

Fitting & Troubleshooting Guide:

TAILLIGHTS

Generally speaking, fitting lights isn't that complicated; then again, anything's easy if you know how! This little guide provides some general tips for fitting various types of aftermarket lights, and also what to look for to try and resolve a problem if things don't go according to plan.

It won't make you an auto electrician overnight, nor does it claim to cover every possibility, but if you're not sure where to start, it will certainly give you some ideas to work with.

Before you begin, please note that working on a car's electrical system can be dangerous – both to you and the car. If you are in any doubt about your ability to follow any of the techniques detailed below – don't! Rather seek professional assistance. This leaflet is offered as a guide only, and we cannot accept any responsibility if something you attempt goes wrong.

Fitting tips:

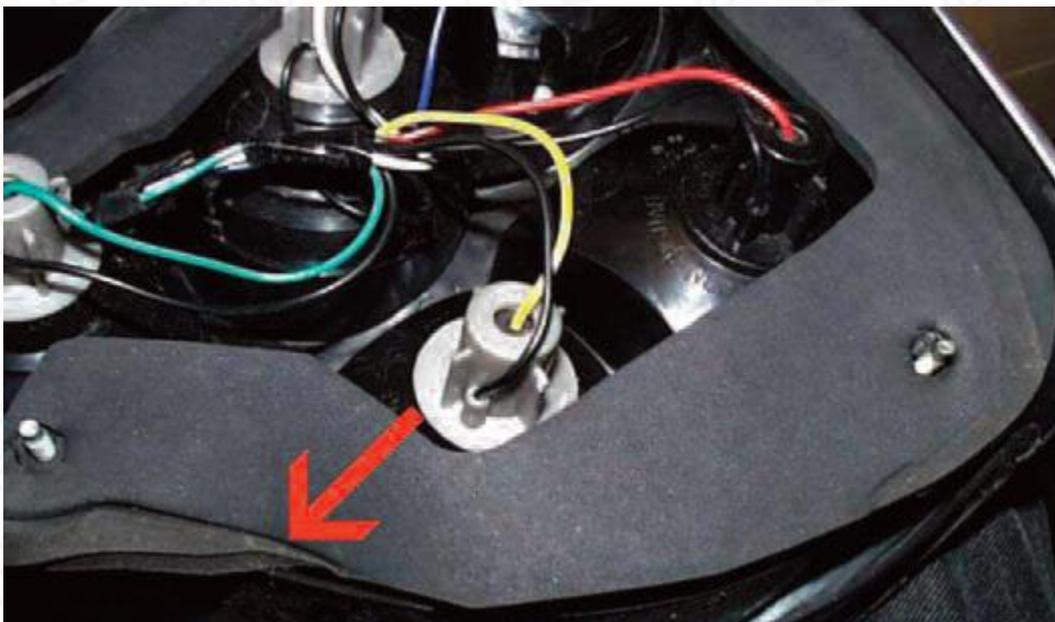
- It's useful to have an assistant hold the taillight in place, both when removing and installing, as it could otherwise fall and be damaged.
- Before tightening anything, make sure that the sealing gasket is correctly positioned and securely held in place.
- Make sure that no wires are trapped between the light and the bodywork.
- When doing up the mounting nuts or screws, always tighten them all to finger tightness before doing them up with a spanner. Sometimes it may be necessary to tighten one and loosen another to get the panel gaps even.
- Don't overtighten nuts or screws either, as this can lead to broken or stripped mountings – which are not covered under warranty either for obvious reasons.
- Most aftermarket taillights will not fit to exactly the same standard as the original equipment items in terms of the panel gaps between the light and the car body. If the difference

between the original and aftermarket lights is not more than 3 mm, this would be considered to be within specification.

