

Fixing a common focusing problem with the Minolta Multi Pro film scanner

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Disclaimer: Nobody except yourself can be held responsible for any damage caused by using the following guide.

Read carefully through the whole guide before even thinking of using a screwdriver. You'll need screwdrivers with a cross tip (known as Phillips screwdrivers).

Intro

After receiving a used Multi Pro that I had bought on an auction site on the Internet, I was very pleased to find out that it produced beautifully focused scans of 35mm film. On the other hand, my entire medium format scans were totally out of focus and I could not focus them manually. Obviously, that was very frustrating. Moreover, the reseller insisted that the scanner was functioning correctly before shipping it.

So I started searching the Internet. By reading the posts in the Yahoo MultiPro Group (<http://tech.groups.yahoo.com/group/multipro/>) I found out that I wasn't alone with that problem. I also found out that the scanner has two lenses, one for 35mm and one for the wider formats, and that the scanner switches between the two by moving the lens carrier back and forth using a string that runs on wheels. I learned that my problem might be due to the fact that the string has come off its wheels during transportation. Apparently, this is likely to happen when the focusing carrier isn't properly secured before shipping.

To secure it correctly, the carrier needs to be parked in a specific position first (using a key combination on your computer) and then it must be secured with a screw at the bottom of the scanner. This is explained in the scanner manual. (Key combination in the DIMAGE Software: Windows: press Ctrl, Shift and L; Macintosh: press Command ⌘, Shift and L).

So the typical symptom of this particular problem is that the scanner only focuses correctly either with 35mm or with medium format (whichever setting was used last before the string came off).

From there, I decided to try to fix this problem on my own, and succeeded. It was only after having put my disassembled scanner back together that I realized that I should have taken some pictures in order to share my experience with other users that have this same problem. So I disassembled it again, this time taking some pictures.

The following is a short guide on how to put the string back in its track. Typically, this should resolve the focusing issue. If it doesn't, the problem lies elsewhere. In that case, you'll need to find further support. I myself wouldn't know where the problem could be.

The method described here is not necessarily the best way of doing this. Any suggestions for improving this guide are very welcome.

Anyway, here is how I did it:

1. **Open the scanner and bring into position the bridge that carries the light assembly**

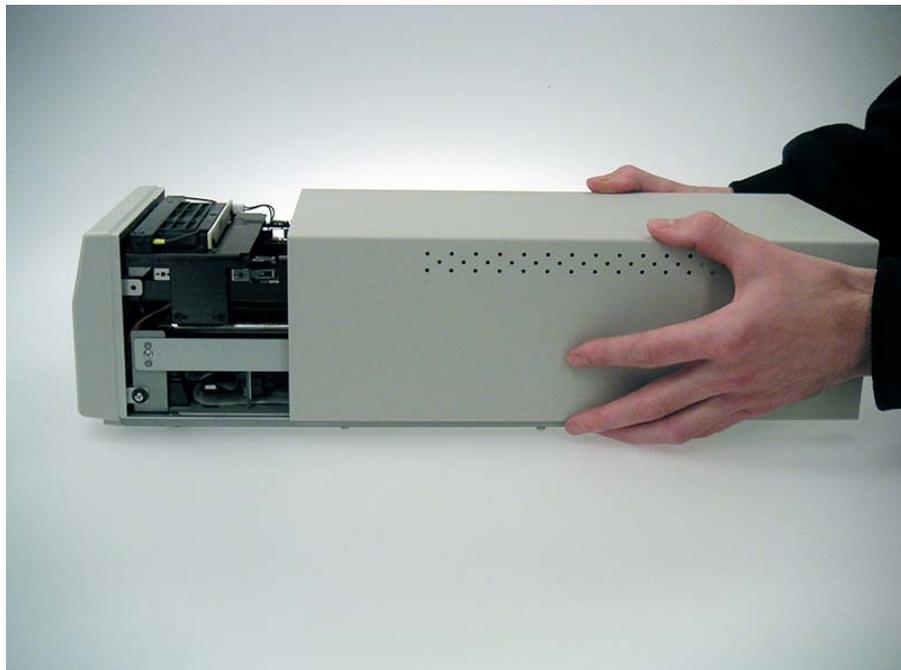
To do so, follow steps 1–2 in Erik de Goederen's guide on doing the LEK modification ([scanhancer_lek_manual.pdf.zip](#) downloadable on www.scanhancer.com in the downloads section). With his kind permission, I reproduce **these steps** here:

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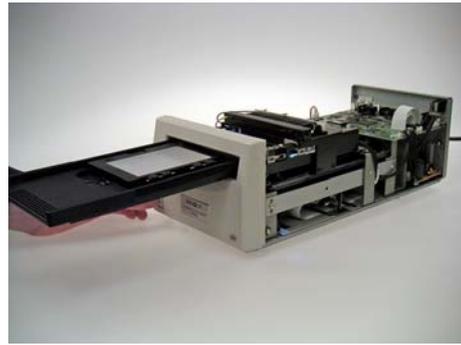
1. Fully unplug the scanner and unscrew the **FOUR** screws holding its cover. Do not remove any other screws!



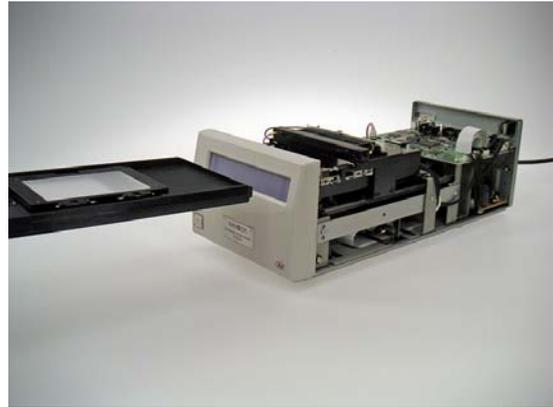
Then slide the cover back.



2. Plug the power back in (yes, this is hazardous, so don't touch the non-isolated parts that carry the high voltage). Then put the MF film holder in the scanner mouth (you will feel a light resistance to push through). Turn the scanner on and wait until the scan head has moved past the film holder.

