



Repair Guide

Canon AF35 ML

Version 1.0

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Preamble

I am an amateur photographer with a background in mechanical and robotics engineering. I have owned and used many analog cameras over the years, and have run into my fair share of malfunctions and breakdowns. Over time I have developed some confidence in camera disassembly and repair. I am not a professional and I do not have training in electronics or camera repair.

The purpose of these manuals is to document repairs I have undertaken myself on my own personal cameras. Occasionally I also come up with tweaks and modifications to improve the camera's functionality. If there is no guide on a certain symptom, it's because I haven't encountered it on any of the cameras I have bought and sold, or that I encountered it before I started making these manuals. If I have further problems with any camera model, I intend to update the respective guide. Additional symptoms added to the repair guide will illicit a version change (ver 1.7 → ver 2.0). minor revisions will alter the decimal version number (ver 1.7 → ver 1.8).

I have noticed over the years that certain cameras earn a reputation for being "irreparable". Typically these cameras are built during the late 80s onwards, as microchips and electronics were being increasingly used in camera design. Many people advise replacement, as often it is cheaper than the cost of repair, and tout all-mechanical cameras from the 50s/60s/70s as more future-proof.

Whilst it is true that PCBs can corrode, capacitors can leak and microchips can corrupt, these problems are typically easy to spot, and simple to repair, with the exception of dead microchips. However, I am yet to encounter a broken camera that I can attribute to a malfunctioning controller.

Ultimately, attempting to fix a camera that is already broken is free! before you try, you have a broken camera, afterwards... you probably still have a broken camera. If the camera is particularly important to you, you might want to send it to a professional, but most of the cameras in these guides are "irreparable" and would typically be cheaper to replace.

I won't be held liable for injury (watch out for capacitors), or making it worse though. Undertake any repair at your own risk, and if it does go tits up, I don't repair other peoples' property.

Good luck!

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List of Code Listings

1 Introduction

The Canon AF35ML is a camera that is absent from most film photographer's radar, beaten by the offerings of Nikon, Olympus, Ricoh, and even Contax for those with a fatter wallet. However, on paper it does seem to tick a lot of boxes, some that are even reserved for the very top of the top range. Typically when looking at P/S cameras, (*that's point and shoot, not piece of shit*), we expect a moderately compact camera, with auto focus and powered film advance, auto exposure metering and built in flash. Check, check and check.

In the bracket of mid-range cameras, we can be more discerning, and look for an f2.8 lens, manual ISO compensation or a data-back for example. Well wouldn't you know it; check, check and check once again. The ISO on my particular camera can be adjusted between 200 and 1000, much like the earlier Nikon L35AF, a feature conspicuously absent on the AF2 onwards.

Now when we approach the summit of mount *Olympus*, and talk about the holy trinity of point and shoot cameras, we typically have the Minolta TC-1, Contax T2 and Nikon 35Ti trading blows, ricocheting off their titanium bodies, and unimpeachable glass. This camera doesn't come close. However, it does have a faster lens (f1.9) and it has a feature which strangely seems reserved for cameras at this end of the market, which is a manually activated flash. The titanium bodied icons all boast an electronic memory function which retains your flash settings after each power cycle (turning it off and on). The Canon AF35ML approaches this problem in a simpler, faintly soviet fashion. The flash only comes on if you flick the "flash on" switch. This is honestly a deal-breaker for some photographers, and when I use my Nikon L35, and have the flash bounce up into my face with a startling "clack" every time I half-press the shutter, I can understand why.

So in some ways, this camera can do pretty much everything a Contax T2 can, just with an extra stop of light, a 48mm filter thread and a *couple* of significant design flaws, but it's not fair to compare this camera with a Contax T2. In reality, you're comparing it with a Contax T2 and about a grand in the pocket! For some, the design flaws may push them towards the pricier option. "What flaws" you ask? Well compared to the Contax, there are plenty; compared to cheaper cameras, actually not so many. The plastic body, to me, isn't a flaw, it feels more premium in the hand compared to an L35. The auto-focus, however, is. To its credit, it was one of the first auto-focus systems to be put on a camera, back in 1979, but today that is a very bad thing. It does work, but I've had more than a few blurry photos. The [manual](#) states that it struggles with the following subjects:

1. Subjects without vertical lines
2. Subjects with little or no contrast
3. Subjects with an object in front of them
4. Subjects with strong reflections
5. Subjects that are brightly backlit
6. Subjects composed of very small, uniform parts.

