BBC Micro Power Supply Repair Guide

A simple guide to replacing the 3 main capacitors in the BBC Micro power supply

A free guide supplied to CoolNovelties.co.uk customers to assist in installing the replacement capacitor kit.
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THIS REPAIR INVOLVES REPLACING COMPONENTS WITHIN A 240v MAINS POWER SUPPLY AND SHOULD ONLY BE ATTEMPTED BY QUALIFIED PERSONNEL OR THOSE COMPETENT TO COMPLETE SUCH A PROCEDURE

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Included in the Kit

Capacitor [C1] (0.01uF/10nF)

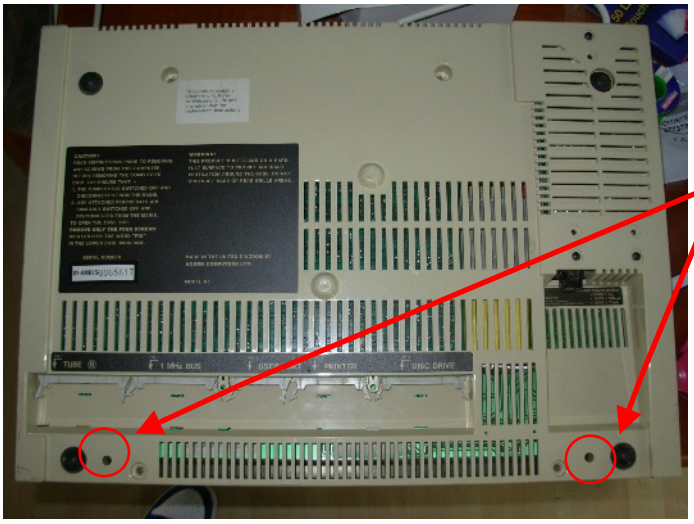
Capacitor [C2] (0.1uF/100nF)

Capacitor [C9]

Cable Ties x5

You will also need a soldering iron, solder, de-soldering equipment, Philips Screwdriver, flat bladed screwdriver, cutters and a large clean flat working area.

Step 1: Removing the Case



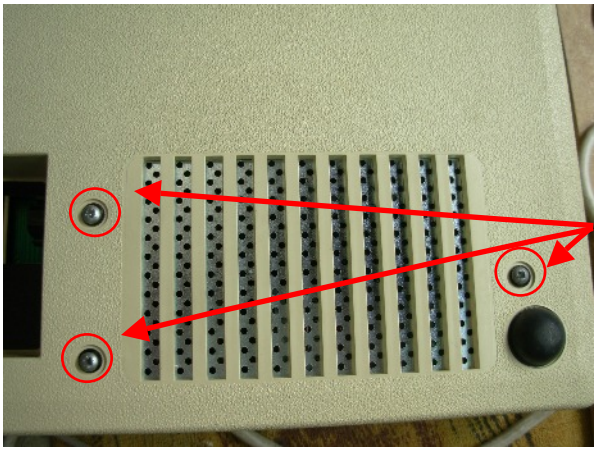
1. Turn the BBC Micro over so that the keyboard is now face down on the table.

