

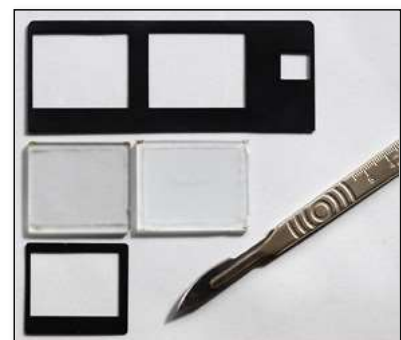


Cleaning the viewfinder of the Mamiya Press Super 23

The Mamiya Press viewfinder is quite nice; large and normally bright. But, after many years of neglect (usually storage in dusty and/or humid places) the viewfinder view can grow dim with fog, and debris and fungus can find their way to the inside. This is what happened to my camera, and on one rainy day I decided to radically change the situation.

I started by removing the top cover. This was easy enough; just unscrew three Phillips headed screws (one on either side and one at the back) and another screw that holds the lens focal distance slider at the back. Once that's done, the top just lifts off. Unfortunately, there is not much to gain with the removal of the top, because all it does is lets you marvel over the complexity of the rangefinder mechanism. I would advise against tempering with it, unless you are a professional repairman. (But then you wouldn't be reading this.) The trouble is, that it is not possible to get to the inside surfaces of the glass covers and the front and rear eyepieces of the viewfinder from here. So back the cover goes.

Try something else... In this model, the black metal plate (or mask) over the viewfinder/rangefinder windows is glued on. So, there is no other choice, but to take a drastic step and pry it off. Luckily, on mine the glue they used was shellac, which could be softened somewhat with methylated spirit. Apply the fluid around the edges with, say, a pair of tweezers and let the capillary action 'suck in' the liquid. Don't soak the system with methylated spirits, though, because it might flow into places where it could cause damage – such as on the mirrors of the rangefinder. Then, carefully stick a sharp implement under the plate and gradually separate it from the glass. Start at the narrow place. The hardest will be around the round rangefinder window, where they used a lot of glue. The following pictures show the black metal cover plate removed and the glass pieces underneath. You can also see the surgical scalpel I used. (It was a major operation, you see.)



Cleaning these pieces of glass already helps somewhat, but more is needed. To dig deeper, the front of the camera should come off. And this is not all that hard to accomplish. First the leather cover needs to be removed. Again, it is glued on with shellac, so the above mentioned procedure applies here, too. The same holds for the name plate. Under the leather and nameplate we can see eight brass screws. These hold the camera front and middle section together. Caution: these screws are hard to undo, so use a good screwdriver with a perfect fit. There are four bolts at the corners covered by silver disks. They are for the extensible back – don't worry about these.



Viola! The 'belly' of the camera cut open. Some foam seal is revealed, which is all but perished. There are two washers on each of the eight points of connection between the front and the main body, but they don't seem to play a role in the alignment. Nevertheless, have a good look at them on your camera, because yours might be different.

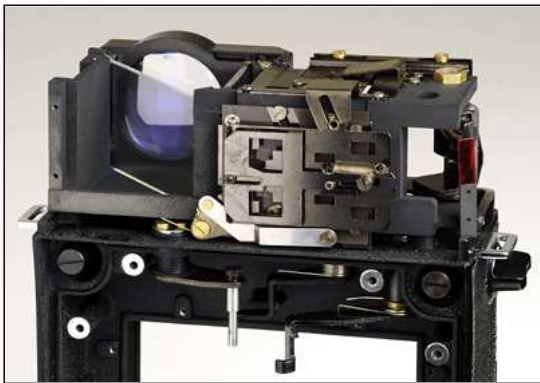


While we are here, just a quick note on some of the things you see here (although you have probably worked it out already): the steel rod hanging down in the middle is the rangefinder coupling pin, the black one next to it brings a red warning sign into the rangefinder spot when the 100 mm lens is retracted into the body, and finally, that complicated system of metal plates next to the viewfinder window is responsible for displaying the parallax corrected golden frame in the viewfinder, which matches the focal length of the lens selected.

Now that the front is removed, I'm closer to the viewfinder's lens, which needs cleaning. But I realized, that unless I take off the top of the camera, I won't be able to remove some of the screws that hold the viewfinder's frame in position. So, here it is; the next picture shows what is under the camera's top. That red piece of transparent plastic on the right hand side is the warning sign I wrote about earlier. Behind it is the swinging mirror of the rangefinder. (More on this later.)