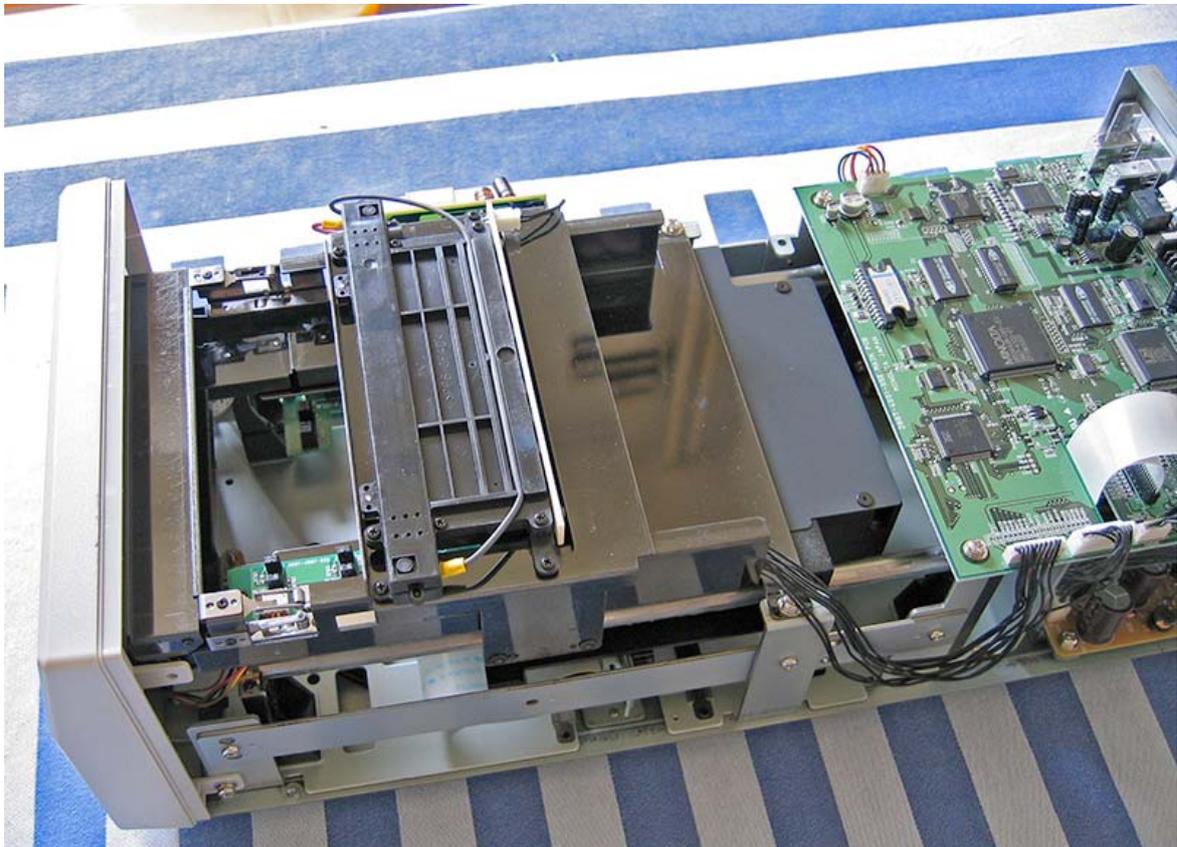


Turn the scanner off and unplug it. Remove the film holder.



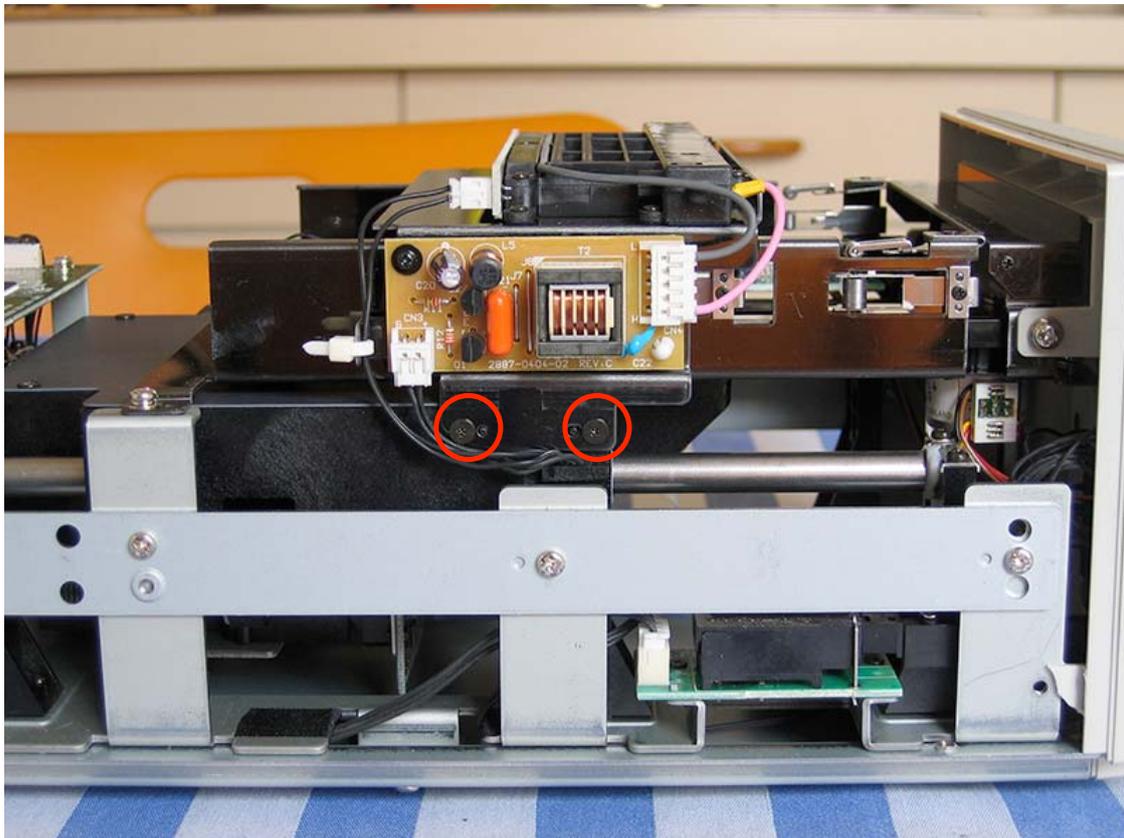
<end>

Here is what the scanner looks like after having completed the steps mentioned above:



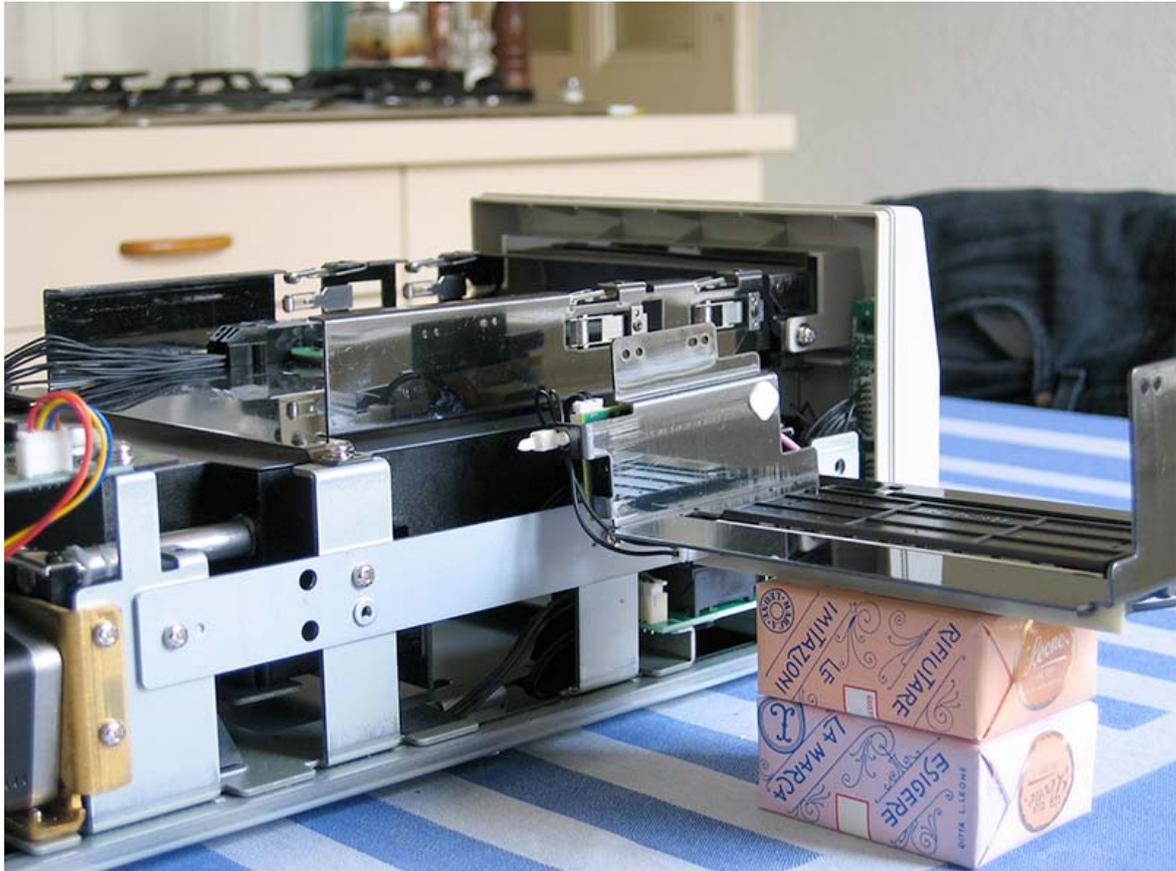
2. **Remove the bridge that carries the light assy**

Unscrew the 4 screws that hold the bridge into place (2 on each side):



At this point, the bridge is still kept well in position as it is held on both sides by pins. You can see this by closely looking at it (between the 2 screws on each side).

Gently unclip the bridge on the side without cables, flip it over to the other side and rest it on some support you have handy, just high enough so that the cables aren't stretched. As you can see, I used two boxes of candy. When flipping it over, do it gently and keep an eye on the cables. You don't want to jerk or damage them.