2. Remove the 2 screws from the bottom of the case as shown in the photo (left)

3. Now remove the 2 screws from the back panel of the BBC Micro as shown

4. The top lid can now be carefully removed and put in a safe place

Step 2: Removing the Power Supply

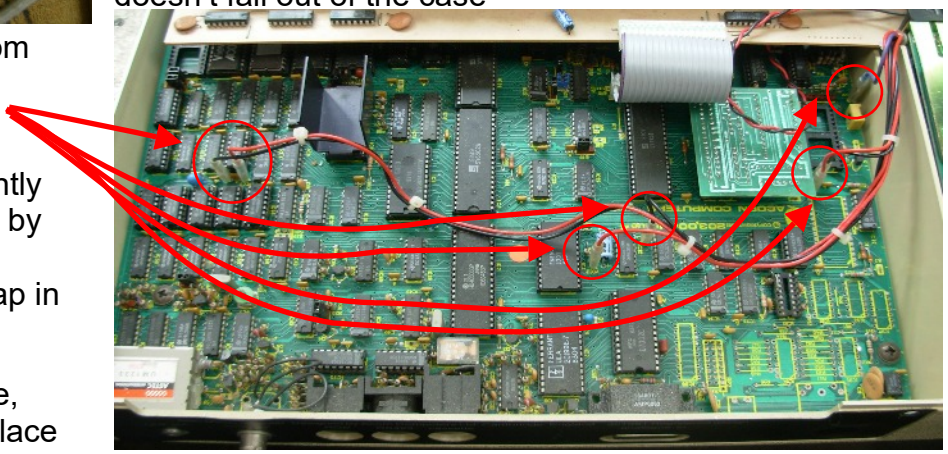


1. Turn the BBC Micro back over so the underneath is now facing upwards.

2. Locate the 3 threaded screws as shown in the picture around the vented area of the case

3. Carefully remove the screws paying attention to not lose the washers fitted underneath the heads

4. Very carefully turn the BBC micro over, gently holding the power supply whilst doing so to ensure it doesn't fall out of the case



5. Remove the spade connectors from the locations shown. There are 7 connectors to remove in total.

6. The power supply can now be gently removed from its location in the case by lifting upwards, whilst guiding the auxiliary power socket through the gap in the case.

7. The whole unit should now be free, the BBC Micro can be put in a safe place

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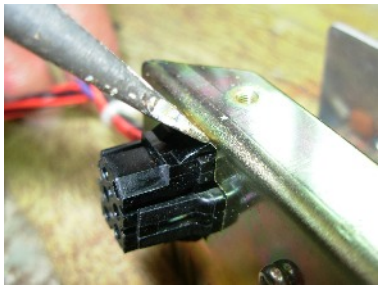
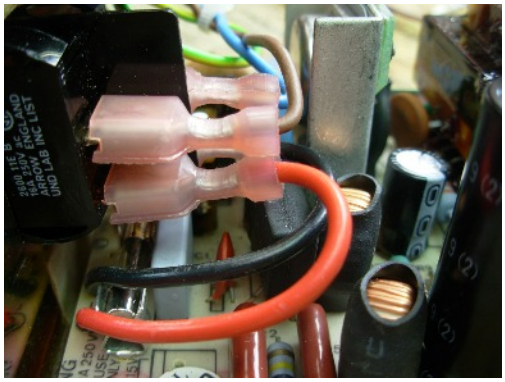
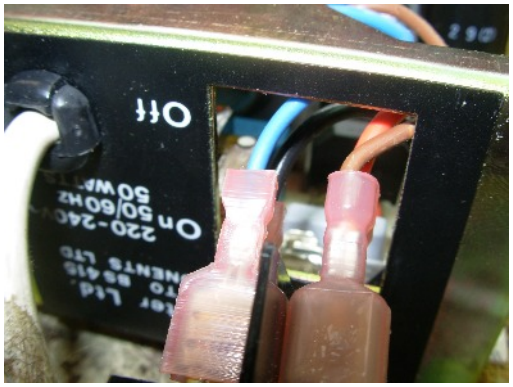
Step 3: Removing the Power Supply from the metal casing

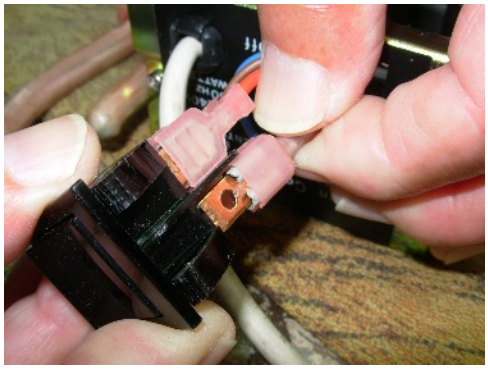


1. Remove the auxiliary power socket from the case by gently pressing down on the plastic locating tabs with a large flat bladed screwdriver

