Canon PowerShot A610 stuck shutter reactivation

Canon Powershot A-Series (A610 A620 A630 A640 , ...?) stuck shutter (only black picture recordings) solved by applying external voltage

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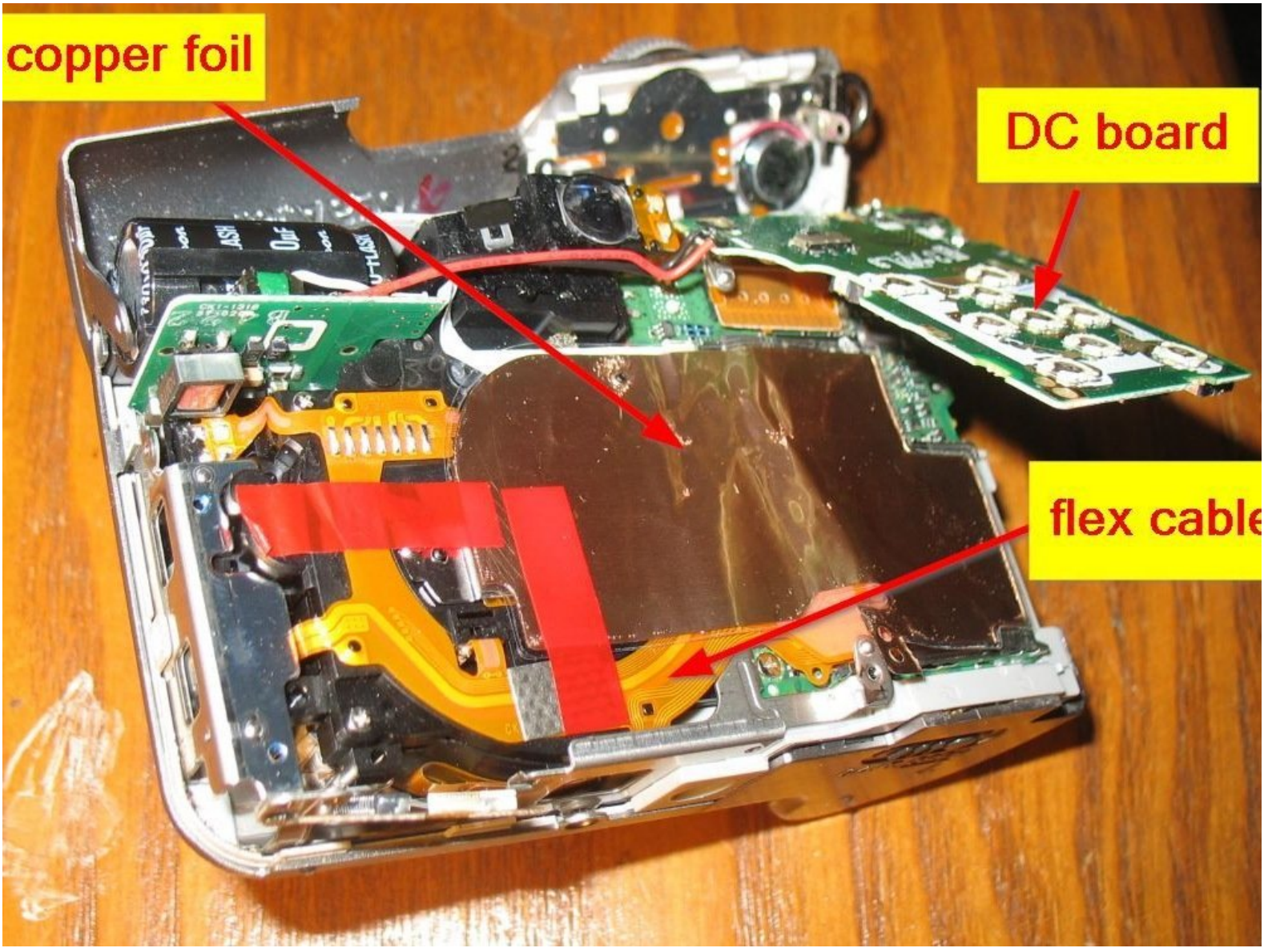

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EINLEITUNG

This kind of fix is not difficult, nevertheless you need some patience and care as it else may kill your lens unit finally.