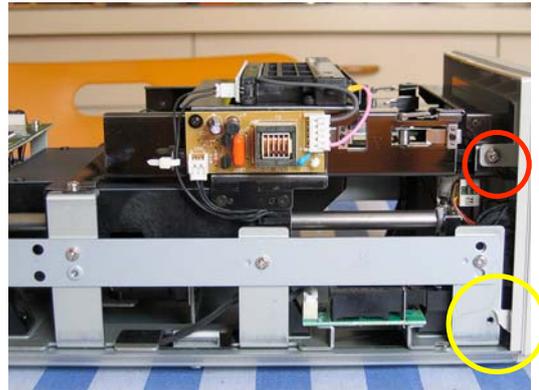


3. **Detach the front panel**

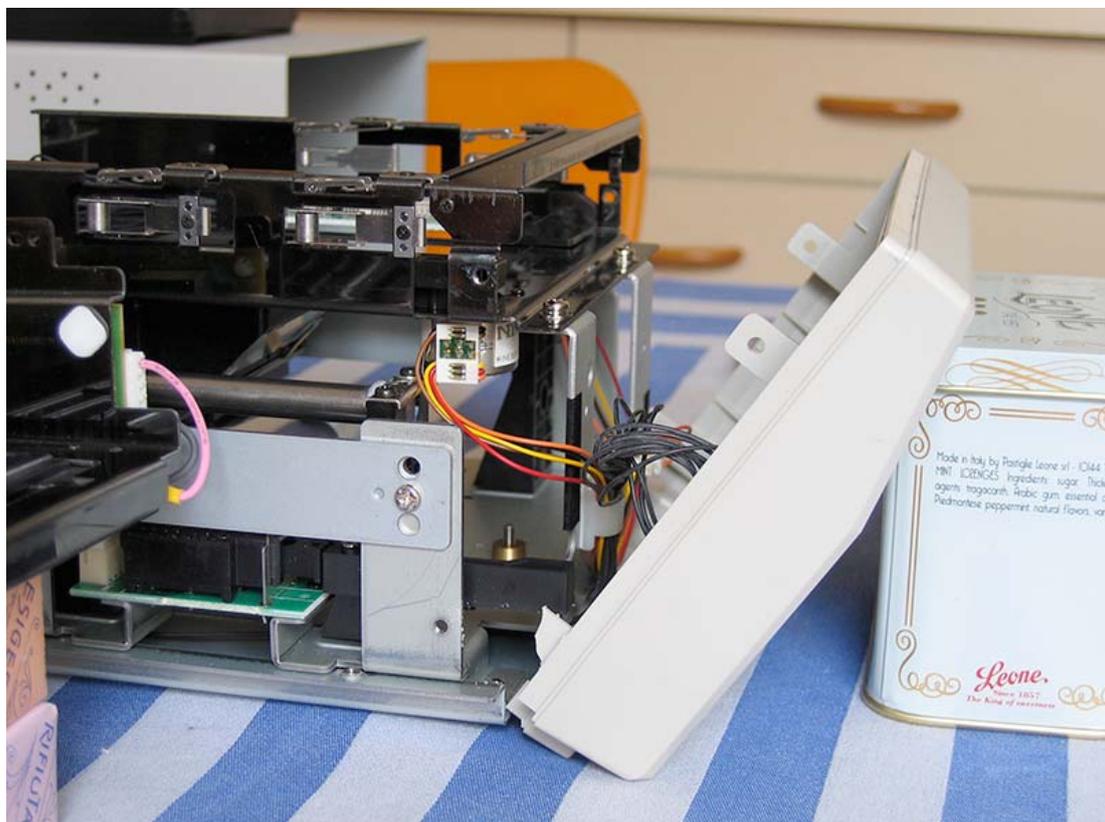
This step is necessary in order to gain access to two screws that are hidden under the top of the front panel.

Note that the front panel actually has 4 places (4 plastic ears) where it can be secured to the main structure. It seems to me that Minolta shipped these scanners with only 2 screws holding the front panel. At least, mine was that way. As you can see in the picture below on the right (yellow marker), on my scanner, one of the plastic ears is broken off, so I just use the other one to secure the front panel.