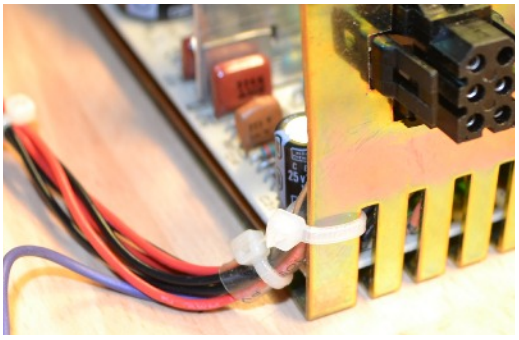
2. Remove the power switch by squeezing the locating lugs with a flat bladed screwdriver and carefully push out the switch.



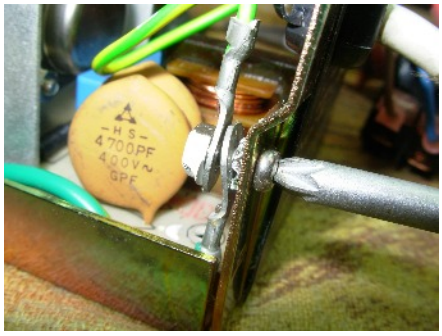




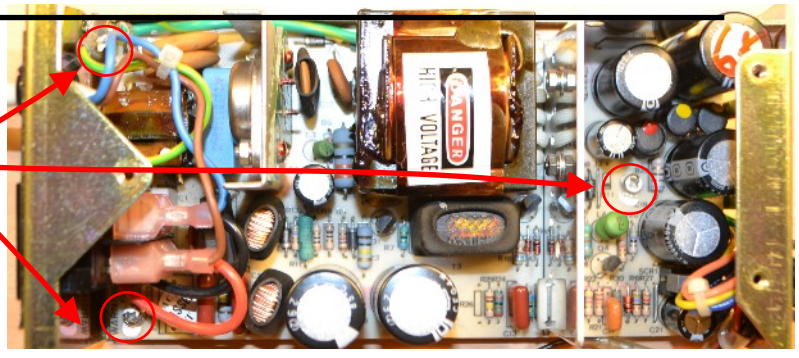
2. Remove the spade connectors from the back of the mains power switch by pulling firmly



3. Carefully cut the cable tie holding the low voltage power wires to the metal casing



4. Unscrew the clamps holding the two earth wires from either end of the casing. Use care not to lose the screws, nuts and shake-proof washers.



