

Canon E18 repair guide for SD300

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History:

Yesterday my SD300 gave me the E18 error after about 2 years of service. I wasn't using the case that day and when I turned it on then switched to capture mode, I heard the motor tighten up the gear assembly in an attempt to open the lens. I tried pulling on the lens while powering on without success. The following are photos and comments of my efforts to correct the problem.

Procedure 1:

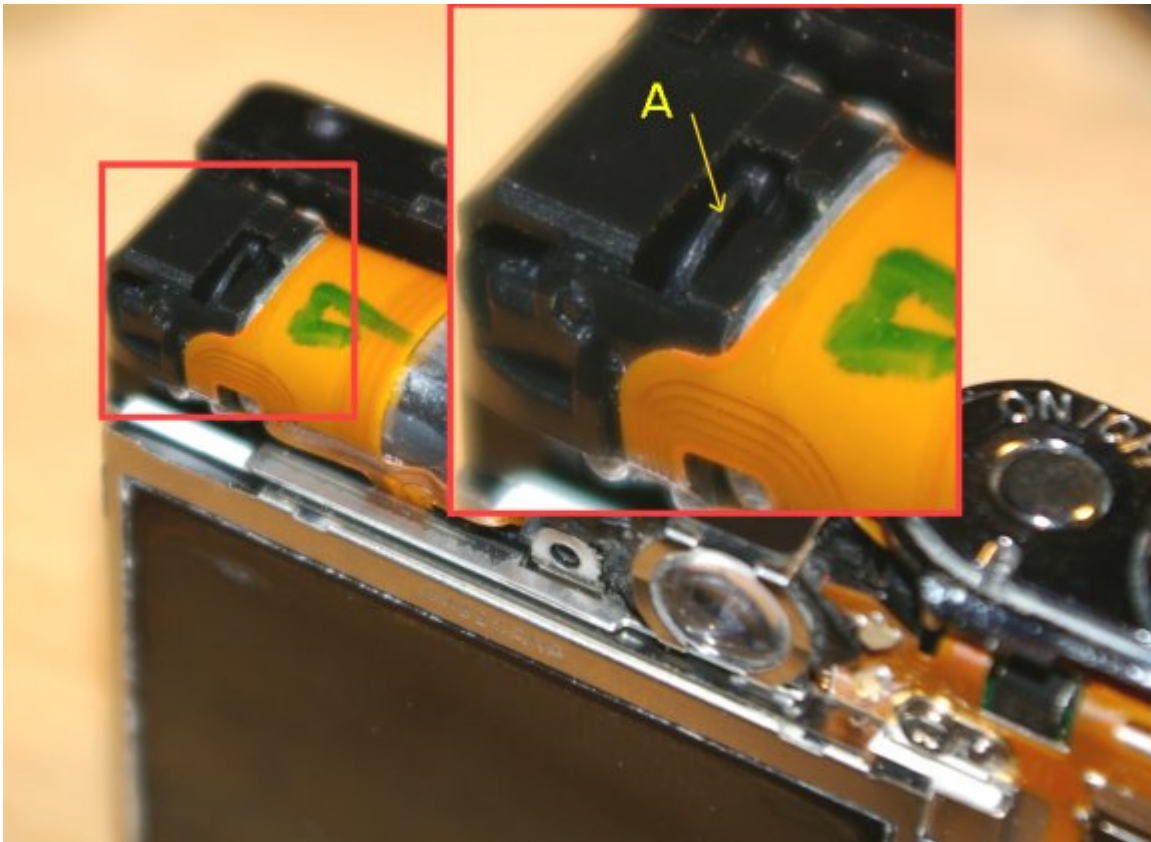


Figure 1

If all else fails, you should first try to manually move the lens assembly by rotating the position sensor disc shown at A of figure 1.

To expose this part of the camera remove the plate on the side of the camera, remove all other exposed screws. Remove the back and front cases. Leave the battery in so you can test if you were successful.