To detach the front panel, unscrew the 2 screws holding the front panel:

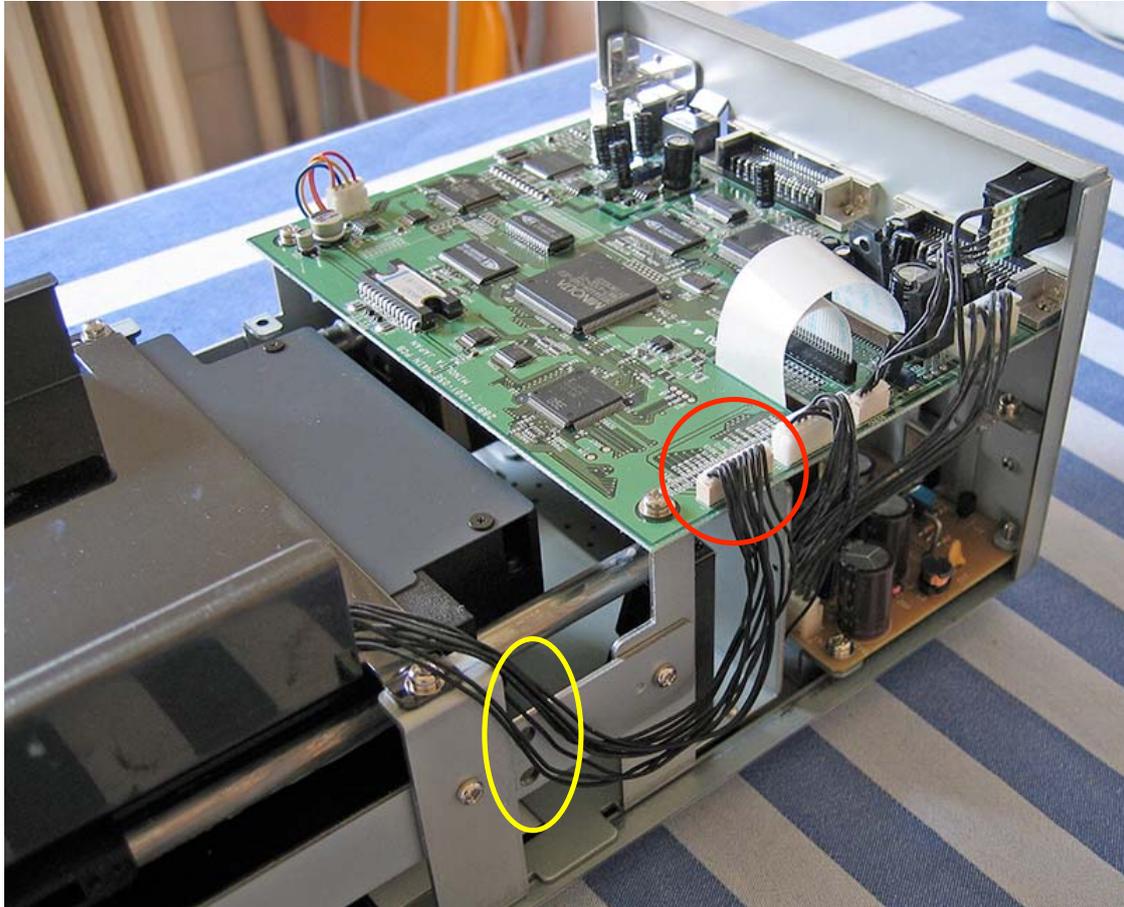


Then gently pull the panel slightly forward and rest it on something. As you can see, I used a box of candy, again.

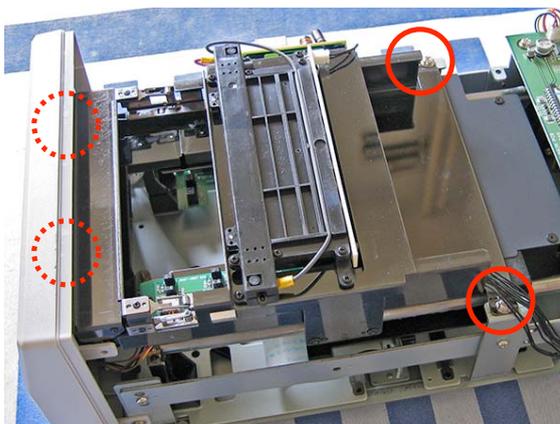


4. Remove the main big black metal part (let's call it carrier)

Now you have access to all 4 screws holding the main black metal carrier. But before unscrewing it, you need to unplug the cables connected to the green electronic main board (red marker):



If the cables are secured with a plastic strap to the metal construction (where the yellow marker is; already removed here), cut that strap away, making sure you don't cut the cables. Use an exacto knife or a pair of small but good scissors. Then very gently, without jerking anything, unplug the white plug with the cables from its socket on the green main board. I myself did not use any tools for this, just my fingernails on both far ends of the plug. Take your time; you don't want to screw this up. **NEVER** pull on the cables.