If you shutter is stuck, you usually only get black pictures. In the web there are some blogs with suggested fixes, mainly by mechanically shaking/beating the camera or tryining to increase shutter voltage by interrupting power supply while recording. I tried this at about a dozen of stuck shutter Canon Powershot A610/ A620 A630/640 and unfortunately they were not successful.

So I disassembled one lens unit completely and found out there is a stepper(?) motor for aperture and a bistable solenoid for the shutter.

Fortunately, and this is the real clue of fixing here, Canon uses a very maintainance friendly flex cable to drive the lens unit.

What is needed:

- DC power supply w/ adjustable voltage

- wires to get the DC voltage from power supply to Camera flex cable

- small screwdriver (opening camera case, see other manuals)

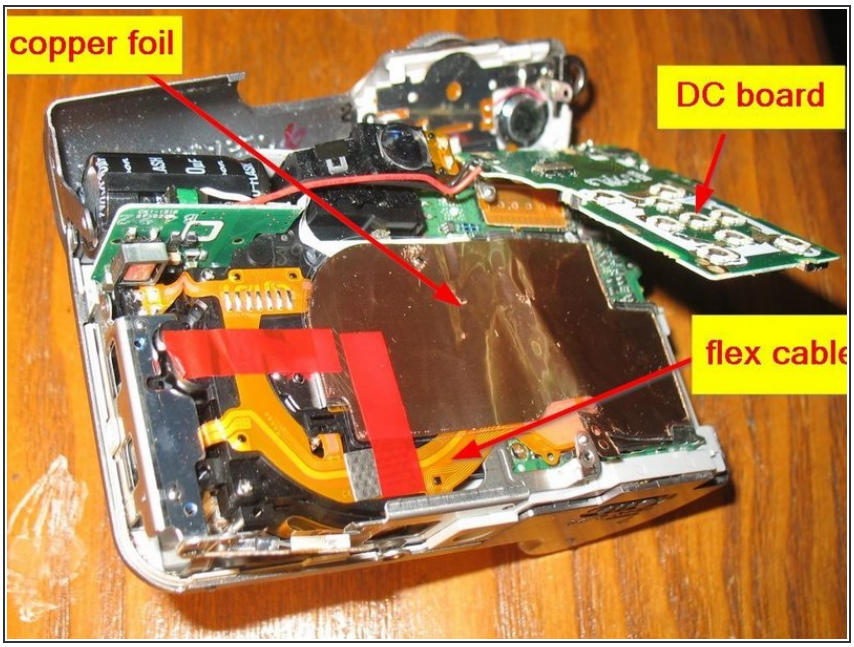
- some patience

Good luck!

WERKZEUGE:

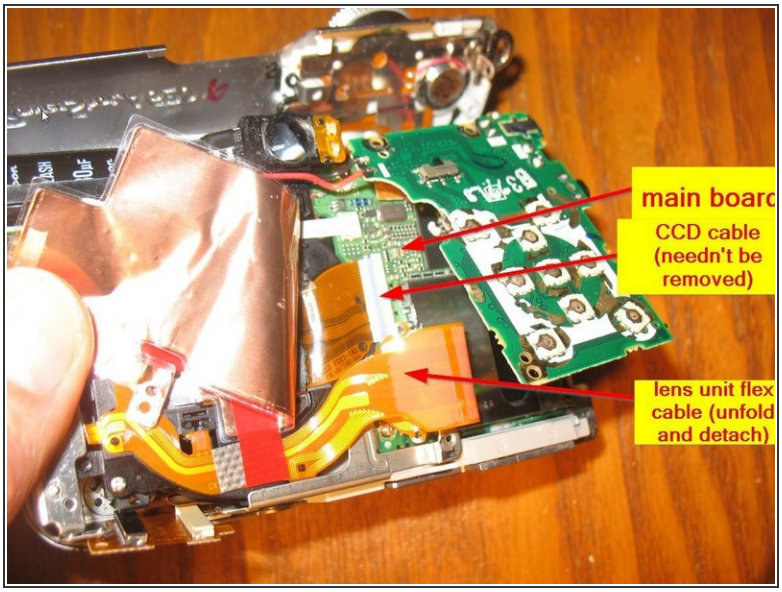
- DC Power Supply (adjustable voltage) (1)