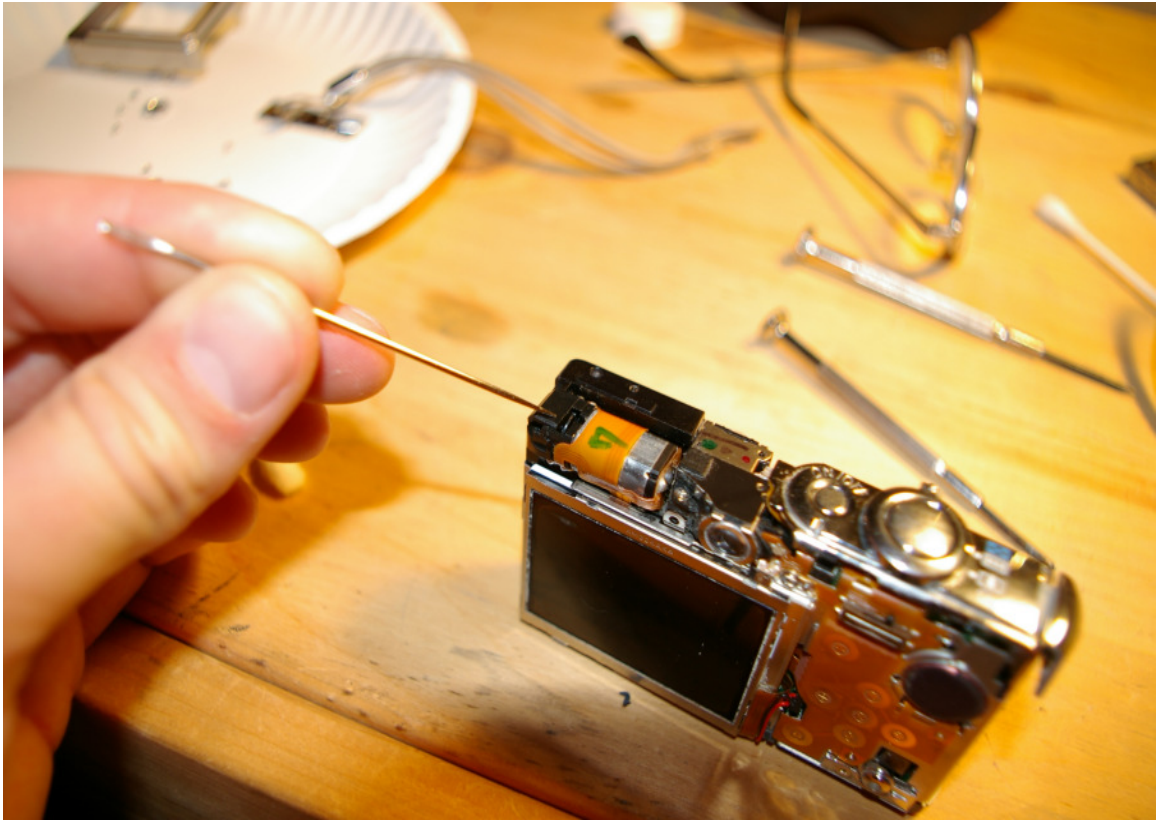


Figure 2

Procedure 2:

If the lens assembly still does not move you may choose to pull apart the gears and move the lens manually, from a different position. In my case I did this step first but when I rebuilt the camera it still failed. Only after doing what I first described did the camera work again. I figure this means the sticking gear was very near the motor rather than within the sliding lens assembly.

Forgive me if this isn't perfectly accurate as I didn't make notes. In fact I only decided to document after I had already opened the camera. Also I'm sure this procedure can be greatly optimized. My goal was to fix the camera, not to develop this guide. I'm sure I tore into this camera much deeper than necessary but I still didn't pull the lens out and apart.

Make sure the memory card is out of the camera. You can't remove the top board if it's inserted. You must remove the top board in order to remove the LCD so that you can

unplug the flash assembly to expose the gears. (I have a feeling that may not be necessary to remove the LCD to pull the flash out; look for shortcuts here.)