5. Unscrew the 3 threaded fixing screws, taking care to remove the washers.

6. The board assembly can now be removed from the metal casing.

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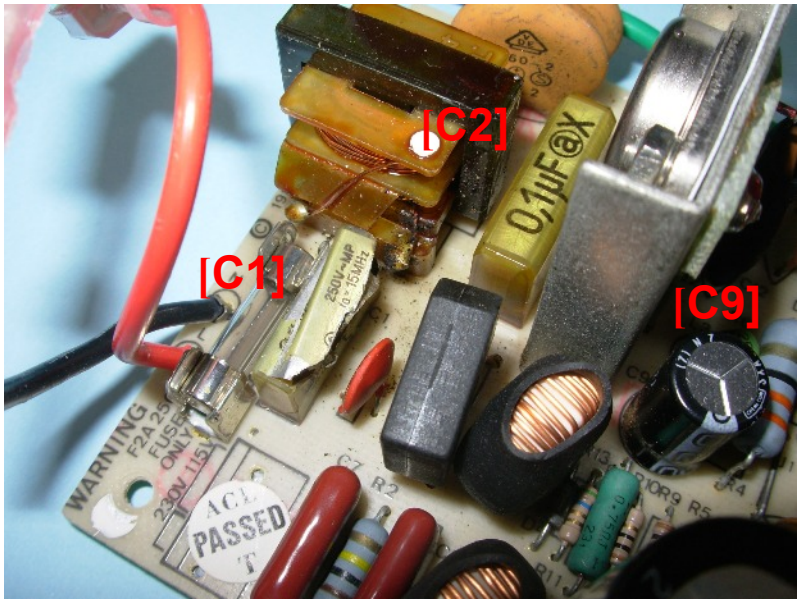
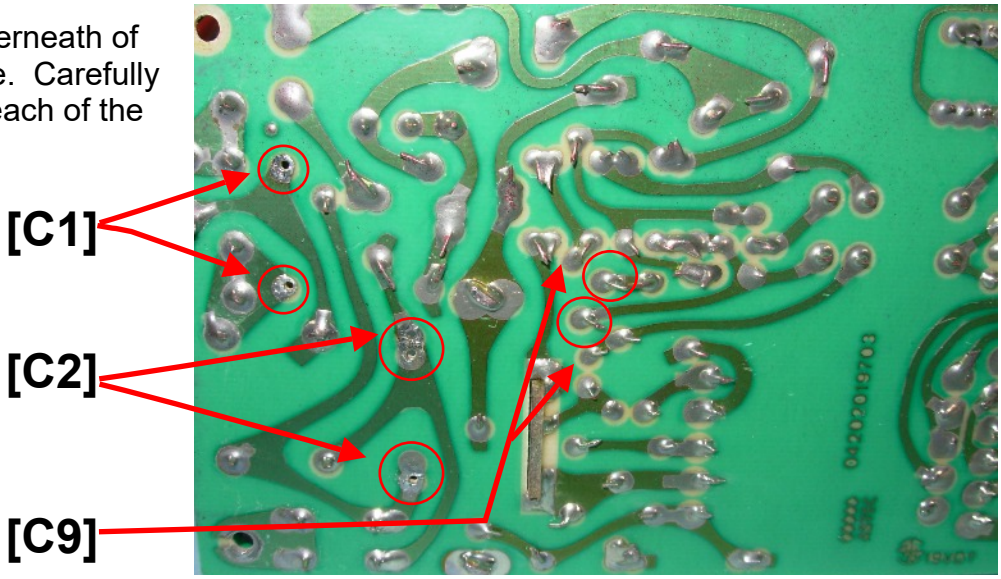
Step 4: Replacing the Capacitors



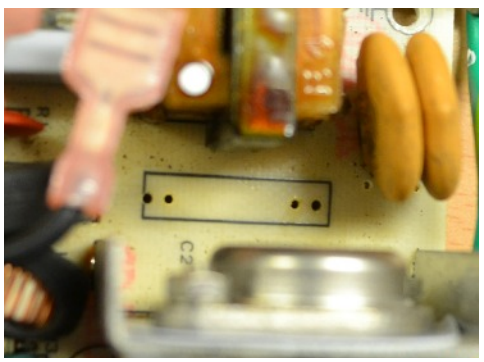
1. This image shows the location of the 3 capacitors that are to be replaced with our kit. On our BBC Micro, capacitor **[C1]** had completely blown - this can be clearly seen in the picture (left).

2. The locations on the underneath of the board are as shown here. Carefully de-solder the capacitors at each of the locations.



3. Start by installing the 220uF 25V capacitor **[C9]**. The replacement is physically smaller than the original, but of a higher specification. The image (left) shows the replacement capacitor **[C9]** installed and soldered in place.

4. Next install the 100nF (0.1uF) X2 capacitor **[C2]** into the board. This component location actually has 2 sets of holes - we are going to use the inner holes as the replacement is physically shorter than the original. This capacitor is non-polarised and can be fitted either way round.



