

# X308 Jaguar Sovereign

## Instrument Cluster Bulb Replacement Guide

- Complete Guide for the replacement of 8 External Rear Inc. Bulbs and 2 Internal Inc. Bulbs -



*The final outcome*

My car had the speedometer side of the dash in complete darkness, obviously the bulb needed to be replaced. I also decided to replace the clock bulb above the centre air vents. As the drivers side wood veneer would need to come off to replace the clock bulb, I decided to replace the clock bulb also. The drawback is however to gain access to that said clock bulb, the passenger side veneer also needs to be removed, but only the inner side towards the clock.

I considered using LED bulbs, however there are too many problems with light dispersion and colour, so I replaced all bulbs with normal Incandescent bulbs.

All bulbs are clear, non tinted.

**IMPORTANT: disconnect negative battery terminal at all times when testing or working on these electrical areas, especially as the airbags are in front of you when you are working.**

### **WHERE ARE THE BULBS!**

It would seem that a "clown" was in charge of designing the instrument cluster at FORD. It is indeed a Ford part. There are 8 Incandescent bulbs on the external rear end of the instrument cluster. However there are a further 2 incandescent bulbs INSIDE the cluster on the actual circuit board. These 2 bulbs are socketed There are 13 LED bulbs on the said circuit board, which hopefully never need replacement.

Why one would design the incandescent bulbs to be placed internally on the inaccessible circuit, I cannot fathom. However I will put it down to an incompetent FORD engineer, and not Jaguar. (im Biased!)

**Firstly:** Place key in ignition, do not turn it at all. Then take steering wheel all the way down and all the way towards the rear of the car with the electronic knob at the side of the wheel column. Then with the key still in the ignition, remove the negative cable from the battery.

You can now safely work.

To remove the veneer on the drivers side, grab the metal backing which is all around the reverse side of the veneer at the 2 places shown in the next 2 photos. However first a photo of the reverse side itself so you can see that its all metal on the back



Grab the metal portion of the back of the veneer as shown in the next 2 photos with 2 fingers at the same time and pull it out with a good tug. It will pop out.



With veneer removed, you then must remove the trip computer and fog light switches.



Insert a small screw driver at the 12 o'clock position on each and press down on the flange, it will then release. Disconnect the cables to them both. Remove the 4 screws that secure this entire black plastic fascia. One each located in the voids left behind the trip computer and fog light switches, the other 2 in the top left and right corners.



Note when replacing these screws, secure the screws on the phillips head with some tape, otherwise you will spend 1 hour changing the screw near the firewall.



You can now remove this entire black plastic fascia surround (no photo sorry), it will reveal the actual instrument cluster.

The following picture shows the instrument cluster without the plastic surround. This was taken after in the testing phase, with every light working perfectly. To test your work later on remember to connect the foglight switch and the trip computer switch and then connect the battery terminal.

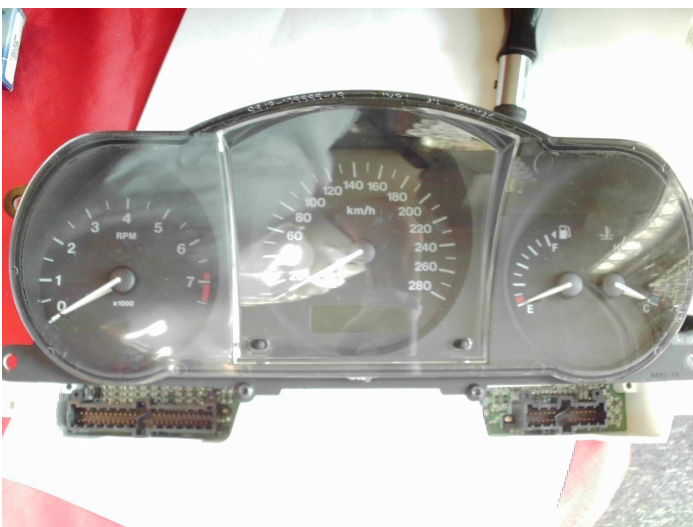




There are 2 large PIN connectors that need to be disconnected from the instrument cluster in order to get it out. You can see in the next photos that there are top and bottom tabs to press in order to release them, the bottom tab on each is not easily seen from the multitude of wires. See photo of the disconnected connectors below.



