

# Keyboard repair - Photo Guide

What follows is a step-by-step guide to opening and repairing a Commodore Vic-20 computer that has a non-operating key on the main keyboard.

I purchased my Vic-20 on Ebay. The only problem was that the 'E' key did not work - unless you twisted it at the same time as pressing. Tis was hardly suitable for writing long BASIC programmes.

What follows then is a complete guide to taking your VIC-20 apart, repairing the keyboard and then putting it all back together.

## TOOLS YOU WILL NEED:

1. Small + screwdriver (for the fiddly screws which hold the keyboard to the sensor plate)
2. Medium + screwdriver (for the screws holding the keyboard unit to the chassis)
3. Medium/Large + screwdriver for opening the actual chassis to reveal the innards
4. Soldering iron with a fine tip - and some solder



Large screw for holding case together



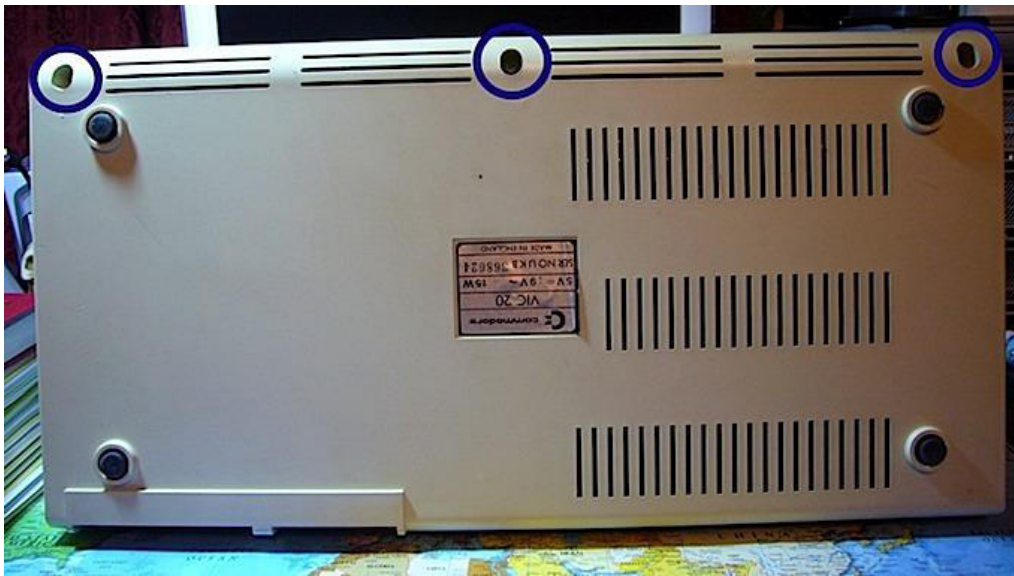
Medium sized screw for holding keyboard unit to chassis



Small screw for holding keypad to sensor plate

## Step 1

Separate the 2 halves of the machine by unscrewing the THREE large screws along the lower front edge



NOTE: the 3 screws are circled in blue above

Gently separate the 2 halves and you should see something like the next picture:

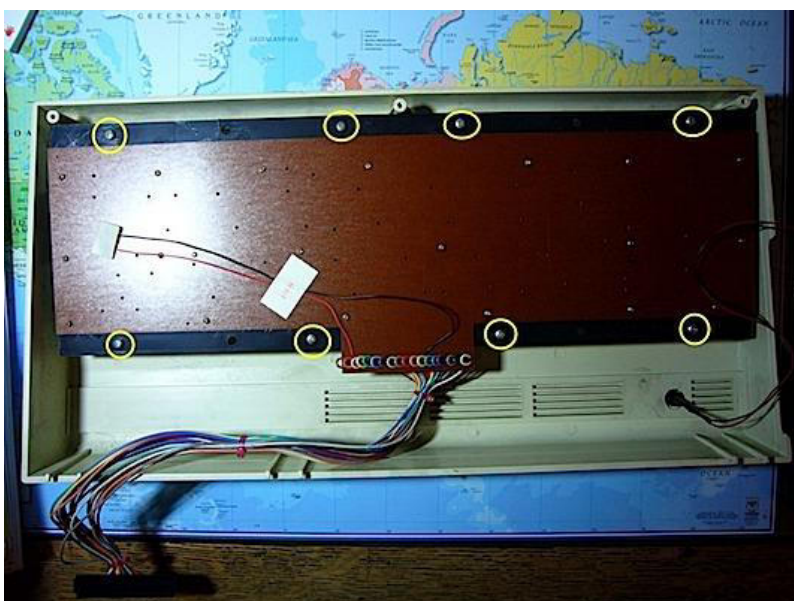


NOTE: Circled in yellow you can see a ribbon connector (LEFT) and small power connector (RIGHT)

Gently prise off both of these connectors - which will separate the two halves of the machine completely

## Step 2

Unscrew the EIGHT medium sized screws holding the keyboard unit to the upper chassis:

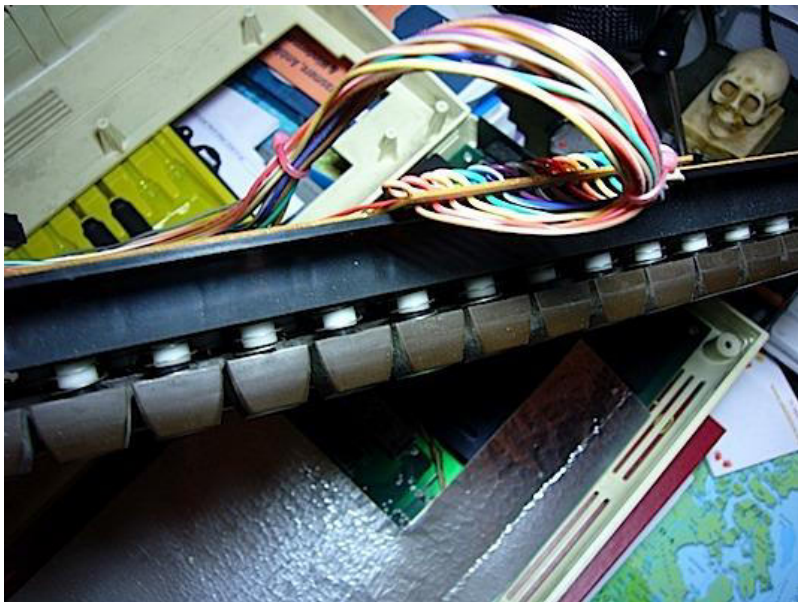


NOTE: the 8 screws are circled in yellow above

Once the screws have been removed, the keyboard unit may be separated from the upper chassis:



Note how the keys are held in place by the unit - side image shows the springs and plungers:



[NEXT PAGE >>](#)

[<< BACK](#)

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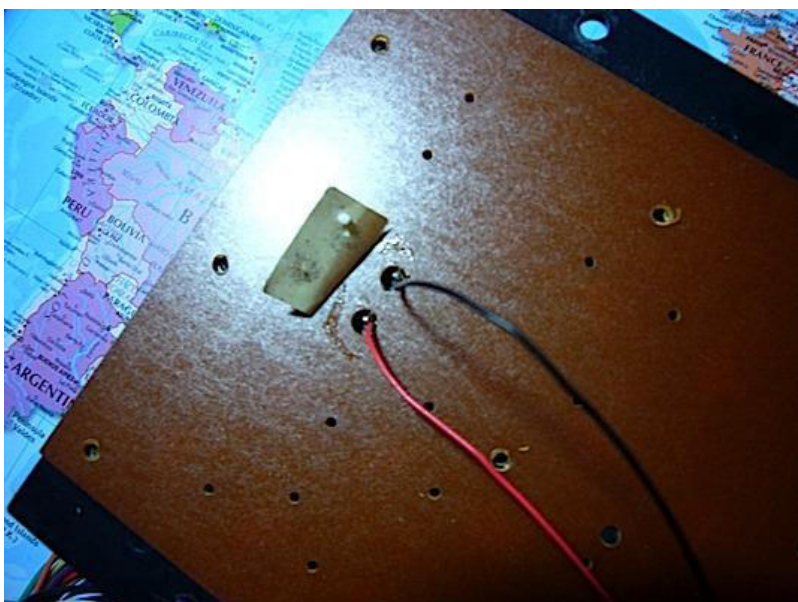
### Step 3