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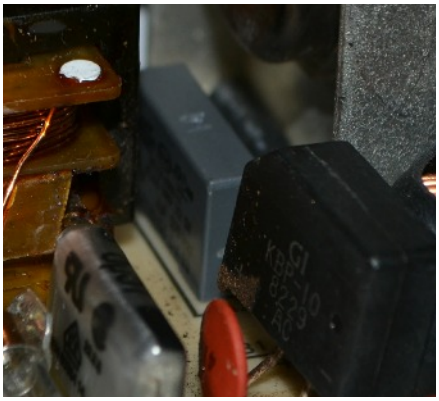
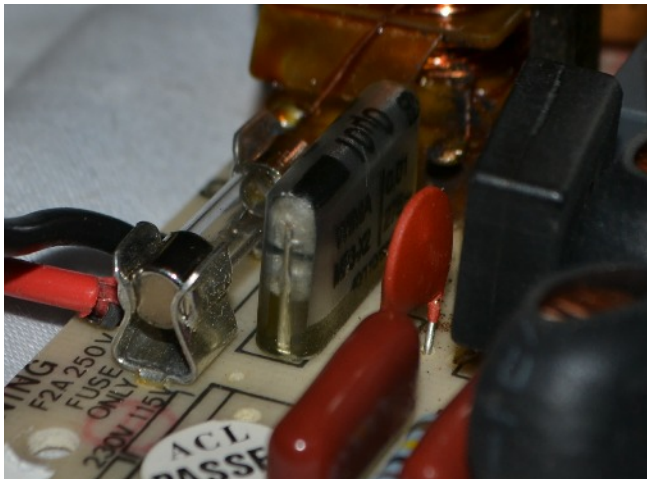
Step 4: Replacing the Capacitors *cont.*

5. This image shows the replacement capacitor **[C2]** soldered in place





6. Finally install the 10nF (0.01uF) X2 capacitor **[C1]** into the location shown (left).

7. Check all solder joints are clean, the components are sat straight and the legs have been snipped flush with the board. Your board should now look like the photo (right)

8. It's a good idea to give the whole board a last visual inspection making sure there are no other visible faults, loose wires, bad solder joints etc. that would need to be rectified before we continue to reinstall the power supply back into the BBC Micro.

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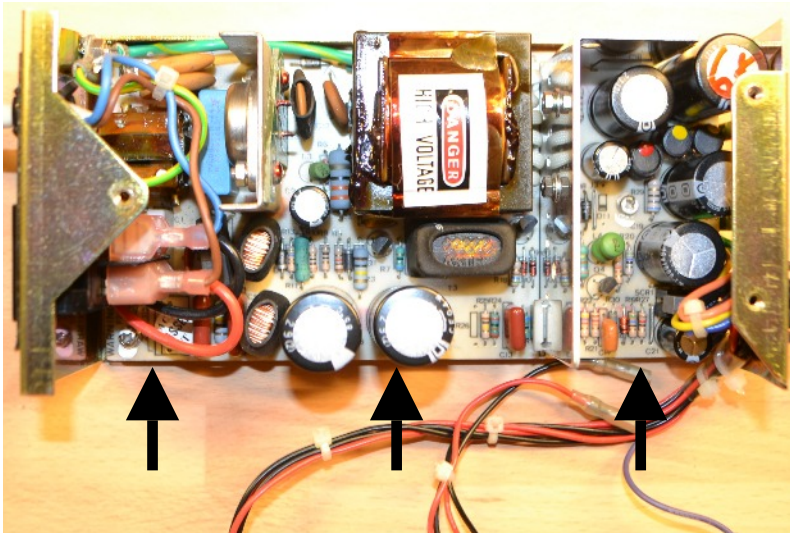
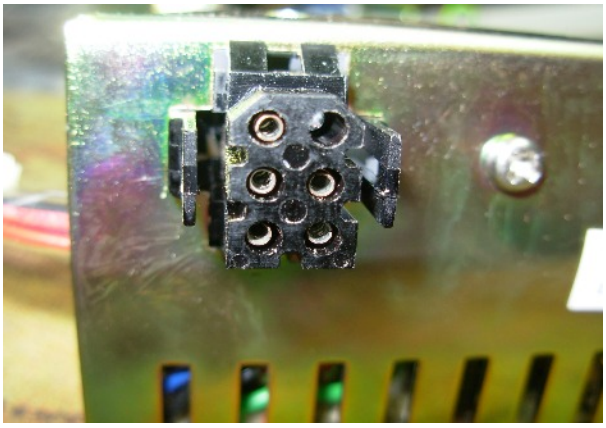
Step 5: Re-assembling

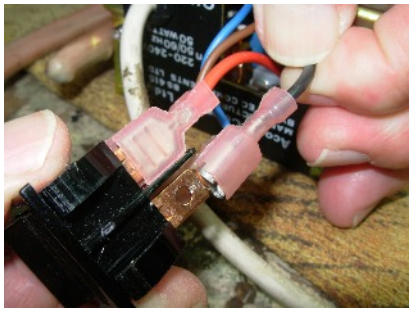
1. Slide the circuit board back carefully into the metal housing in the direction shown in the picture. It will only slide in one way as there is a lip down one edge.