Now you can unscrew the 4 big screws holding the carrier in place. Note that the plate sits well positioned as it rests on pins.

(2 screws are under the already removed front panel.)

Now flip over the whole carrier towards the front and somehow make it rest leaning on the already loose front panel.

(I admit, this sounds and looks a bit dodgy but it worked well for me. One could probably unplug all cables in order to completely remove the piece, but I couldn't bother, so that's how I did it.)

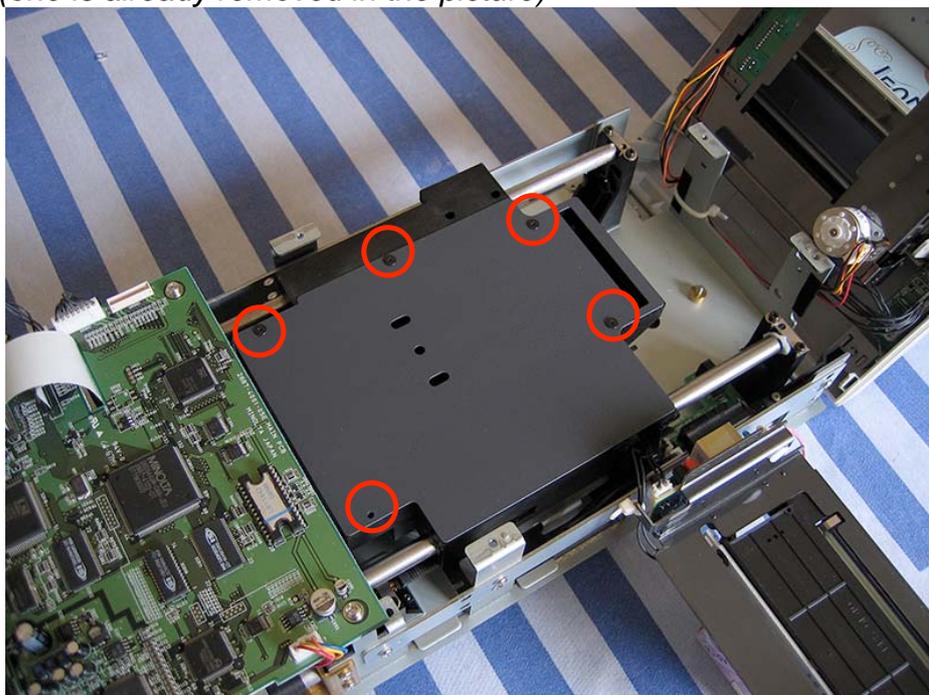
Just make sure no cable is harmed and that the carrier rests securely in that flipped-over position. I used the casing of the scanner as a supplemental stop.