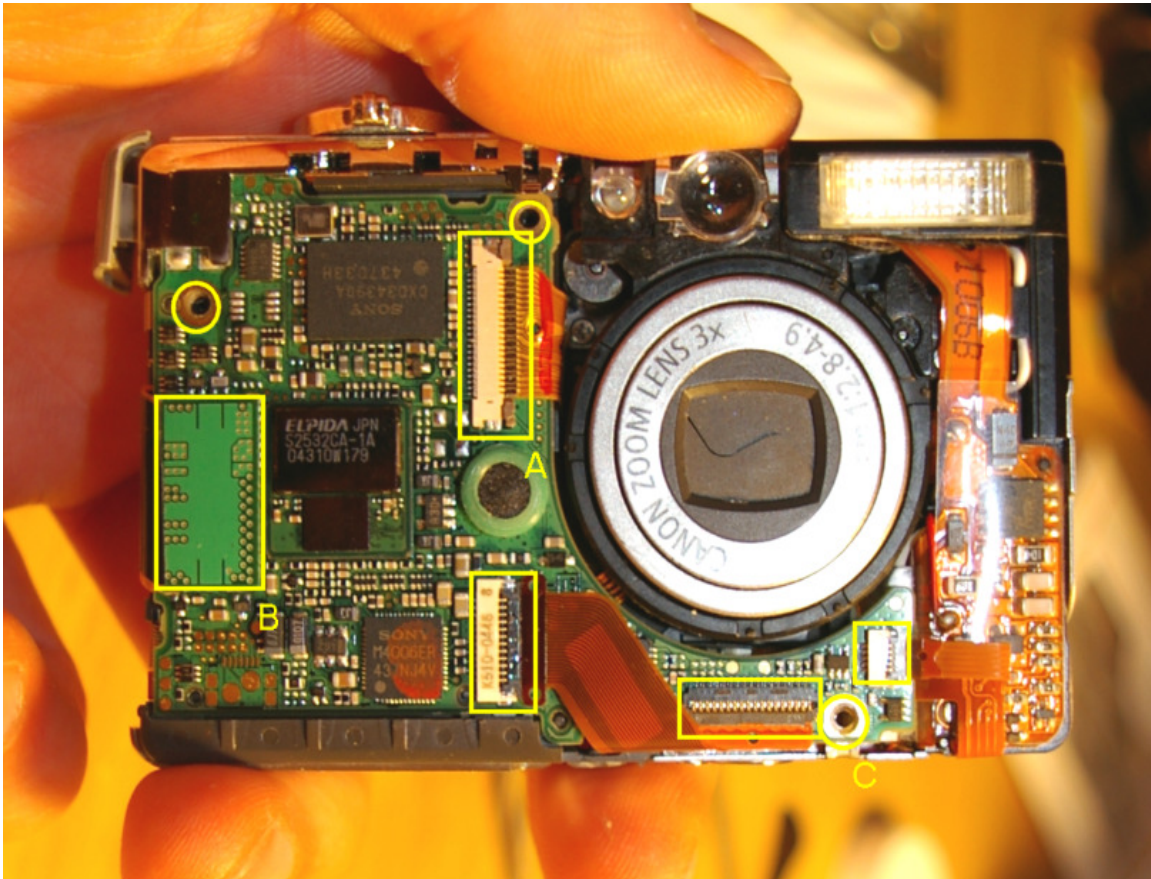
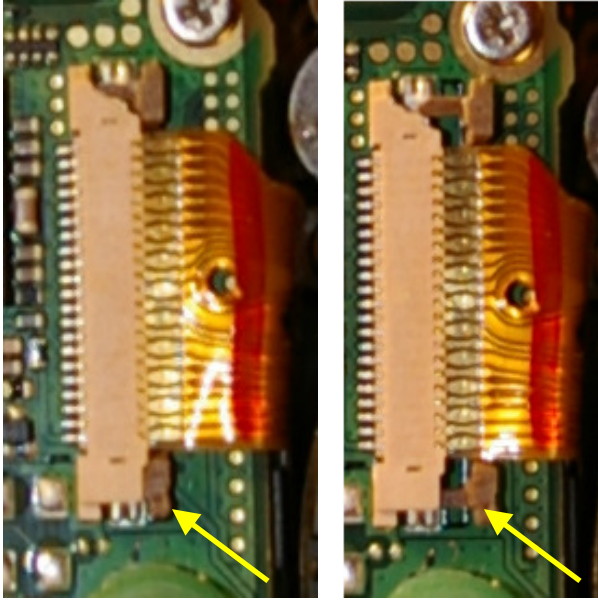


Figure 3

There are 3 screws to remove and 5 connectors to disconnect. Note that connector at A in the above photo is different than the others. The photos below show this connector in the closed and opened states.



The other connectors are opened by lifting the front edge of the connector which is like a flap covering the width of the connector. The connector at B snaps straight up and down. I pried mine off with a small screw driver.

I think I remember the screw at C in figure 3 is shorter than the other 2.