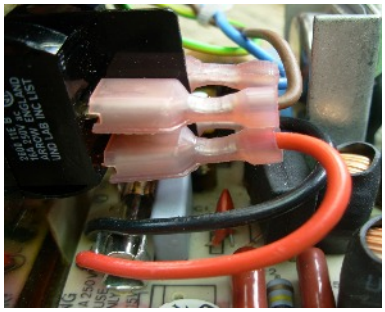


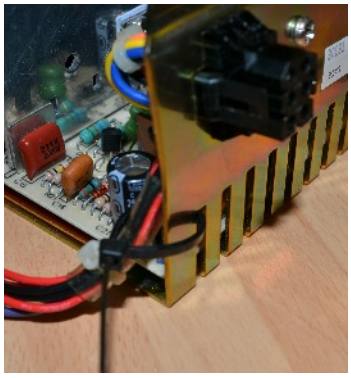


2. Push the auxiliary power socket back into the hole in the casing, taking note that the sloped edges are at the top as shown in the photo (left).

3. Re-attach the spade connectors to the mains power switch. Note the correct locations of the wires and the orientation of the switch when re-fitted - shown in the photos (right)







4. Using the included cable ties, secure the wires in the locations shown in the photos (left). Snip off the excess.

5. Replace the earth wires to the casing using the threaded screws and washers removed earlier.

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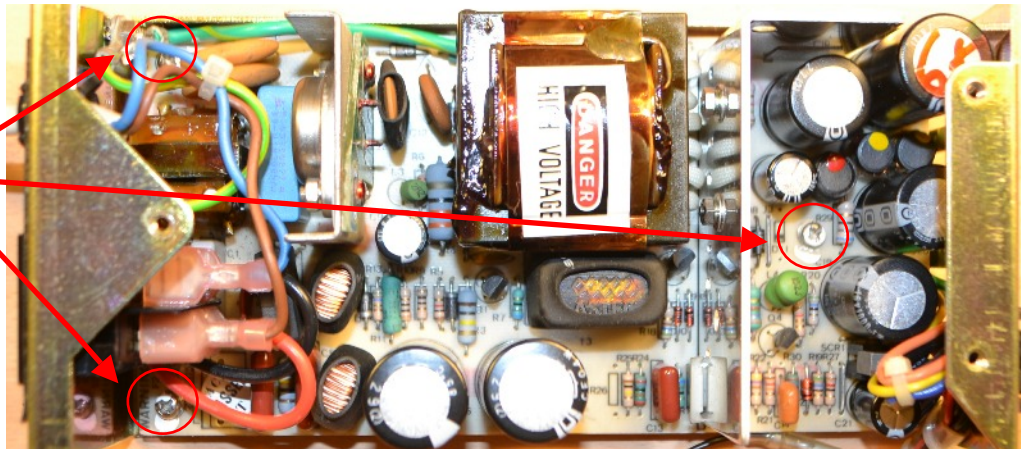
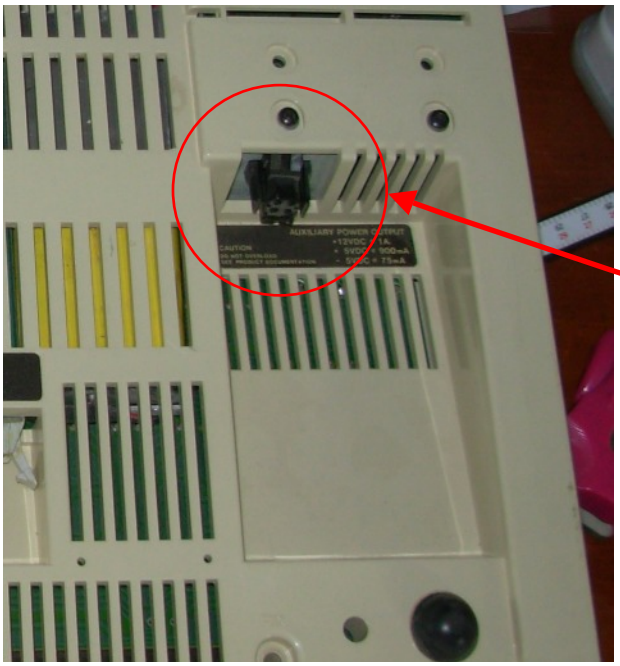
Step 5: Re-assembling cont.

