

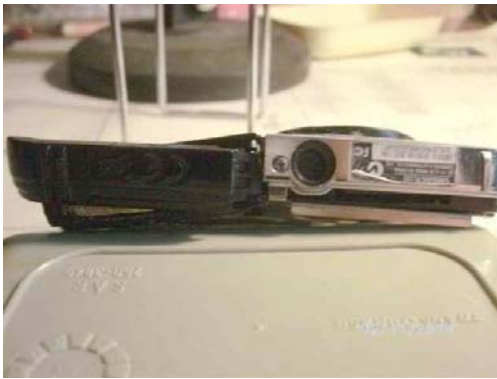
CRUSHED CAMERA DISASSEMBLED

The camera, a Samsung model PL120, was given to me after being crushed by a car. Would you say "as a present"?

Prior to start, my own camera, also Samsung, was tested for macro pictures. The picture taken seemed basically good but the following ones were mostly deceiving because of the rainy weather where the poor daylight did not help much.



Macro tested OK.



PCB - just one connector seems to be damaged. It was put aside for a future checking.



Several parts of the optic block were damaged / crushed. Given its condition I took care to disassemble and recover them in sound condition at least to see how they looked and eventually know what their function was.



Found two motors.



The first (surprisingly quite similar to the “hobby type” sold by Radio Shack, but **much** smaller) drives a pinion parallel to the axial motion of the optics. This pinion drives in turn a gear built around the tubular piece shown, over 100° approximately. Probably in charge of extending / retracting the outer lens when switching the camera off/on.



Carefully opening the small cover I could see the gear train that makes the pinion to spin.

This motor measured 17 ohms between terminals. The whole thing started to move when I applied no less than 3V to them. Reversing polarity, reverses the rotation.



Teeth along an edge.



About 100° appr.

The second, showing two small pancake coils, surely has also some magnetic material inside (screws sticking to it). I expected to find a VCM here.

The motor is crushed and the metallic carcass partly broken, not allowing any resistance measurement. It drives the small threaded rod which has its free end inserted in the "armature".

The white plastic nut seems able to travel back and forth over the whole length, the same as the head in a floppy drive or the read/write block in a CD / DVD drive. The resulting movement would then be parallel to the axial motion of the optics. Questions: is this a **stepper**? Is it related to **focus**?





The optic block is formed by a number of thin pieces starting with the flat cable connector, then three minute inductors (related to the diaphragm?) symmetrically assembled around the housing of the small lens.



At the bottom, that is, the CCD's end, there are three strangely shaped and very thin pieces (one of them holding a dark flat "lens") which, no doubt, conforms the diaphragm. Given the number and position of those inductors (solenoids?) they seem to be kind of actuators driving these parts.



On diaphragm section is removed.



The three sections removed.

The 4mm diam (appr.) lens shown in the first pictures is embeded in a plastic piece. This housing seems prepared to be inserted in the circular frame and then secured with a 30° turn. Two drops of a sticky substance (not hard to take out) had the obvious task to keep it in place.

On the CCD's end, a flat frame, recessed in the center, holds a larger / flatter lens (kind of magnifier) followed by a thin square (glass filter?) which I found totally destroyed.

This frame sits on a square shaped rubber (?) gasket (not shown) which in turn, leans on the intact **Sony** branded CCD.



The same lens holder seen...



...from both sides.



CCD

When disassembling this optical block I found the smallest Parker screws ever. With lot of pressure, care and patience I could unscrew all of them intact.

The flash-related 310V – 80uF electrolytic cap is intact. The same all pushbuttons.



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