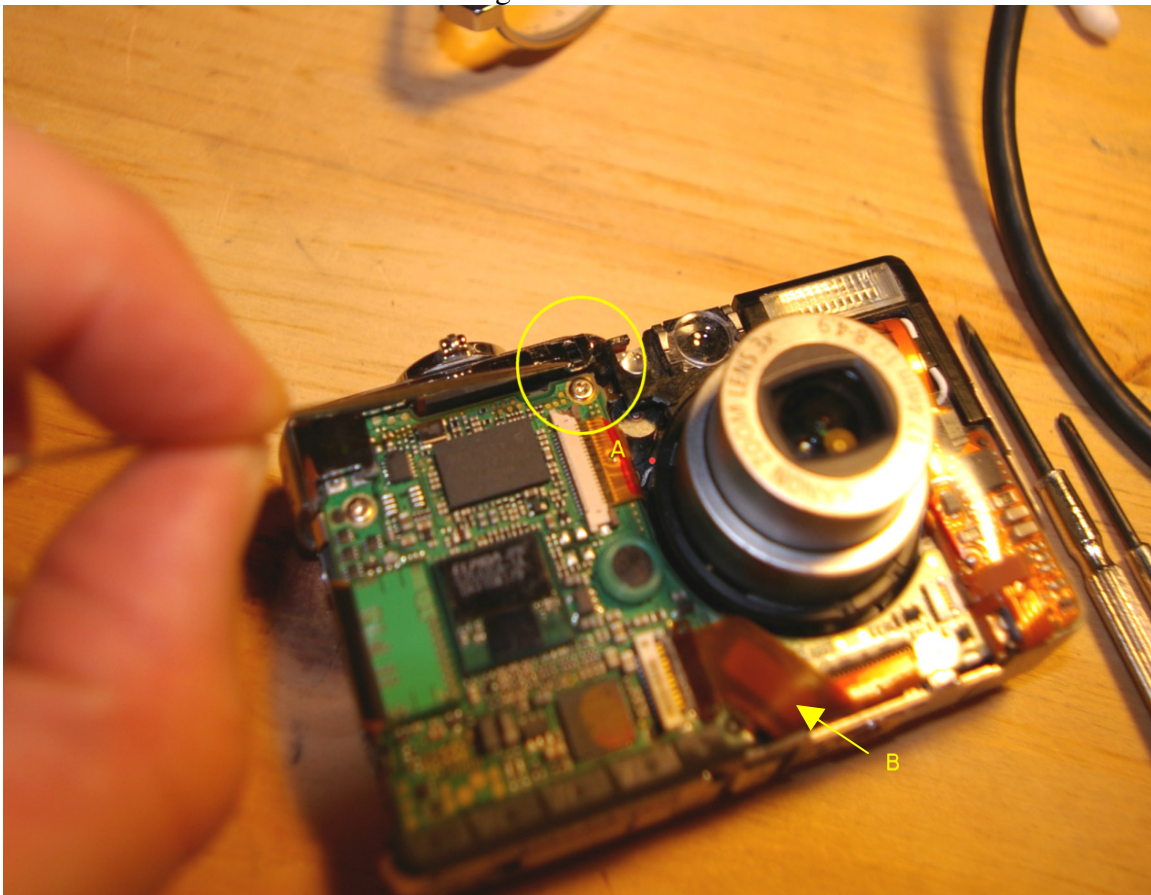


Figure 4

Before this circuit board can be removed the shutter button and surrounding cover piece must be removed. Basically there is one clip that's holding it on. (Shown at A in figure 4) Unclip and slide off camera lengthwise until the USB and AV jack clear.

To get at the gears you have to move the flash assembly. To unplug the flash I removed the LCD. This means one screw and two connectors for the LCD and one power connector for the flash. There is also a backup battery that slides under the lens. It's connected to the flash. See A of figure 5. I also removed the camera tripod mount at B in figure 5. There is only one screw holding it on at this layer. It should all be pretty obvious once you start peeling back the layers. The main cable for the LCD wraps through the camera to the front side. See B of figure 4.