I don't even know what that last one means, although it gives patches of grass or small flowers as an example? Anyway the one I have struggles with even more than that, and you have to pay close attention to the focus indicator in order to not waste shots. Perhaps more irritating than the focus is the idiotic on/off switch, which will cause you to waste batteries through accidentally leaving it on, although at least you'll only be replacing AA's rather than CR2's or CR123A's.

Anyway I was supposed to be repairing this thing, not making a pointless comparison between it and a much better camera, but if you want an auto-focus point and shoot, with manual flash, a 48mm filter thread, adjustable ISO and an f1.9 lens: This actually is your only option, so let's make sure it works.

2 Disassembly

Step 1 is, as always, to remove the batteries and make sure there's no film loaded

Also do a visual inspection and check for signs of battery or capacitor leakage, dents, rust etc.

2.1 Outer Casing

In order to enact pretty much any repair on this camera, the plastic outer casing has to come off. If you can't work out yourself how to strip it, you should probably just quit while you're ahead, but in the interests of completeness I'll point out all the screws.

We'll start with the 2 screws on the door latch side, marked in red below.



Then the screw near the viewfinder on the rear



and to release the rear panel, the last screw is number 4 on the grip side, with screws 5 & 6 being fasteners for the front shell.



To lift off the rear panel, open the film door and pry out the long thin section near the door latch, then just lift away from the frame.

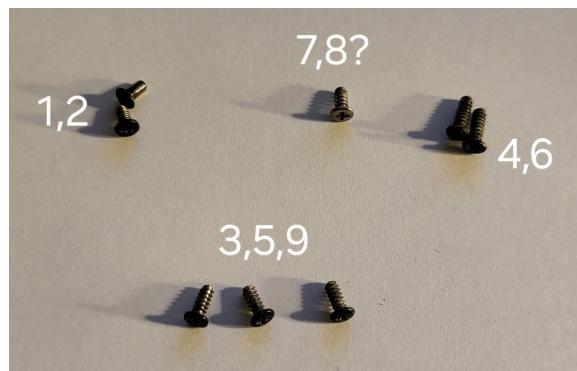
This is the first time you'll see some of the inner workings of the camera, and it is a good place to start looking for obvious damage or faulty wiring.



Pay close attention to the on/off switch, significant corrosion or looseness could be the source of any power issues. Also mind out for the ball bearing in the click spring (arrow below).

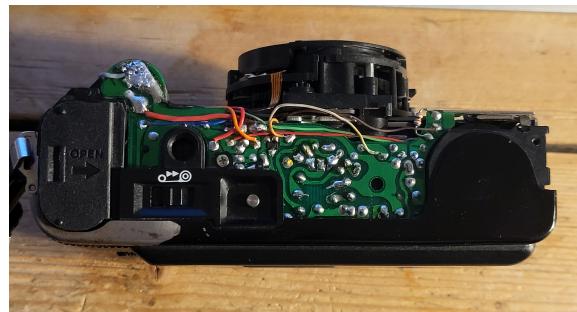
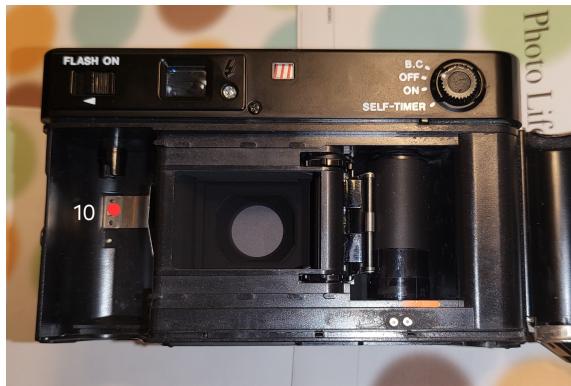


Next we can tackle the front casing, which has a few more screws for a total of 6 (or 7). The first 2 were already removed from the grip side, the next step is to lift up the grip material and remove the screws from underneath. My example had only 1 silver screw in place under the grip material, but there was an empty space for another one below.

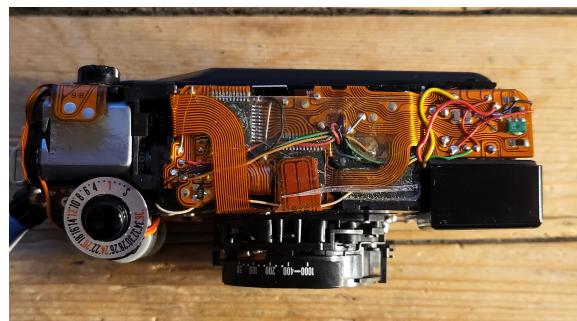


the 9th (or 8th) screw is on the base near the battery door, and the final screw is inside the film compartment, holding in the film canister spring.