Now we have to separate the sensor plate (switch plate) from the physical key/plunger unit

Turn the keyboard unit over and remove the 19 small screws with a small screwdriver - BUT DO NOT try to separate the sensor plate just yet - there are two wires which must be detached first !!



Work around the sensor plate removing the 19 small screws (above). **NOTE** - the black and red wires soldered onto posts beneath the paper sticker !!



ABOVE: peel back the paper sticker and you will see the two soldered connections



ABOVE: use your soldering iron to melt the solder holding the wires onto the posts and detach them  
You may now separate the sensor plate from the keyboard keys/plungers:



[NEXT PAGE >>](#)

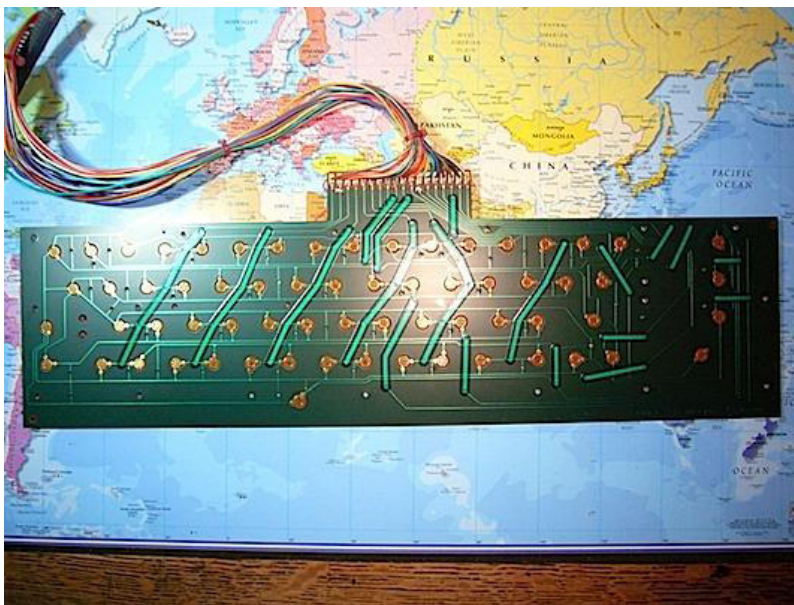
[<< BACK](#)

## Step 4

The next part is the actual repair - which is removing dirt and debris from the key switch and plunger face.

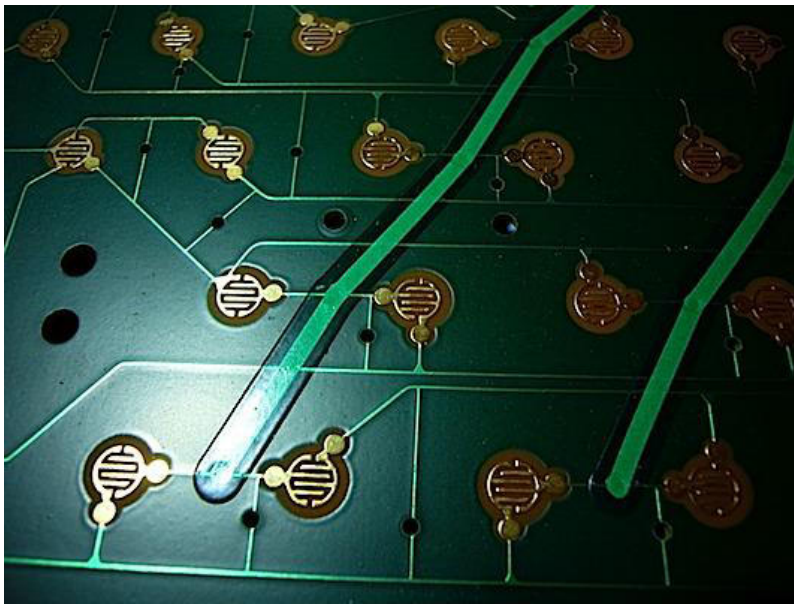
The system works thus:

You press a key, which forces a plunger towards a PCB switch. The end of the plunger has a carbon face - capable of conducting electricity and so allows the PCB switch to complete its circuit. If dirt and debris get between the carbon plunger face and the PCB switch, no circuit will be made and the key will not function



ABOVE: the PCB key 'switches'

BELOW: close up image of each PCB key 'switch'



BELOW: Plungers that strike the PCB switches when a key is pressed (notice the solder posts in the pic centre)



BELOW: a close-up image of the carbon-faced plungers which strike the PCB switches  
NOTE: my defective 'E' key is in the centre of the picture - notice the dirt on it ?





**DO NOT** use any abrasive cleaners or anything which may remove the crucial carbon (graphite) from the face of the plunger. To repair my defective 'E' key I first washed my hands thoroughly, then gently wiped my fingers across the PCB switches and also the carbon plunger face.

[NEXT PAGE >>](#)

[<<BACK](#)

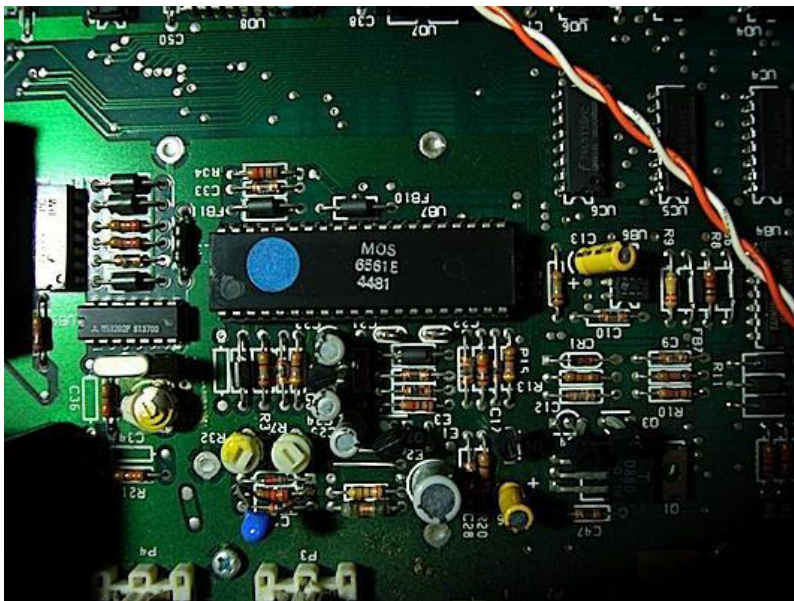
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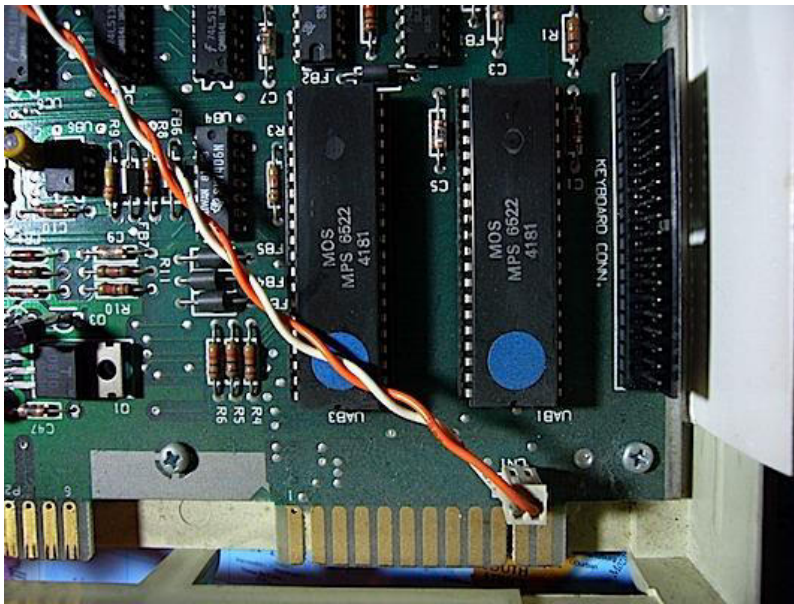
## Step 5