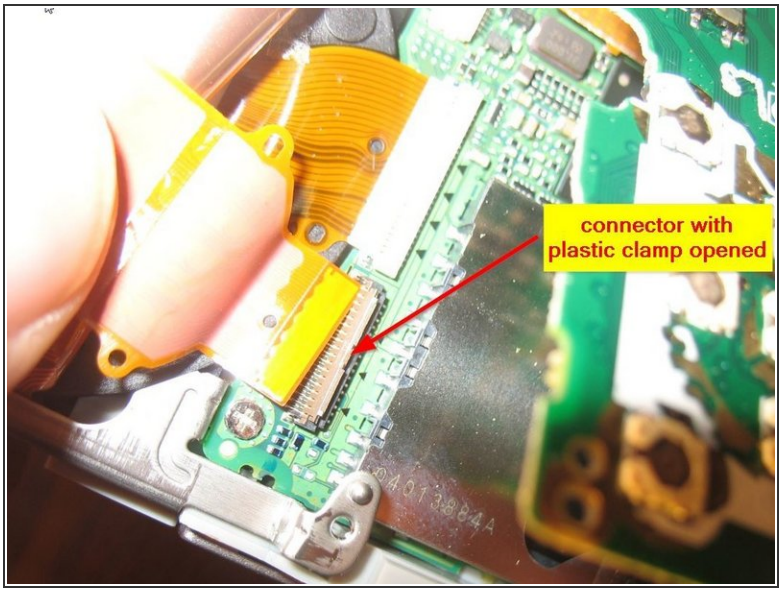
Schritt 1 — stuck shutter



- First open the housing of the Camera (see manuals in the internet, good is "Canon Powershot A610 Camera Housing Replacement" @ifixit as well and "powershot a610 a620 parts catalog"), and remove rear housing - unscrew DC board and remove the copper foil