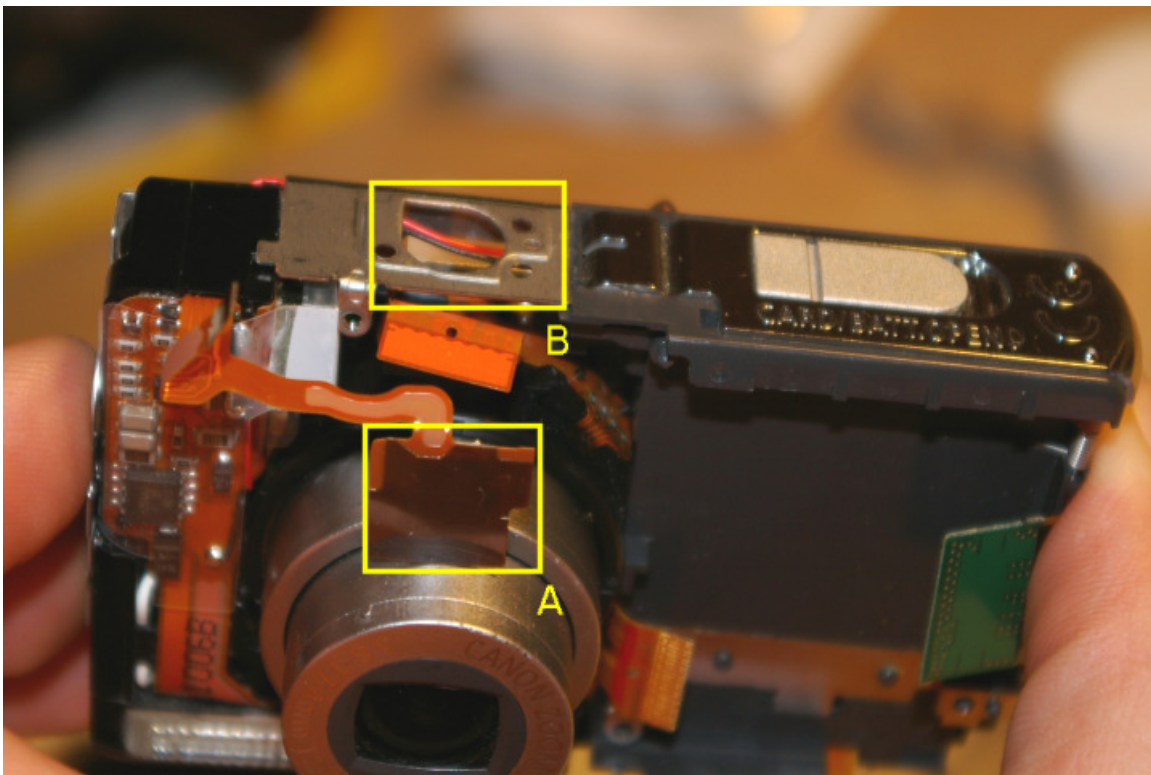


Figure 5

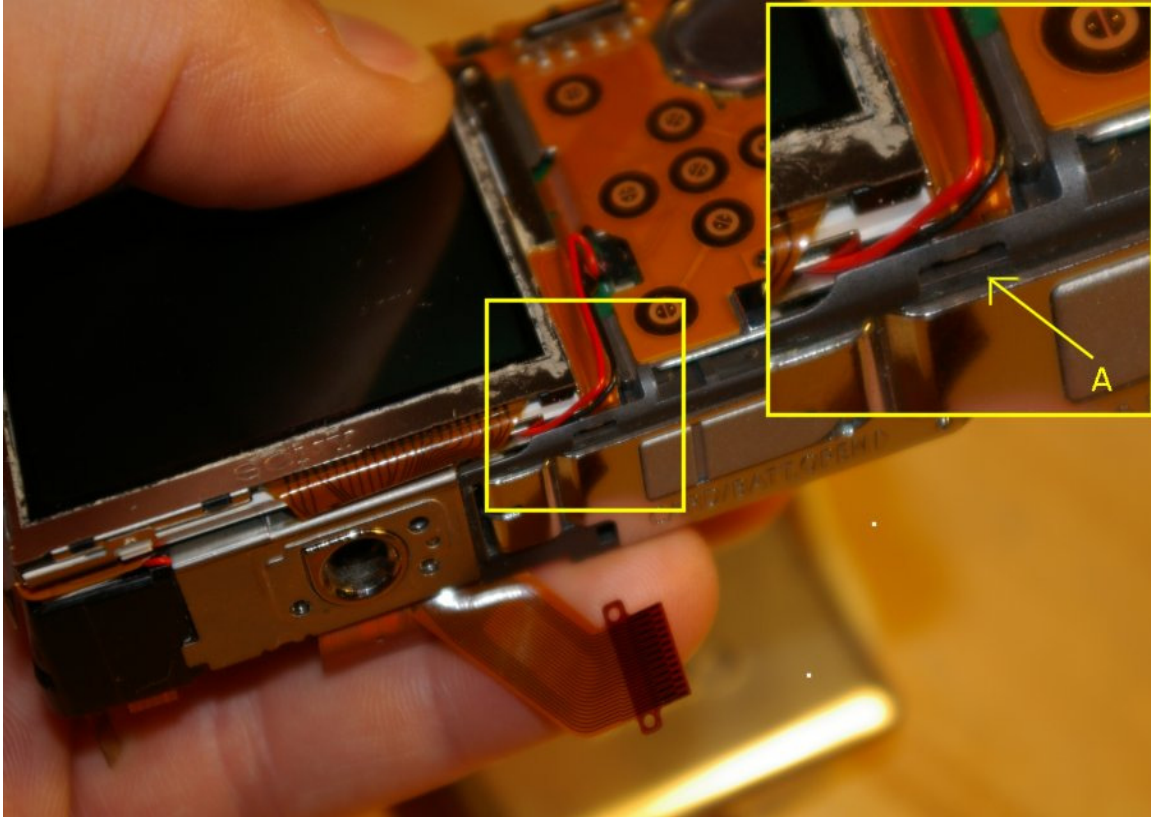


Figure 6

Notice how the LCD clips in to the rest of the camera at the lower right corner shown at A in figure 6. There is also one screw at the top. The red and black wires are the power lines for the flash assembly. The connector pulls straight up to remove. The wires thread through the camera to the base of the flash assembly.

