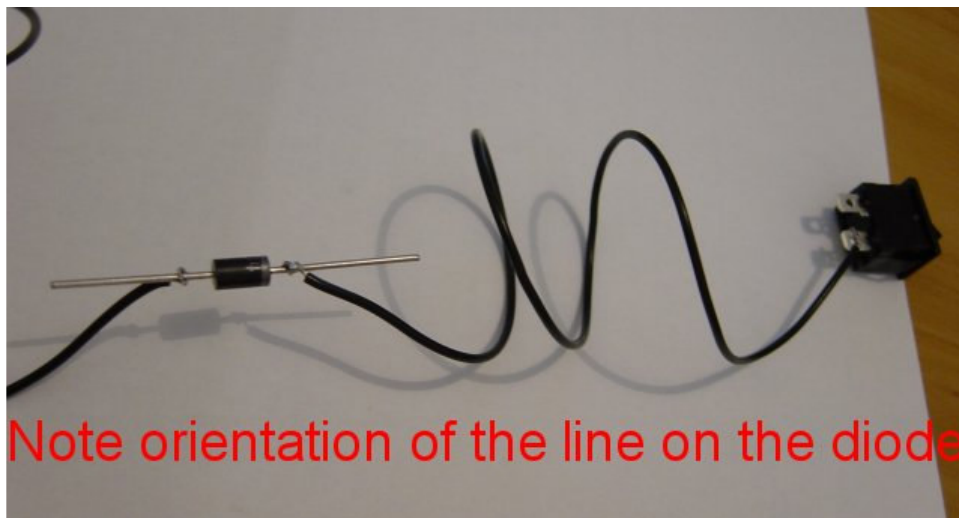
- Now you will need to solder the end of one wire onto one of the terminals of the switch.
- Grab the other two wires and solder one end of each wire onto the other terminal of the switch.

- Now we need to add some diodes. A diode acts like a one way valve for electricity flow. We need these to prevent the light bulb error indicator from appearing on the dash. If you look at the diode you will notice one end has a line. Electricity flows in the direction **towards** the line.



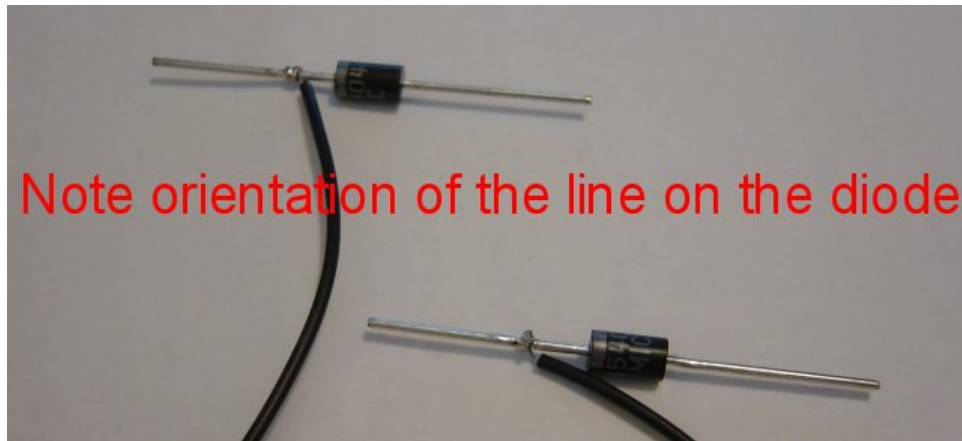
- First we will be working on the single wire attached to the switch. We need to add the diode mid way along this wire as shown. To do this, simply cut the wire in half, remove about 2cm of the insulation from the two resulting ends, and then solder these onto the arms of the diode.

Please note the orientation of the line on diode in relation to the switch.



- Now we need to add diodes to the two remaining wires. However these will be added to the ends of the wires. Solder the end of each wire onto a diode as shown below.

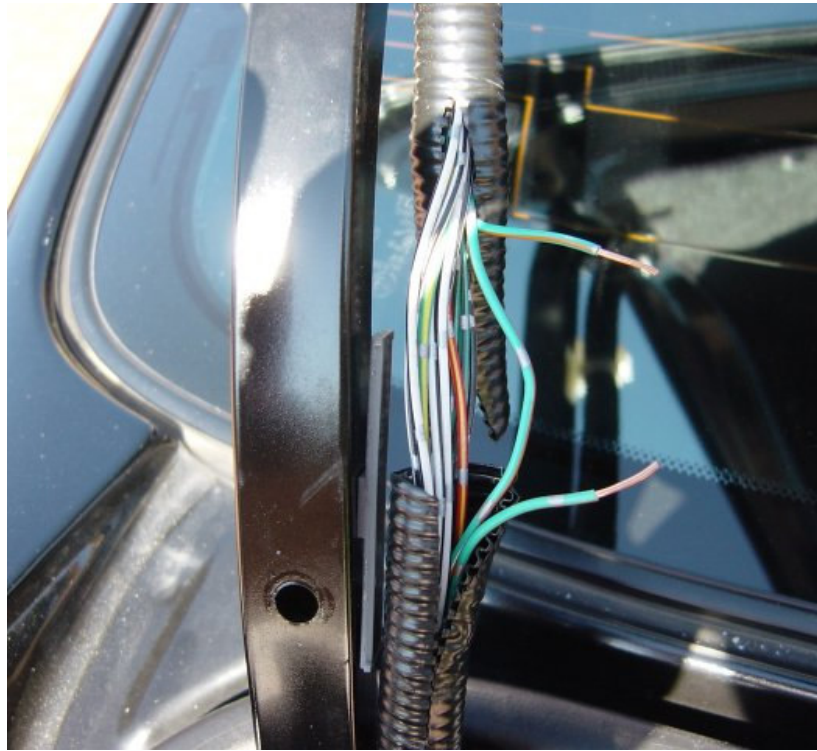
Again note the placement of the wire in relation to the line on the diode.