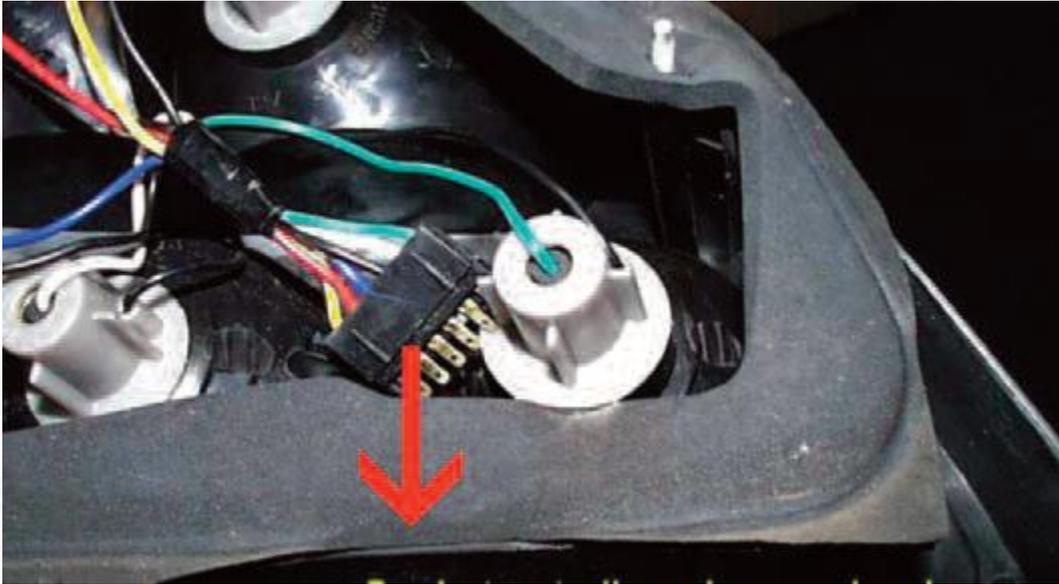
Problem Solving:

1. Leaking:

- If moisture is getting into the taillight, the first thing is to determine if there is actually a leak or if it's just condensation (see under general for an explanation of condensation).
- If water is getting into the car interior, remove the light unit and check that the sealing gasket has been fitted correctly. If the light unit is not fitted carefully, the gasket can bend or kink so that it no longer forms a proper seal. This can easily be determined by looking at the gasket – there should be a continuous groove all the way round the gasket from the plastic of the light unit pressing into it. If the groove runs off the edge of the gasket or disappears at any point, it is likely that it was not fitted correctly.
- It is also possible for gaskets to be left off completely when a light is fitted, or for the mounting nuts to be tightened insufficiently so that a proper seal is not achieved. None of the above issues would be covered by warranty.
- Some taillights have vents on the back to allow condensation to evaporate. They often have a U-shaped rubber pipe on them. If they are present, check that the open end of the pipe is facing sideways or downward, and not upward, as this could allow water to run into the unit.



Examples showing gaskets that were not correctly lined up when the taillight was fitted, as clearly indicated by the groove marks. This would have allowed water to leak past the gaskets into the car.



2. Lights do not work correctly:

- The first thing to check is that the wiring looms supplied with the lights have not been swapped over by mistake, as they are usually handed and must be fitted to the correct side. They will be marked L & R.



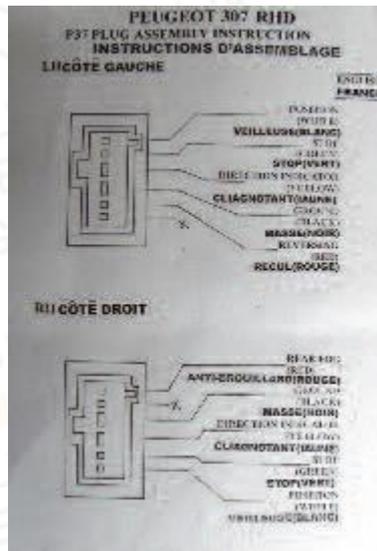
Wiring looms will usually be marked to show which side they go on.

- Next, check that the individual bulb holders on the looms have been fitted to the correct sockets on the back of the lights. The wiring colour is usually marked on the back of the light next to each socket.
- Finally, check that the correct bulbs have been fitted, and that there is no twin filament bulb fitted to a holder for a single filament bulb or vice-versa.