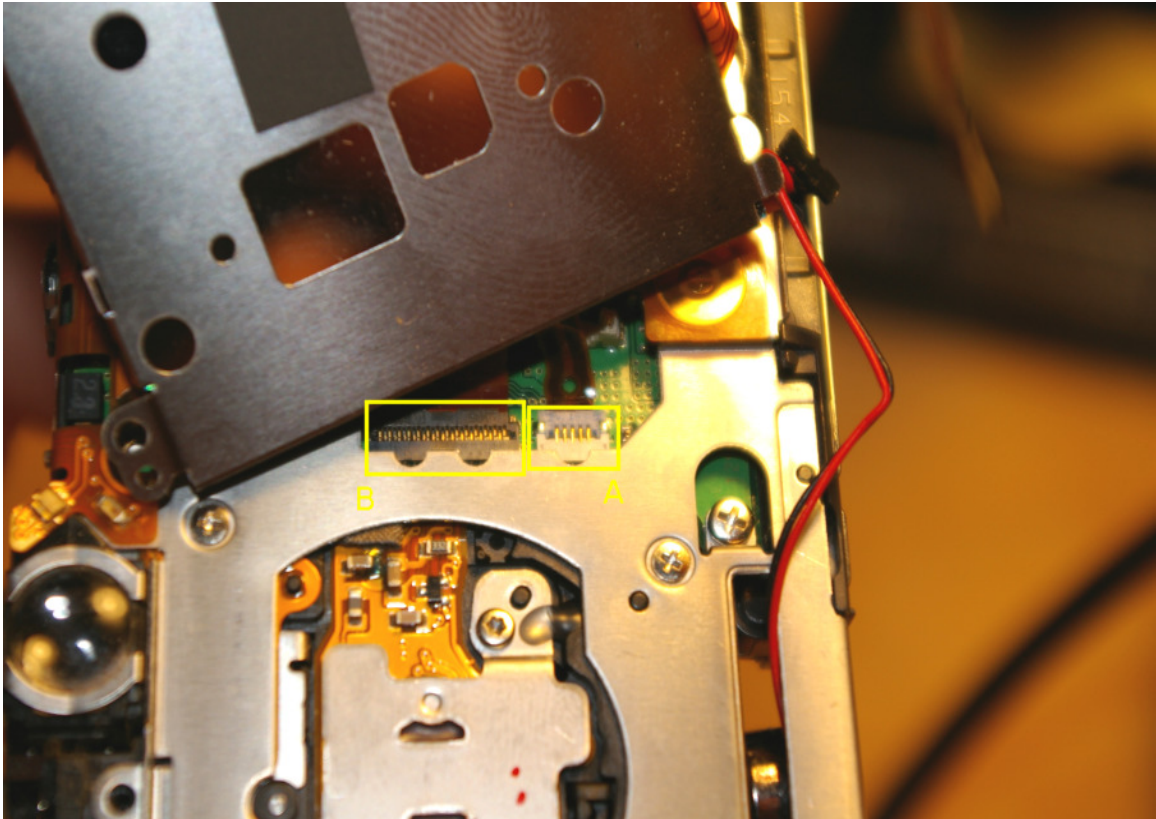


Figure 7

You can probably avoid taking the LCD off completely. I know you can avoid having to remove the connector at A in figure 7. There no need to touch the connector at B in figure 7. The red and black power lines going to the flash are clearly visible in figure 7.