5. **Remove the black plastic that covers the lens and focusing assembly**

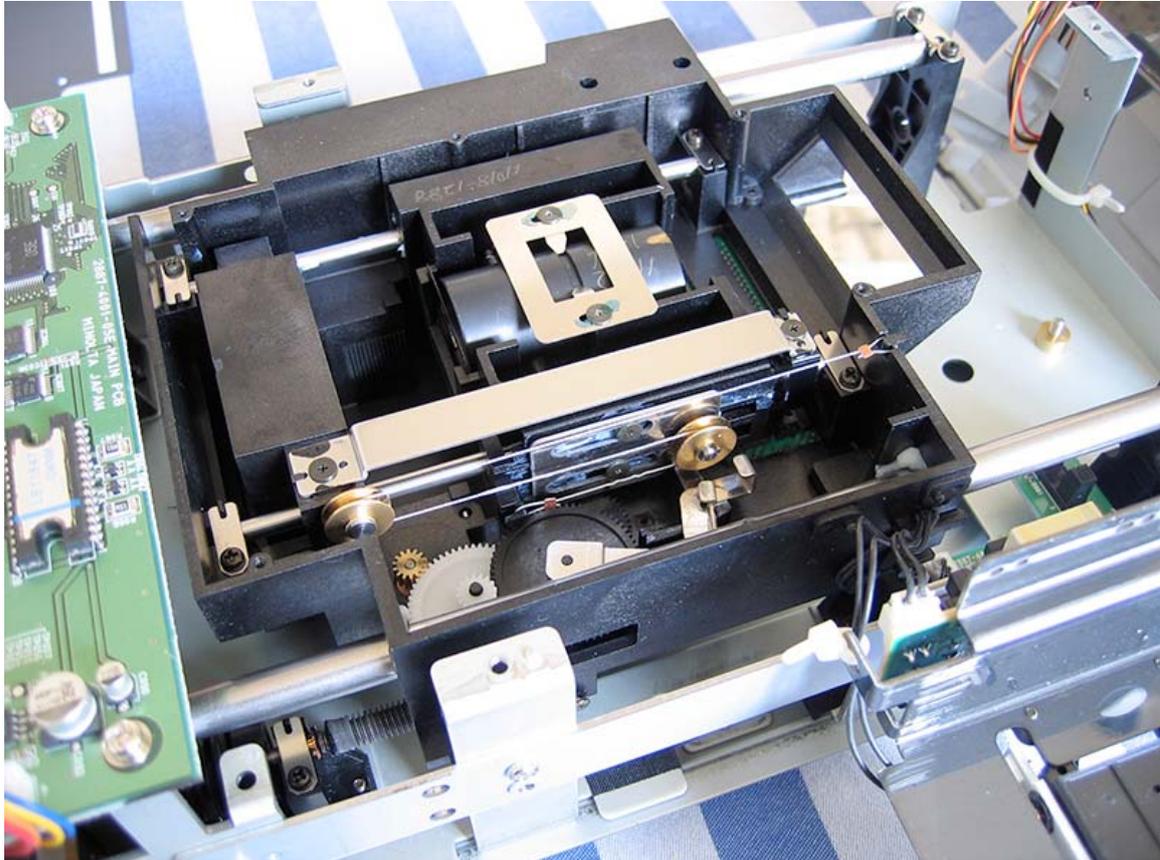
Remove the 5 screws holding the black plastic cover:

(one is already removed in the picture)



Lift the cover off and put it aside. Now comes the part where you definitely don't want to have dust flying around!

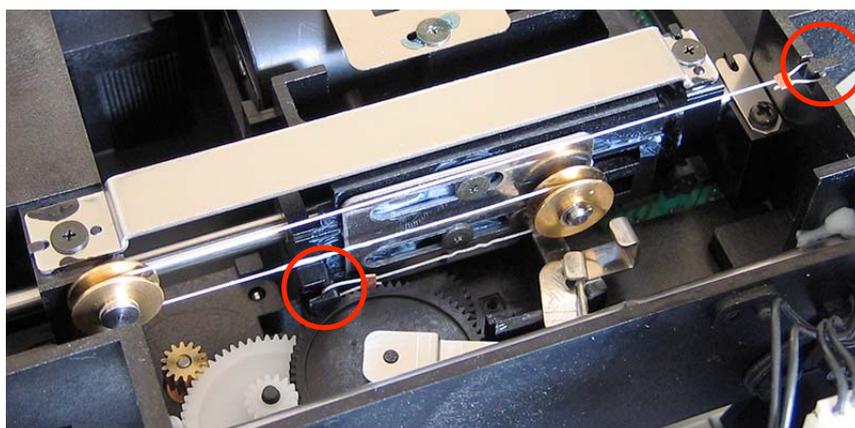
You can now see the two lenses, the mirrors and the focusing mechanism in all its beauty. Note the two brass coloured wheels and the string running through it:



This is, I believe, the way it is supposed to look when everything is ok.

The first time I opened up the scanner to fix my focusing problem, the string was not running in the wheels and lay loose. That's apparently a typical thing to happen when the focusing carrier is not properly secured before transportation.

If that's the case, put the string back in its original position by fastening one end of the string to one of the hooks, run the string through the wheels as shown, and then hook up the other end.



It's actually as simple as that. I used a pair of tweezers and a fine metal hook (like the ones used by dentists) to hold and guide the string through its trail.

6. **Put it back together**

When you're done with placing the string back in its original position put everything back together with care, close the scanner, plug it in, make a scan and see if the focusing problem is fixed.

Best scanning wishes,
Andreas

PS: You definitely should try that Italian candy; it's the best! (*Pastiglie Leone*, since 1857 the King of Sweetness)