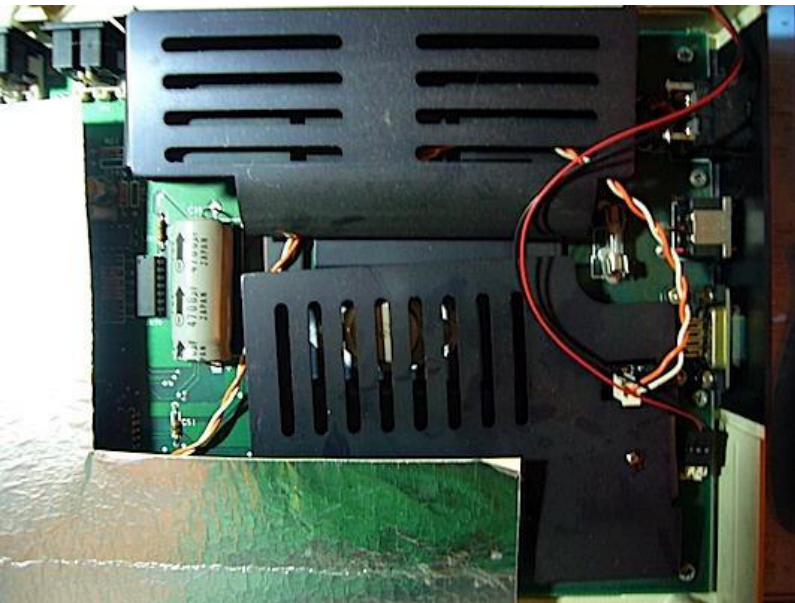
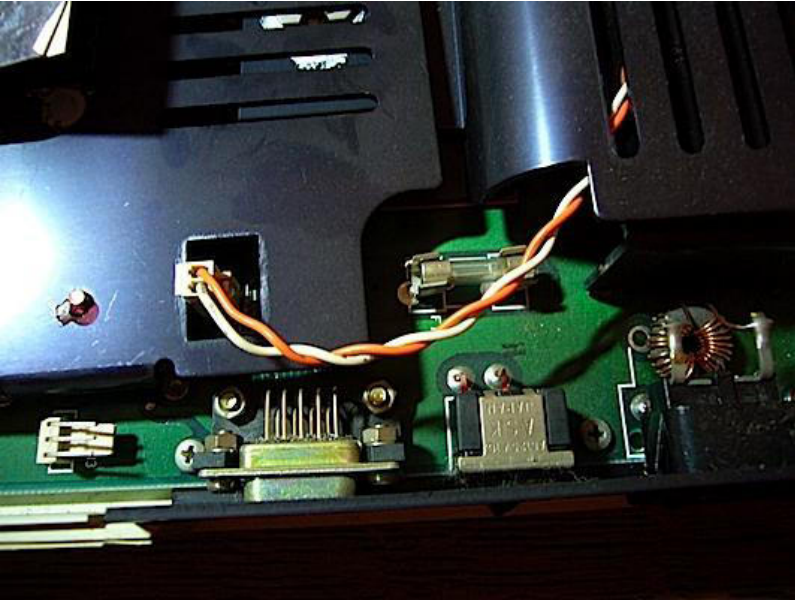
The last step is basically a case of reversing the sequence of operations - remembering to re-solder the wires back onto their posts and refit the ribbon/power connectors.