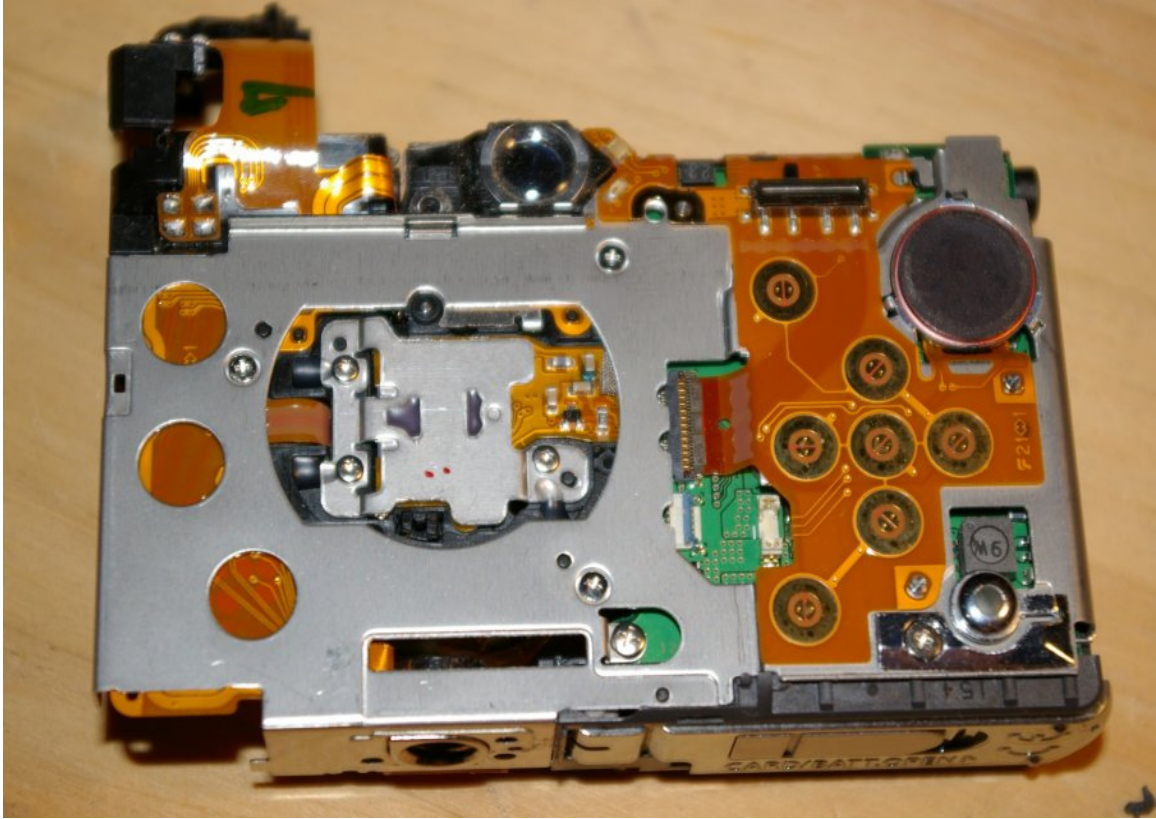


Figure 8

Figure 8 shows what it should look like if you remove the LCD completely.

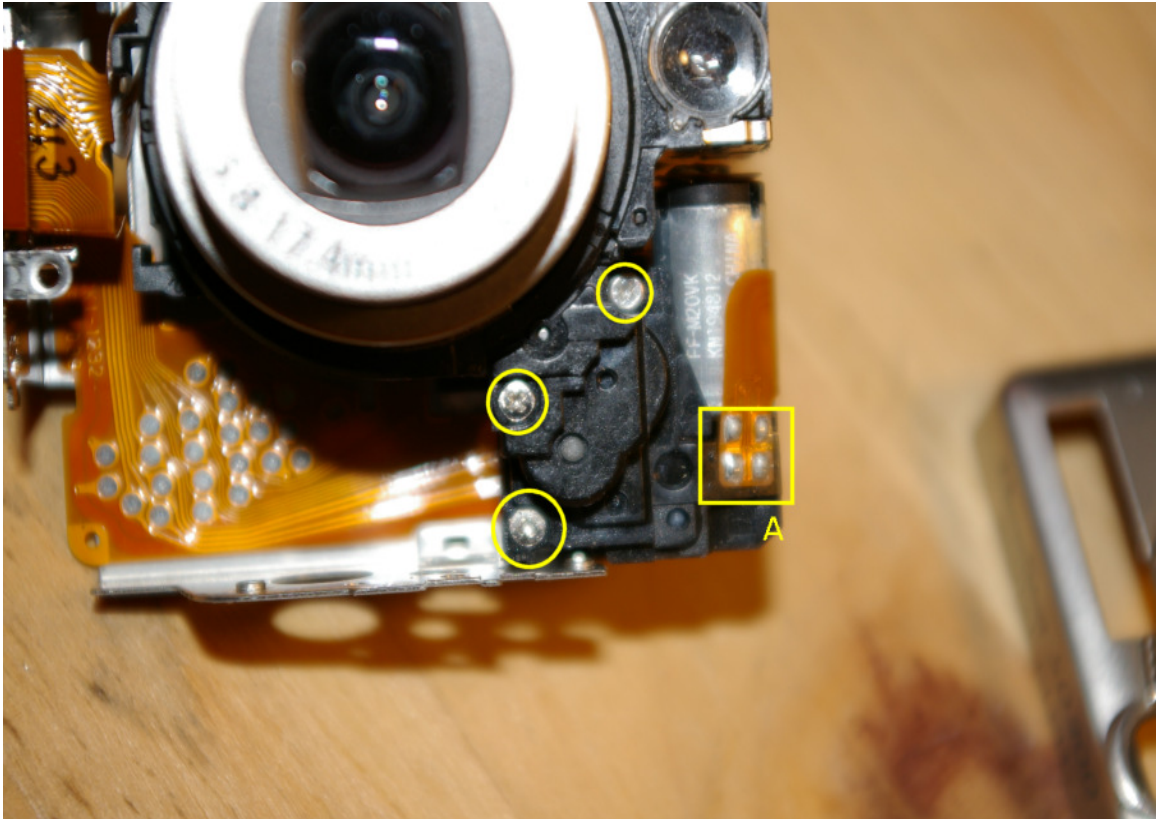


Figure 9

Once the flash is removed from the camera the gear cover is exposed.