Once they are disconnected you can lift the instrument cluster out on your work bench.



The 8 incandescent bulbs , 4 big and 4 small are located on the rear in twist sockets.



The socketed bulbs may be difficult to remove with fingers, best use pliers, twist less than 45 degrees.

The larger ones = 4 x wedge 12v T10mm (cant recall wattage, apologies)

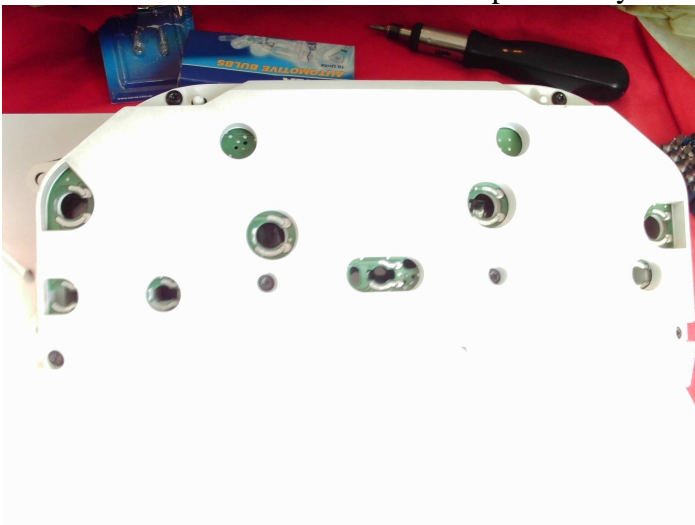
The smaller ones 4 x wedge 12v 1.7w T6.5mm

The bulbs pull out from the sockets.

Clean the contact areas on the socket and circuit board with contact cleaner and reinstall if you wish to stop here. BUT as i mentioned there are 2 more incandescent bulbs inside the circuit board. These 2 bulbs control the GREEN side light icon on the instrument cluster and the BLUE high beam light icon.

So if like mine, the side lights and high beam lights function on the car, BUT the associated green or blue icons do not show up on the dash, you must replace the bulbs inside the circuit board.

Also note that these 2 bulbs on the circuit board were functioning properly on my car, but the motions of extracting the instrument cluster actually broke them, they are fragile. So i had to replace them. You may find these 2 bulbs do not function (green icon and Blue icon) if you reinstall the instrument cluster at this point. May as well replace them while you here.