To remove the front shell, it's a little stubborn, but you want to press down the shutter button so it can slide over, and pull the shell away from the body as perpendicular as possible. After this you'll have a naked camera. Please enjoy the following reference photos. This is roughly how it should look when it's back together

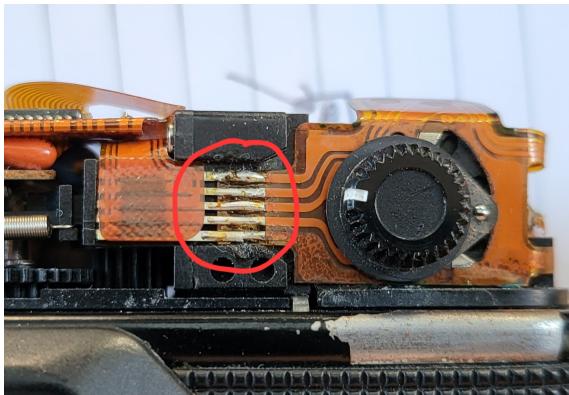


These 10 screws have small differences. The first 2 are shorter than 3, which is the same as 9, but shorter than 4 and 6 which are the longest. 5 might be the same as 3 & 9, but it's a little corroded from the battery compartment. 7 and 10 are the only 2 of the 10 that are silver, but 10 is the smaller of the 2, and if 8 exists, it should be the same as 7. Confused? refer to the picture below, and keep track of your own screws from now on.



2.2 AF Assembly

In order to access the motor and gear train, it's necessary to lift the AF assembly out of the way. Fortunately this doesn't require much de-soldering because the upper PCB is flexible, allowing the whole AF assembly to be folded out of the way. To free the AF assembly, first de-solder the 5-pin power connection by the on/off switch.



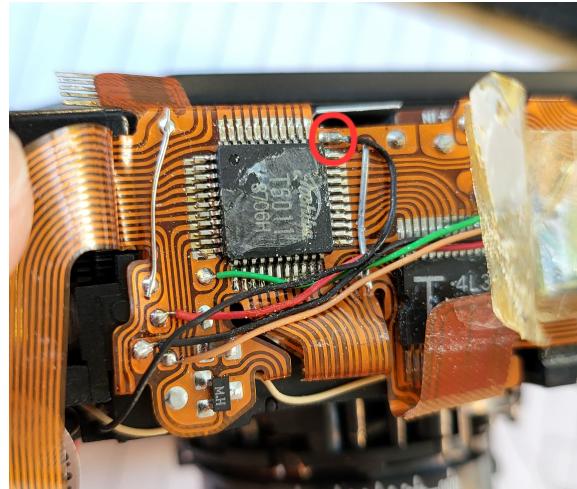
After this, we need to disconnect the flex cable leading to the lens board. To do this there is a padded bar affixed by a single screw that clamps the flex cable onto the contacts, so no soldering required!



Once the flex cable is released, unfasten it from the retaining pin underneath the main capacitor, and slide the flex cable out from under the lens barrel in the direction of the white arrow. This flex cable can be unfolded to reveal the main components of the upper PCB. The sellotape keeping the PCB from unfolding will be toast by now, so get rid of that, you can replace it later.

Once the upper PCB is visible you can de-solder the long black ground wire near the corner of the

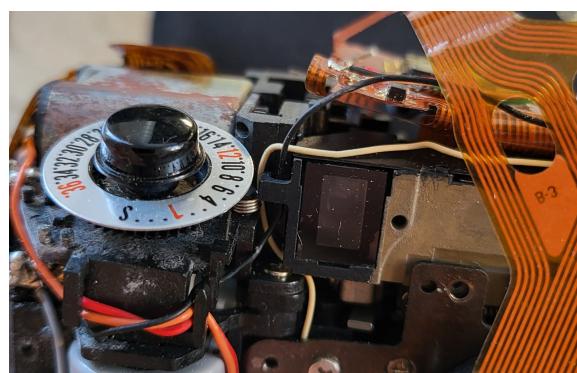
microchip.