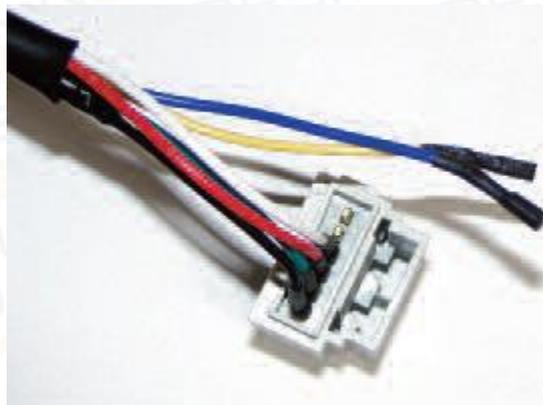
Two into one doesn't go - make sure the correct bulbs are fitted to the appropriate sockets

- Also check the wiring configuration of the looms against the wiring diagram which comes with many of the taillights, in case the looms have been incorrectly assembled.



Many taillights will have a wiring diagram in the box

- On looms where spade terminals are used between the wiring and connector block, the terminals can simply be pulled off and connected back in the right configuration.



Wiring loom with spade terminals on connector block

- Check the harnesses & bulb holders for loose wires or poor contacts.



Broken or loose wires can result in lights not working properly

- Always check the fuses as well – most cars have separate circuits for left - and right hand sides, so you cannot assume that because the left-hand brake light works OK (for instance), a blown fuse can't be the cause of the right-hand one not working. There will almost always be separate fuses for each side for safety reasons.

3. Fuses blow:

- This usually means that there is a dead short somewhere. It can be caused by a faulty wiring loom, a short inside a bulb holder, or having the wrong bulb fitted (force a twin filament bulb into a holder intended for a single filament version and you will get a convincing demonstration of a dead short).
- To troubleshoot, check bulbs are fitted correctly.
- If the problem doesn't lie there, replace the blown fuse/s, and connect the loom up to car's wiring but do not install any bulbs. Then install the bulbs one at a time, checking that they work properly after each one – for example, insert the left-hand indicator bulb, check that left-hand indicator works; if it does, insert the right-hand indicator bulb, and so on until you get to the function that's causing the problem. Then you know which circuit is at fault.

4. Warning lights show on dashboard after lights have been fitted:

- This usually only happens in the case of LED taillights. It can sometimes be solved by having the vehicles on board electronic control unit reprogrammed by a dealer; in other

cases this may not be possible, and the lights will have to be returned to the dealer for inspection.

GENERAL INFORMATION

- Know your left from your right: References to left-hand & right-hand are as viewed by someone sitting in the driver's seat.
- What exactly IS condensation?

Condensation is caused by water vapour in the air. The moisture on the windows inside your house in winter is condensation – and when that happens, you don't start looking for leaks in your windows do you? (You'll be a long time if you do). In exactly the same way, condensation inside a light unit is hardly ever caused by a leak.

The basic scientific explanation is this: There is always some moisture in the air, and warm air can hold more moisture than cold air. When the air inside the light unit – which is warmed by the heat from the bulbs – touches the inside of the lens (which is at a lower temperature because it is in contact with the colder air outside), the layer of air against the inside of the lens cools down as well, and as a result it can no longer retain the moisture it is holding, which is deposited on the inside of the lens to form condensation.

The condensation will only disappear once the air inside the light unit warms up enough to absorb the moisture again, and in winter this can take some time.

Condensation is NOT indicative of a fault with a light unit, and as such it isn't accepted as a reason for a warranty return.

Condensation occurs in original equipment lights as well, but aftermarket lights often have clear lenses without any patterns, so the condensation is more obvious. On a patterned original equipment lens it might not be visible at all unless one looks closely.

While the above information is offered in good faith and is believed to be correct, Design911 cannot accept any responsibility for any consequences, howsoever caused, resulting from the application of any of the information detailed in this leaflet.