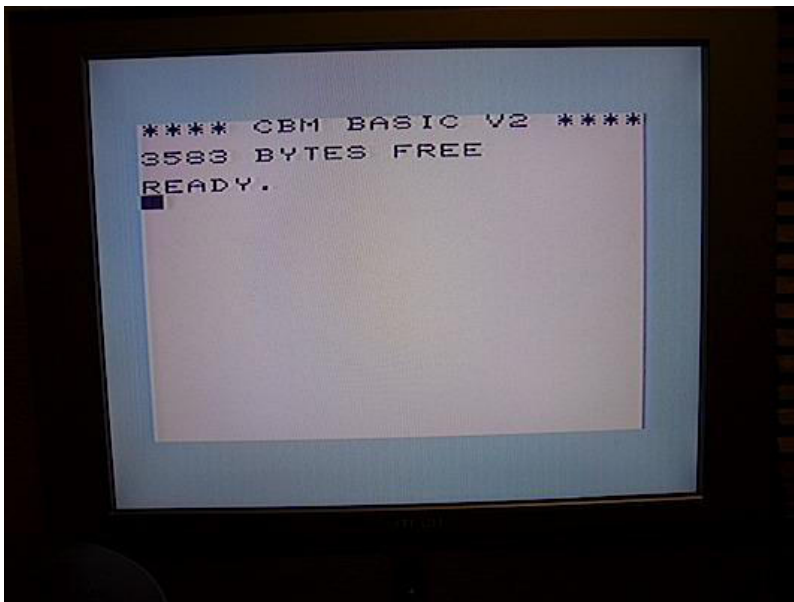
Hopefully your VIC-20 keys will work properly once again - and you can use the opportunity to use a PC dust blaster aerosol to remove dust and debris from the inside of your VIC which should help cooling.

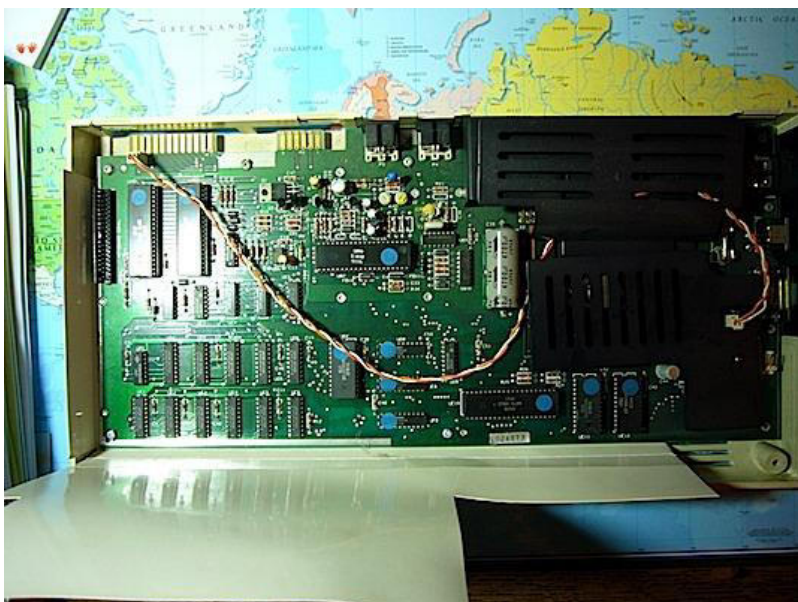
What follows are some more pictures of the innards of the VIC-20 - not strictly relevant to the aim of this article - but merely for your viewing pleasure.... enjoy !!











[<< PREVIOUS PAGE](#)

[<< BACK TO MAIN PAGE](#)