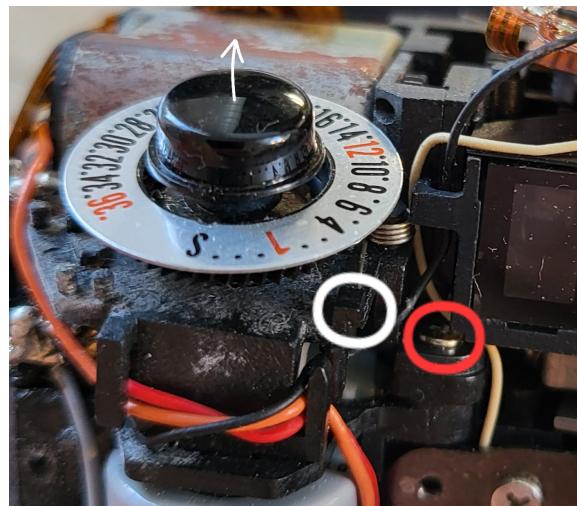
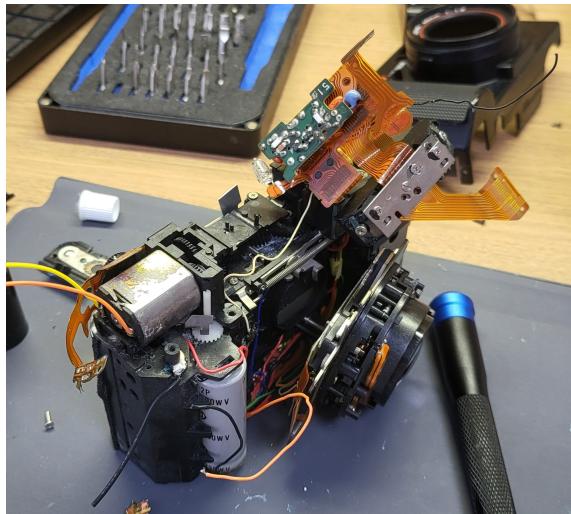
Now the AF assembly can be unfastened from the lens board with the 2 obvious screws



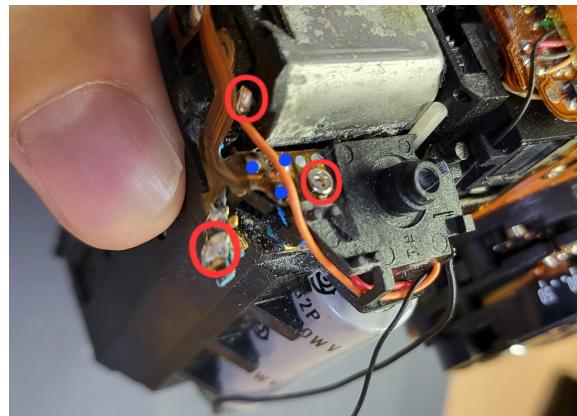
The AF assembly is nearly ready to be folded away towards the flash, but the white wire might get in the way. now the assembly is loose, the white and black wires can be un-clipped from the hook attached to the side of the AF assembly. This is where they should be routed during reassembly.



If all goes well, the AF assembly should now freely slide up and away from the camera body, revealing the gear train beneath. This AF assembly can be gently held over the flash side with some tape or an elastic band to keep it out of the way. It is not necessary to remove the lens board for this procedure, although it has been in the following picture.



The second screw is shown in the image below with a red circle. Also in red are the 2 connections that should be de-soldered to allow the assembly to come loose. In my case, the post that the 2nd screw is fastened to was completely detached due to corrosion, and the same for the solder connection to the battery terminal (hence why it is pulled away in the photo).



The blue dots highlight the solder connections of the shutter release contacts, which I recommend you ignore unless the shutter contacts need cleaning. The shutter contacts are in the form of a triple leaf spring, the top one is ground, middle is half press and the lowest is the shutter release. If the camera fails to focus or release, but the battery check beeps, this is a likely culprit.

2.4 Gear Train

NOTE: If you intend to remove the motor, the first step is to de-solder it from the board, so skip to the next section if you need guidance on that, or just

do it, it's very simple.

The motor is not fastened to the housing of the gear train directly, it's just sandwiched between it and the main body. This makes removing the gear train very easy and require only 3 screws.

3 Troubleshooting

In this section, I will detail, with photos if possible, some of the repairs I have carried out on this camera. The following sections are titled based on the symptoms, or how the camera appears to be broken.

3.1 Doesn't Work

OK, so not the most descriptive symptom to start off with, but when I got this camera it was bricked.

The batteries had melted inside the compartment and mostly dissolved the plastic at the top of the battery compartment, along with a lot of the metal, as shown in the below photo.