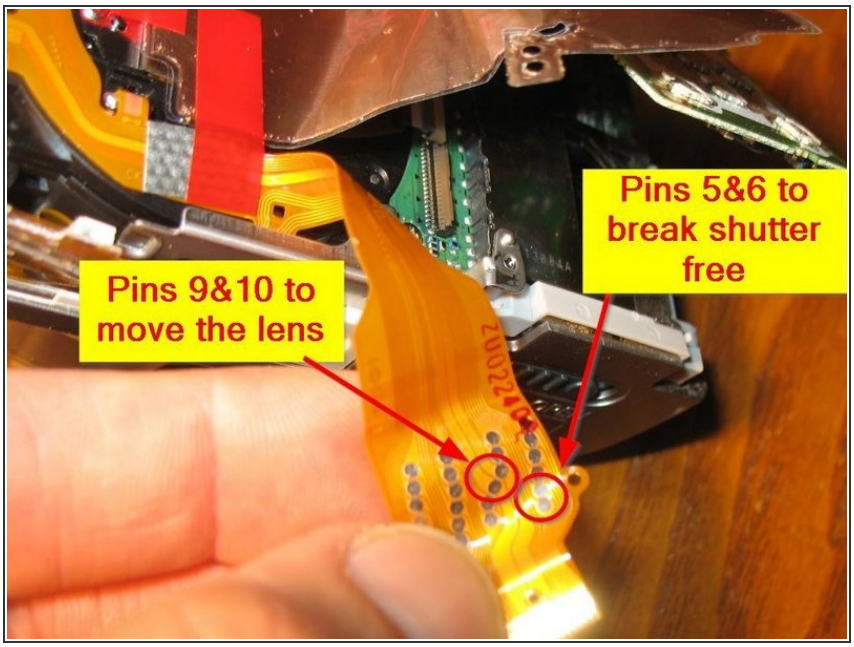
Schritt 2





- - now you can see on the upper side of the main board two connectors for two large flex cables going to the lens unit. - detach the lower large flex cable (the upper one is for the CCD, needn't be removed)
- Connector can be opened by rotating the plastic clamp

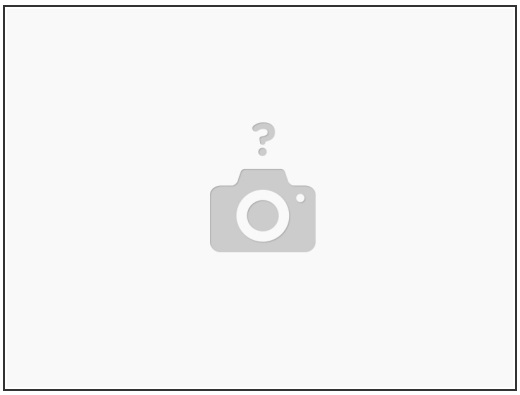
Schritt 3



- Unfold the cable, on the lower side you can see circular testpins (Dia 1mm) for each wire on it, very comfortable!
- Pin 9+10 (counted from right side) are on especially broad wires, this is main motor power supply for moving the complete lens in and out + zoom. You can apply 3volts between these both for moving the lens in and out. So first do this until lens unit is max. extended. **Remark: this can also be quite helpful for fixing a jammed lens!**
- Optional check: Pin 1+3/2+4 are the coils of stepper motor for aperture. You may check resistance to see that cable is not broken. My ohm meter shows ~40ohms between 1&3 and 2&4.
- If cable is really broken (quite higher/infinite resistance), you can stop here: cable replacement does not make sense in my opinion, better replace complete lens unit then. But in fact, I've never really seen that issue of a broken cable up to now!

- Pin 5+6 are the interesting ones: the solenoid for the shutter. Same applies here: if resistance between both pins is infinite, you can give up --> broken cable, mostly inside lens system. I measured between 6 and 20ohms (dpending on quality of your ohm meter+wires), as a normal value.
- Now apply voltage to pin 5+6 BUT ONLY FOR A SHORT MOMENT(<1sec), ELSE YOU CAN KILL THE SOLENOID/CABLE!!!!: +3V on pin6, gnd on pin 5. This should open the shutter! As your shutter probably stucks, if you read this, it probably will not do at the first time, but you should hear the slight "click"!
- If you get this "click", chances are not too bad. With fully opened lens you already may also see slight shutter movement when applying voltage
- Just repeat applying these voltage shots and you may also increase it slightly, and reverse polarity. In my most cases shutter started to open at ~4.5V to 6V. Sometimes I had to increase to 11V but be aware that too high voltage as too long shots (hard to estimate?) might kill the system!!!

Schritt 4



- **Conclusion:** In all my cases I succeeded in opening the stuck shutter, BUT: often stuck shutter had a reason. Might be increased friction or some debris, dust, etc. So even if opening shutter was successfull, it could happen that it shortly thereafter sticks again or even remains open.
- So even if you succeeded in opening, reverse polarity, close it again, open again,... Do this with decreasing voltage down to less than 4volts. Only if this works flawlessly to 100% again and again you have good chances really having solved the problem. Make some breaks between to give the coil the chance to cool down and afterwards keep trying!
- So good luck! Hope this will help, though these cameras are rather old now. **It surely also applies more or less (at least in principle) on others of the Powershot family.**

Arbeite die Schritte in umgekehrter Reihenfolge ab, um dein Gerät wieder zusammenzubauen.