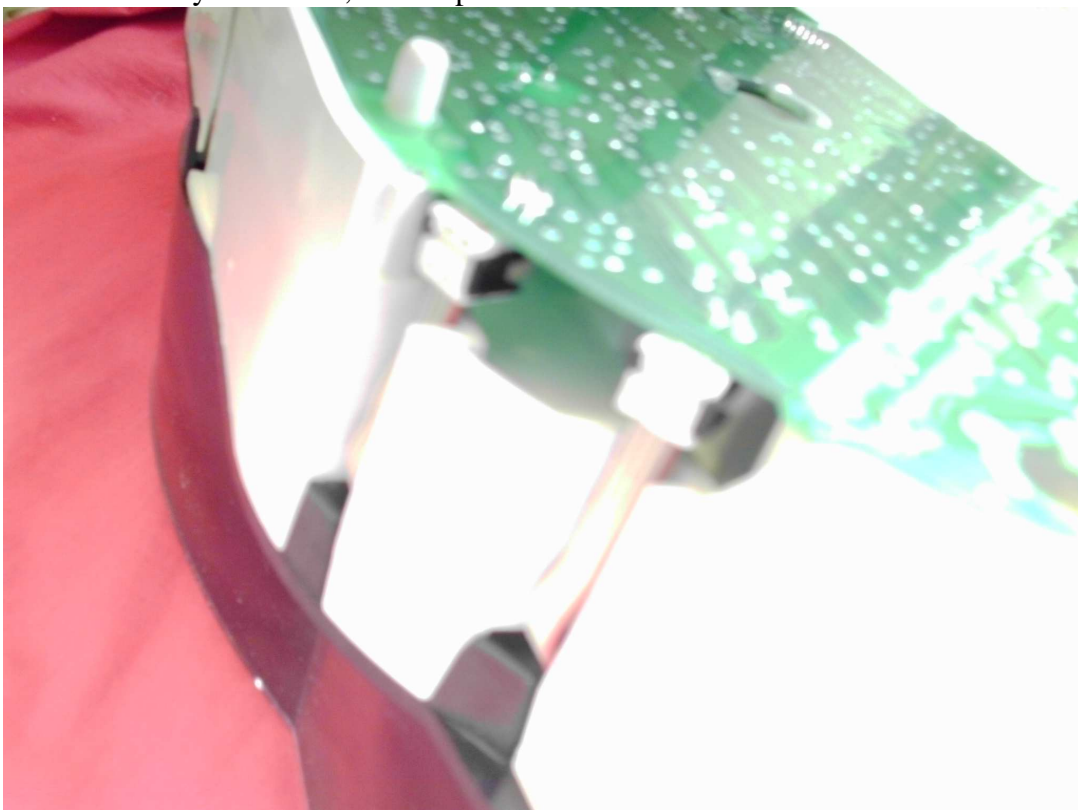


### **To get to the circuit board:**

Remove the bulb sockets as shown above (anti clockwise twist less than 45 degrees) , and then the 4 black Torx screws on the perimeter of the white casing. Lift the white casing off to reveal the back of the circuit board, BUT do not remove the circuit board, it is attached with connectors.



There are 4 white cable connectors along the top of the perimeter of the circuit board and a RED Pin connector at the centre base.  
These are tricky to remove, but simple.