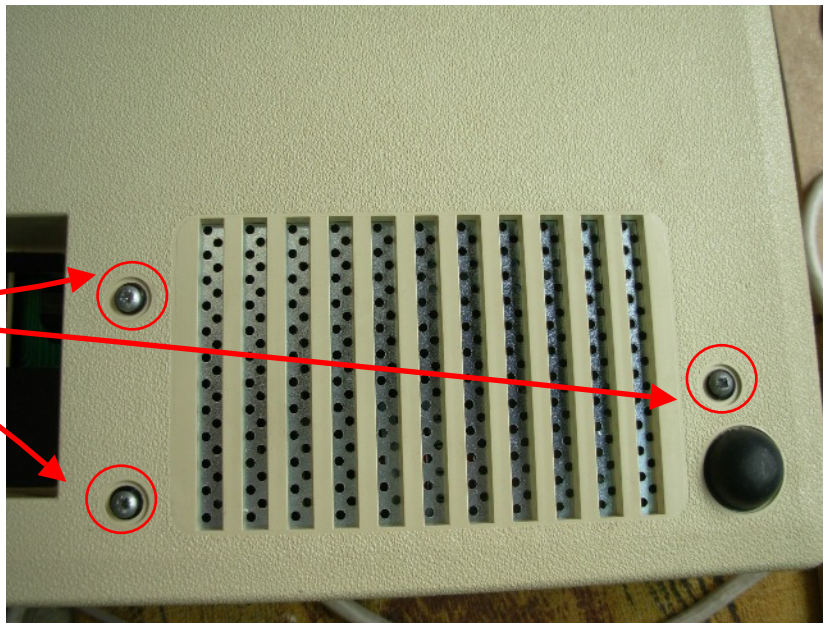
5. Replace the 3 securing screws holding the board to the metal casing using the threaded screws and washers removed earlier.





6. Place the BBC Micro back onto your work surface with the open side facing upwards. Gently guide the power supply back into the location ensuring the auxiliary power socket is guided through the hole in the case.

7. Whilst holding the power supply in place, carefully turn the BBC Micro over and secure the power supply to the case using the 3 threaded screws and washers removed earlier.