There are three screws to remove to expose the gears. The cover pulls straight up, be careful not to disturb the gears underneath until you've had a chance to understand their position. There is a sensor at A in figure 9 that can be removed but prying it out. It will free the gear cover from the camera. As far as I understand, this is a photo sensor used to determine motor position. I don't think it's necessary to remove but I did eventually.

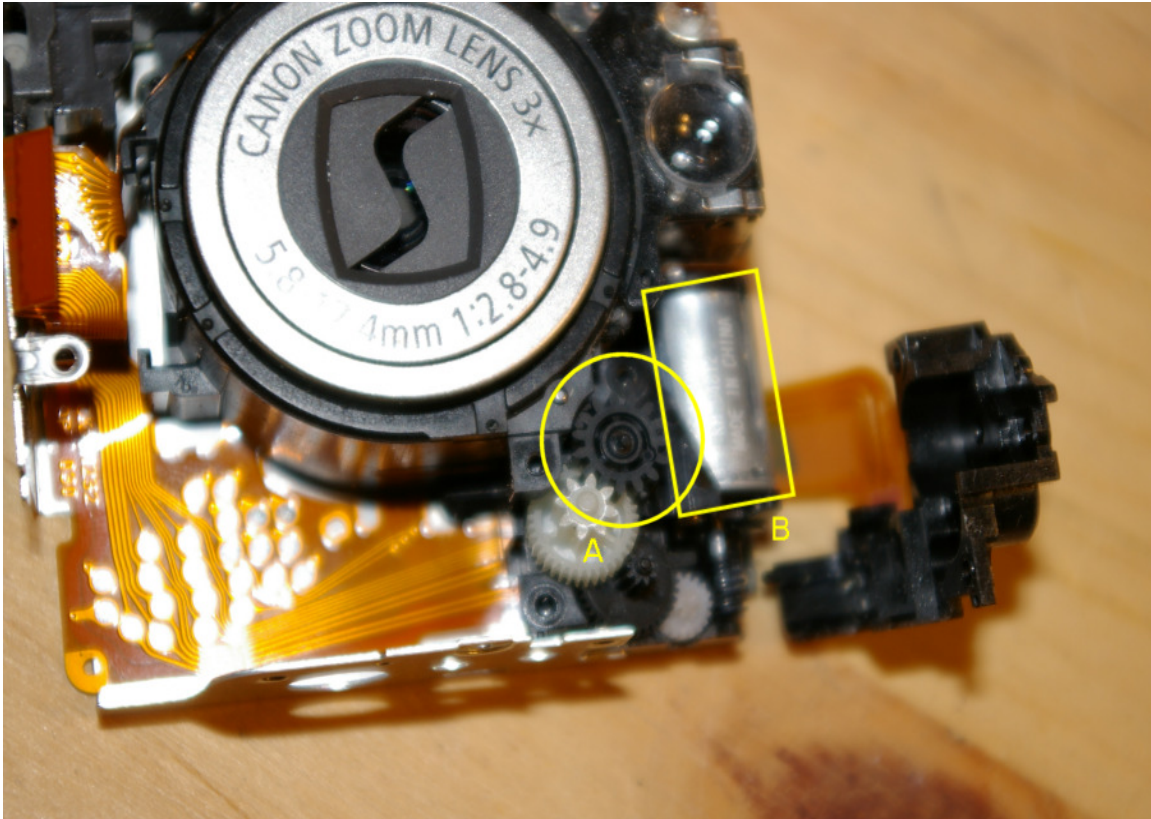


Figure 10

The gear shown at A in figure 10 can be removed to allow the lens to freely move along its track. It didn't move easily, I had to push on the gear teeth to move the lens high enough that I could grasp it with my fingers before pulling. The motor is visible at B in figure 10.

I should mention here that the camera assumes the lens assembly is in its zero position at startup. This means that in my case, as shown in figure 9, one of the gears (see gear at A in figure 10) will have to be removed and the lens pushed down and the dust shutter closed before I attempt to power up. Don't worry, it should be obvious once you get in there and think about it.

Once you've moved the lens through out its range and checked the motion of the motor and the gears while that last gear is removed, you've done about all you can do to verify the mechanics of the camera. Close the lens, replace that last gear, replace the gear cover, replace the flash and LCD and reconnect everything and power it up. Hopefully you'll hear the motor spin and see the lens open. Once normal operation is verified replace the covers and feel good about yourself.



Figure 11

Figure 11 is the first picture with the SD300 verifying operation. This was the camera used to take all preceding photos.