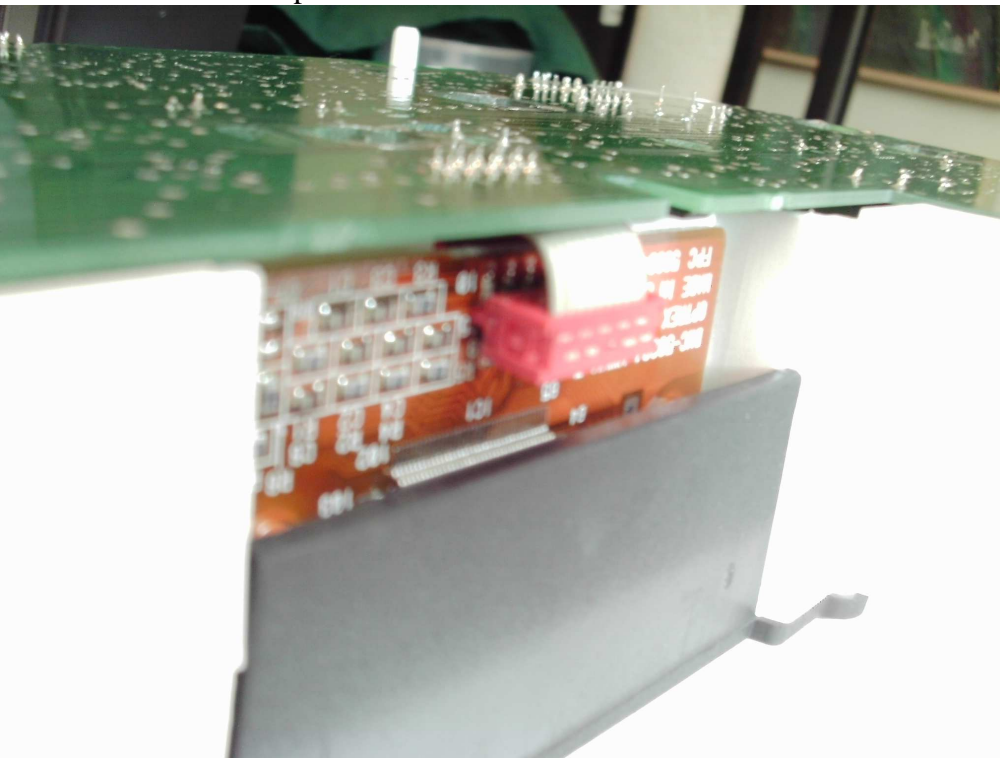


The white cable connectors shown above pull straight out, but do not pull on the black portion, only on the white, see below how they disconnect. They disconnect by pulling the white plastic connector toward the camera position in the photo below.



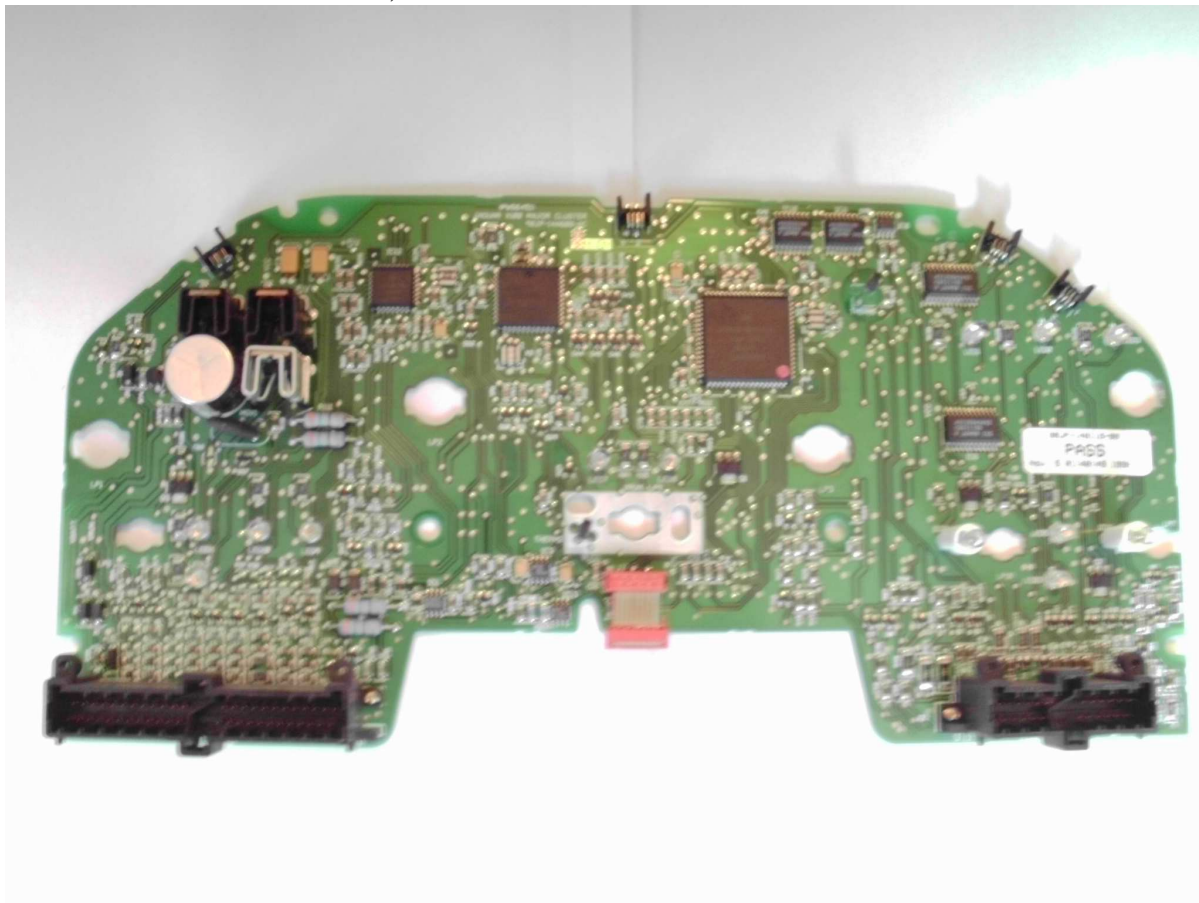


Then there is the RED pin connector at base.