Now, to remove the viewfinder's lens (together with the frame it is housed in), one needs to undo four screws at the four corners. (The removal of the black metal plate over the viewfinder is optional. It is held by a single screw, so it comes off easily.) The screw at the bottom right corner is tricky. It also holds a small L-shaped metal piece against which the end of a spring pushes. Carefully grab the spring with a pair of tweezers and move it out of the way. Now the viewfinder's lens comes off easily. Here is what you get:



A very nice, large semi-transparent mirror is revealed. This is fixed, i.e. it is glued into position at a 45 degree angle to the viewing axis. The mirror that rotates as the rangefinder coupling pin is moved in and out is on the other side. I took the following close up picture to show where the adjustments are done, if required.

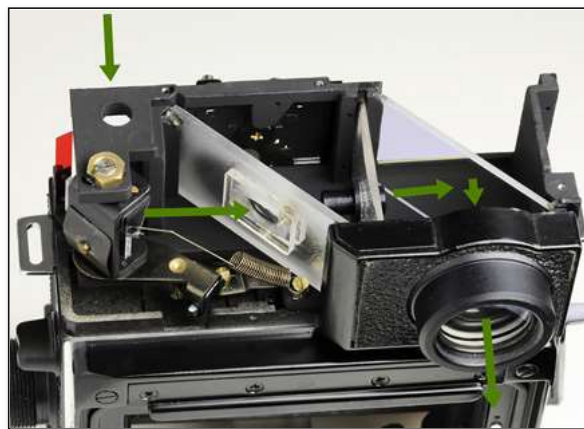


We are looking at the little mirror sideways – you find it under the number 250. It is pinned to an L frame. The vertical adjustment of the rangefinder spot is done with the screw behind the mirror (roughly under the number 150). The horizontal fine tuning is done with the longish silver screw under and to the left of the large spring in the foreground. (Note: if the detail is hard to see, use the Windows Magnifier (under Programs > Accessories > Accessibility) at 2x, or even 4x magnification. The enlarged view is more pixelated, but still intelligible.) It is clear from the previous discussion, that neither of these adjustments can be done from the outside, without removing the top. Too bad a typical user can't do it him- or herself (unless the 'secret' is told).

But back to the viewfinder lens. (After all, this entire exercise was for this lens to be cleaned.) Nothing comes as easy as expected, though. As it turns out, this is not only one lens, but two lenses put together. There is a gap between them, and unfortunately, that is where most of the dirt and fungus resides. The metal frame holds them together and drops of glue, here and there. It appears that the little tabs should have been used for this purpose, but on mine, the manufacturers opted for glue instead. Luckily, the glue was easy to remove and I was able to separate the two lenses. (One remained in the frame, but that was ok.)



At this point, I realised, that the rangefinder spot was still blurry. On close inspection I could see fungus on some glass surfaces that fell in the light's path. The swinging mirror and the large semi-transparent mirror were clean, but I found that there were two lenses in between the mirrors, which were badly infected by fungus. One lens is glued onto the back of the mirror that reflects the light off the focusing frame cutouts and has a hole in it. (Actually, this lens looks like a piece of rectangular glass with a strange cut in the middle of it.) The other lens is inside a black plastic tube. This latter is revealed, when the cover plate is removed. To do this, unscrew the two screws near the front – don't touch any other screws. The following picture shows quite clearly the internal mechanism. I also indicated the light's path for the rangefinder spot with green arrows.



These small lenses weren't easy to clean. I used tiny balls of tissue paper and cotton attached to the end of a piece of flexible wire to get inside these areas. It would have been easier, if the glass plate could have been removed, but they were glued and by disturbing them the factory calibrated alignment would have been ruined. Anyway, the end result was good, and the rangefinder spot has become much clearer, brighter.

The last thing to do is to dismantle and clean the viewfinder eyepiece. To do this, peel off the leather and unscrew the four screws underneath. (Don't bother with what looks like a retaining ring in the round window. That leads to a dead end.) Be careful as you remove the pieces and note the orientation of the lenses that come out. The first one is a biconcave, but the inside surface is slightly flatter. The other two are plano-convex with the curved side facing inwards. Here is a picture of all the bits:



Are we done yet? Yes, well, almost. After cleaning, the whole thing needs to be put together. This fairly straightforward. Nevertheless, I must admit that this project turned out to be bigger than I initially thought. Hopefully, you read through to the end before embarking on this work and can have a second look at the condition of your viewfinder and ask yourself; is it really as bad as to warrant all this effort? If the answer is yes, I wish you good luck!

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