Step 2: Now its time to actually connect this to the car

- Open up the boot. On the left arm there is a plastic shield covering the underlying wires. To remove the shield, there are three plastic 'rivets'. Push in on the centres and then just pull them out. The shield will then pull easily away from the boot arm to reveal this.
- To get to the actual wires, use a blade knife to gently cut into the wiring loom and pull back the cover. You will need to open up at least 10cm to work with it easily.
- Find two wires of the same colour: **Green with a brown stripe and silver markings**. These wires deliver power to the left and right fog lights.

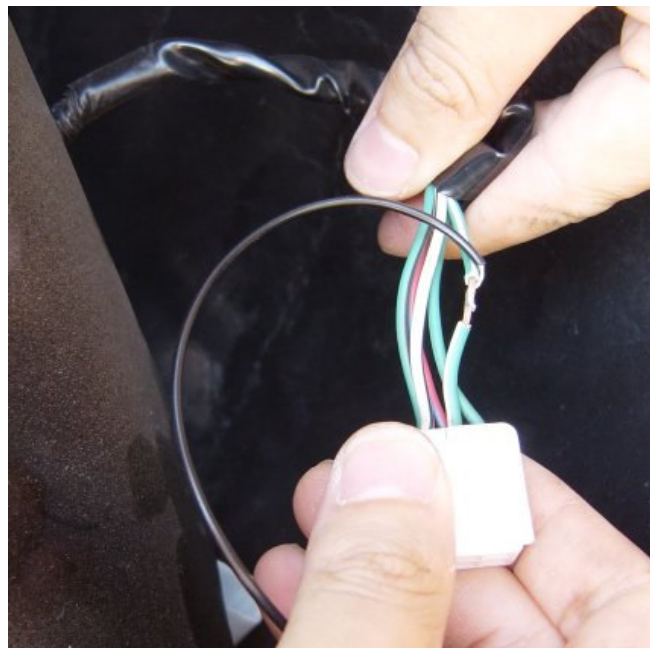
- Cut one of the wires and remove some of the insulation from each end to get this:



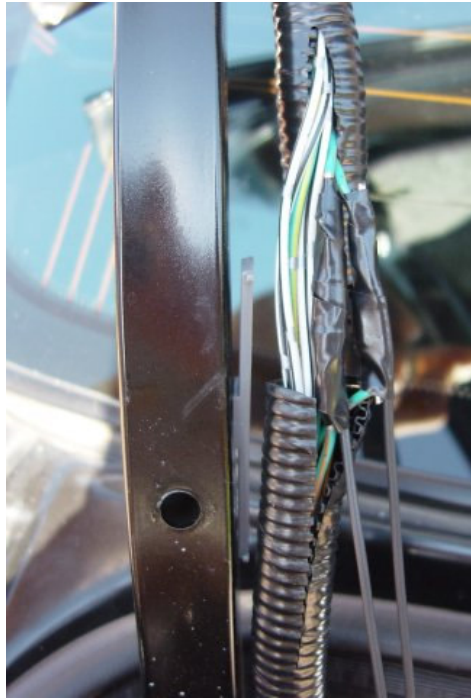
- Now grab one of the diodes that is connected to the dual wire and solder it to the wires as such. Note the orientation of the line on the diode!



- Repeat the above 2 steps for the other wire.
- Now we need to make the final connection to the brake light. To get to the wires, you need to remove a small portion of the boot liner. Use a flathead screwdriver to pop out the two plastic rivets and then simply pull the edge of the boot liner away. Look down behind the rear light and you should see the wiring loom.
- Disconnect the plug and cut some of the plastic sleeving away. Find the **green wire with white stripe** and cut away some of the insulation to reveal the bare wire underneath.
- Solder the last remaining wire so you end up with this:



- Now to test the setup plug the wiring loom back in and then press on the brake (obviously make sure the switch is set to the on position). The rear fogs should light up with the main brake lights. Now turn the switch off and the lights should not light up with the main brake lights. Finally, turn on the headlights and press the 'rear fog' button next to the coin holder and the fogs should stay on as per normal. If everything works, cover the bare wires with electrical tape and tidy everything up.



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