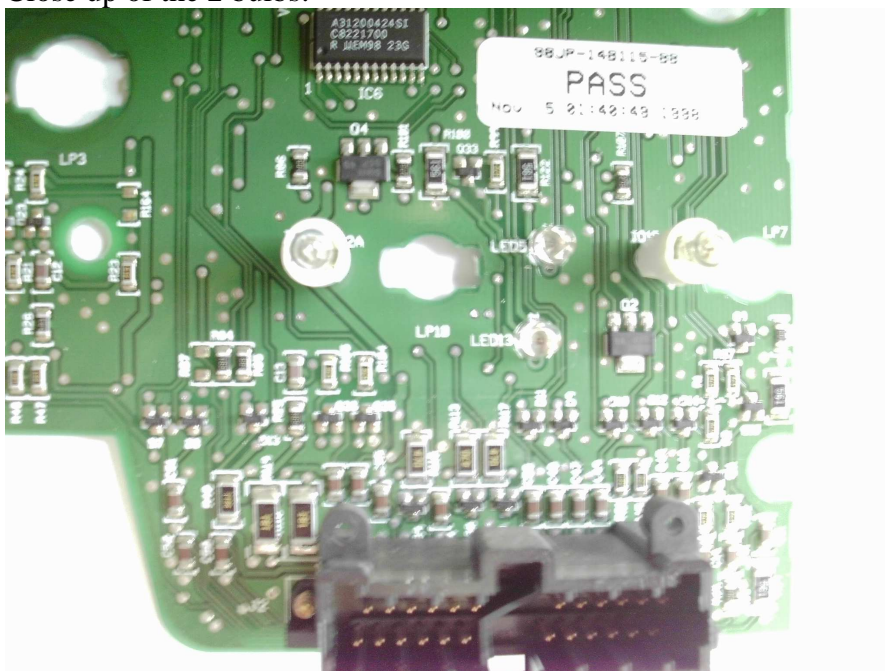


To remove this just pull it straight out, or better , wiggle it out slowly. There is NO clip on the side that is holding it in or anything, despite it looking that way.

You can now lift the circuit board out, lay it down on a clean piece of paper , note the 2 incandescent bulbs that pull straight out of the sockets on the right hand side below, all other bulbs are soldered LED, no need to touch those.



Close up of the 2 bulbs:



Pull them straight out and replace with Wedge 12v 1.2w T-5mm.