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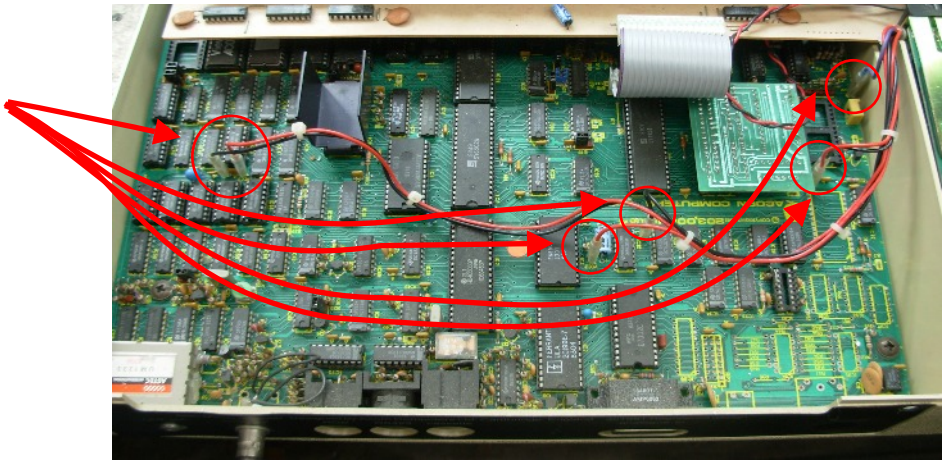
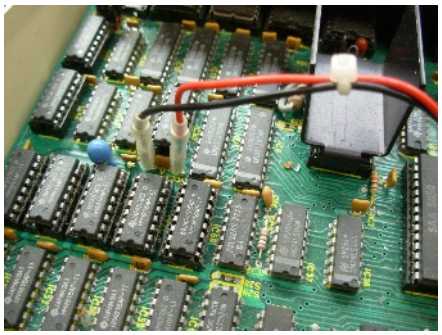
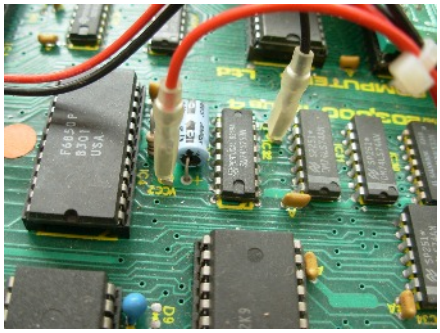
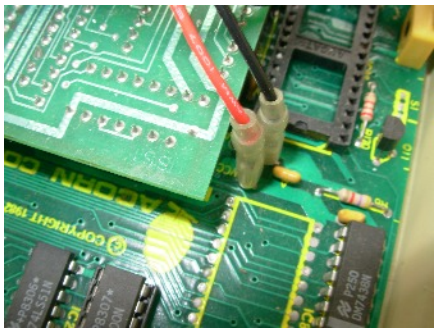
Step 5: Re-assembling cont.

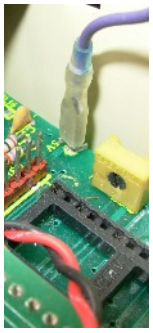
7. Replace the spade connectors back into the 4 locations shown in the picture. Take care in connecting the black wires to the post marked 0V and the red wires to the posts marked VCC. The lilac wire connects to a single post nearest the power supply. Using the supplied cable ties, secure the wires if needed. Expanded views are shown below in each of the 4 locations:



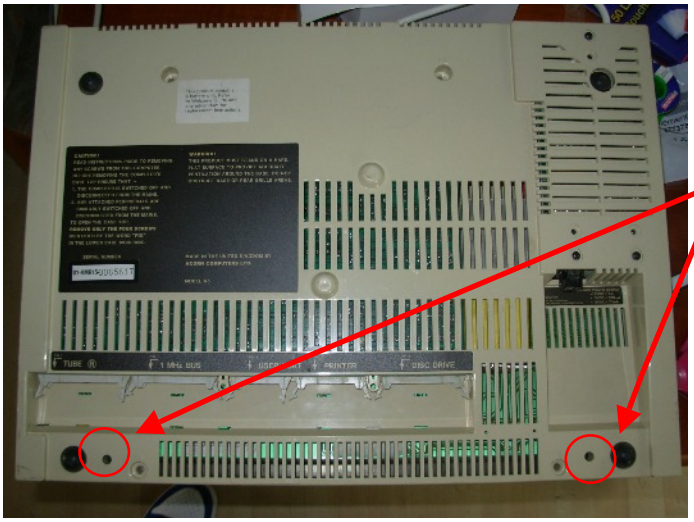








8. Place the lid back onto the top of the BBC Micro. Then gently lift the whole unit onto one end and replace the **BLACK** screws in the locations shown (right)



9. Turn the BBC Micro over and replace the 2 **SILVER** screws into the locations shown (left). The BBC Micro should now provide you with many more years of service!

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