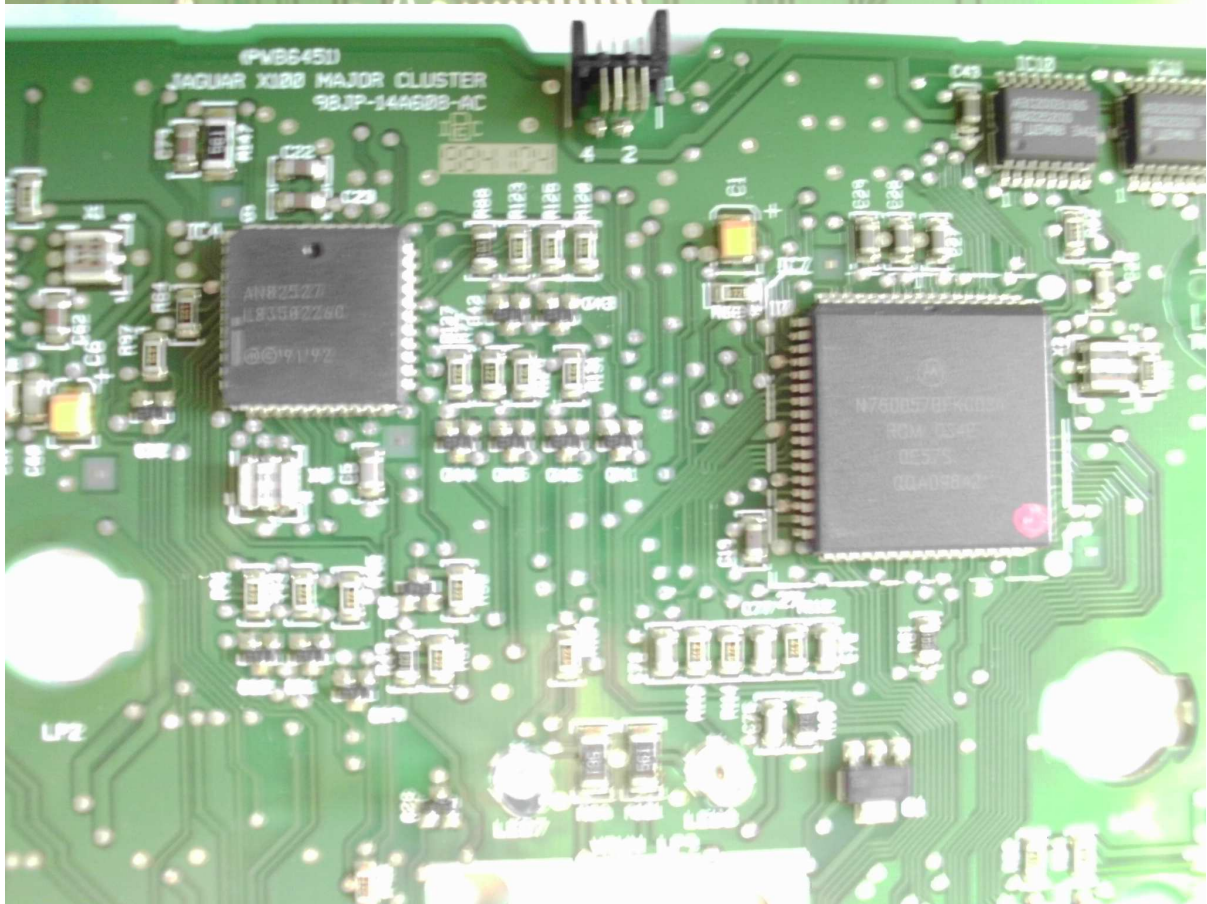
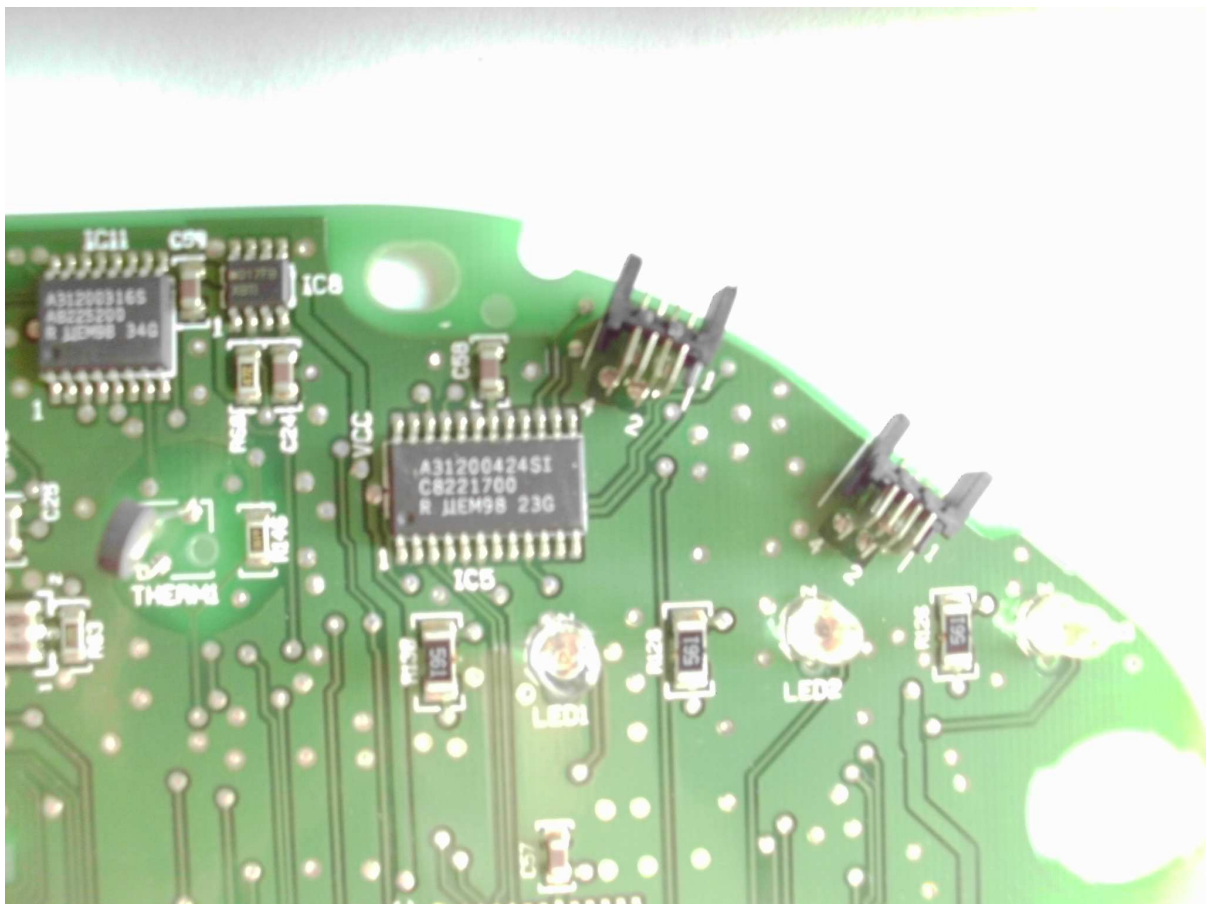
When replacing these bulbs, best clean them with contact cleaner and where disposable rubber gloves to avoid finger oils on the bulbs. This way you wont have to do this procedure



again for a long time as oils on bulbs tend to unevenly disperse the heat of the bulb, leading to premature failure.

Clean any dirt or dusts on the circuit board with electrical contact cleaner before reassembly.

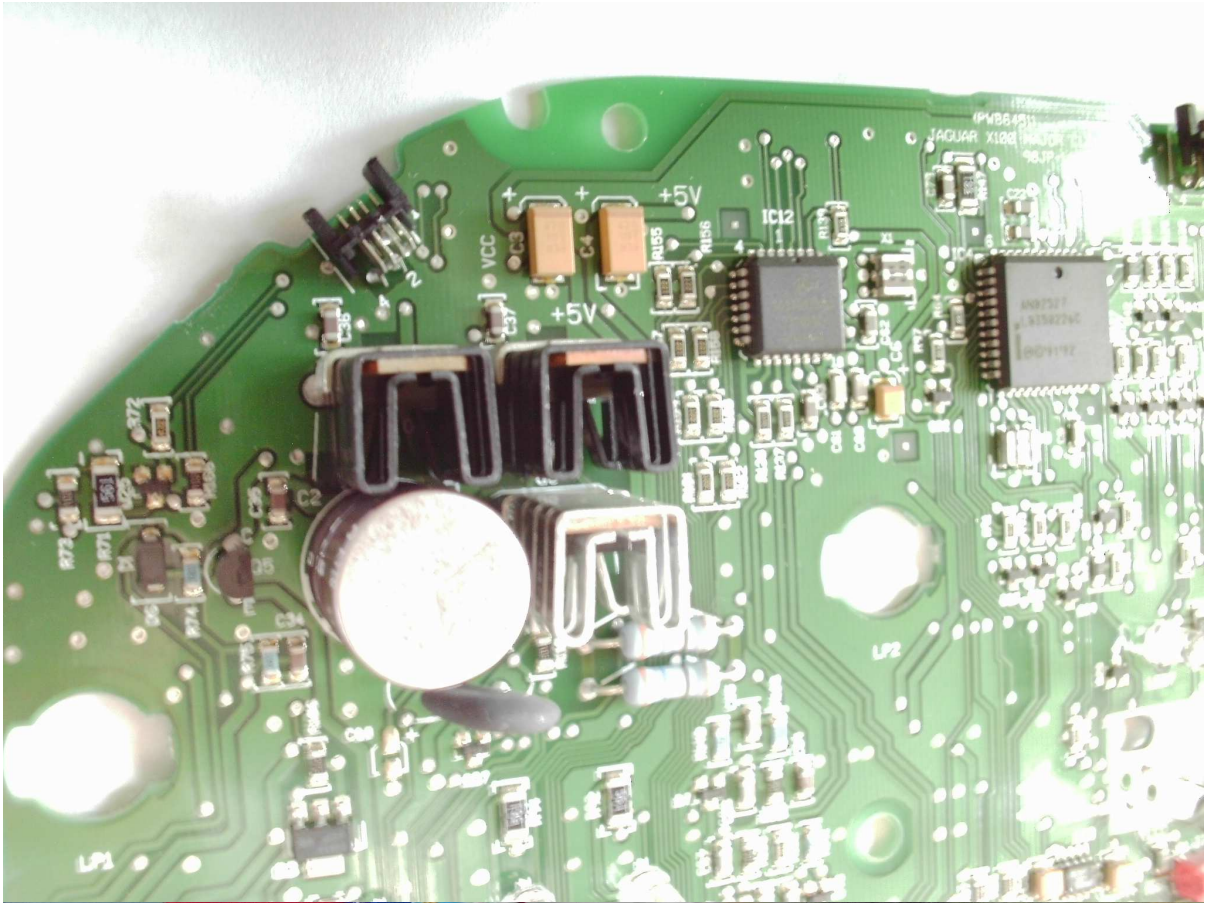
The following includes a few photos of the circuit board in case someone wishes to reference it. How often do you get to see it!











Heres the final moment with everything reassembled, including the dash veneer. Brilliant.





Thats one part done, to get to the clock bulb, you must rip out the centre clock wood veneer AND the clock side of the passenger wood veneer.  
I dont have complete picture for this as i created this pdf half way through this operation.

The drivers side wood veneer must be removed first.  
The clock veneer panel lifts off very easy, just grab it on the underside on the metal backing plate in the corner indicated below. Pull it out.



Then the toughest of all is the passenger side wood veneer. After the clock veneer has been removed, you should insert a large metal screwdriver bent at 90 degrees, say 3 cm from its end under the passenger wood veneer and give it a yank ( I can here you gasp!!!) and insert it in the corner indicated below. Be warned that it is very hard to remove this, pressure is required. I have the centre clock wood veneer reinstalled in the photo below but it must be removed to gain access.

I used a Map Pro propane torch to heat the screw driver and bend it, you may have something similar.





The portion indicated in the above photo is where the large retaining flange is located behind the passenger wood veneer (insert bent screw driver on the underside, the clock veneer should have been removed unlike the picture above), there is another retaining flange in the corner directly above but it is not tight in that corner.

You will note that the clock bulb is in the rear of the clock itself, and that the clock is behind the plastic air vent fascia. This air vent fascia protrudes just under the passenger side wood veneer.

There are 4 torx screws that secure this plastic air vent fascia, once removed the entire unit can be lifted out with only the right hand side of the passenger wood veneer (in photo show above, LH drive car reverse).

You can then replace the bulb which is the smallest of all the bulbs we dealt with here. It is a single unit, bulb AND socket combined. After disconnecting the electrical connector to the clock, just twist the socket out, again anti clockwise. The bulb socket arrangement is found easily at your local auto store.

My thanks to Steve Klonsky for providing input on the circuit board bulbs.

This complete bulb replacement is not a difficult procedure but there are undocumented areas in this repair, hopefully this pdf will now help others, and give a more **luminescent** Jaguar experience.

**Best regards**  
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