

Article 1

"The frontmost ring on the 140 lens is not connected to anything internal. It is for reference only, but provides some useful information. Let me take you through an example. Turn the ring to align the orange 2.25 with the red index mark. This tells you that, when the subject to film plane distance is 2.25' (about 0.69 meters), the subject is 2.5 times larger than the image on film. Said another way, the MAG is 1/2.5, or 0.4 (if you care). On the rearmost scale, the green "+1" tells you to increase exposure by 1 step to compensate for the lens extension required to focus at that distance. While you're there, notice the green T-shaped marks left and right of the +1. Placed at about 2.1' and 2.7', they denote the range within which you should add 1 step of exposure. If you get a bit closer than 2.1', you would add 1.5 steps of exposure. Closer than about 1.875', you would need to add 2 steps of exposure. Back toward the other end of the ring, notice that from about 6.5' down to about 2.7', you would add 1/2 step of exposure. The MAG scale is of little importance for most work, but the STEP scale is very handy for determining exposure compensation. To use this ring, all you have to do is measure the subject to film distance, turn the ring to that value, and read the exposure increase. Keep in mind that all those numbers become useless if you screw in a supplementary closeup (diopter) lens.

The rearmost ring on the lens is important for critical work because it moves internal lens elements. Its purpose is to help maintain flat field focus and optimum image quality throughout the operating range, with or without extension tubes. Notice that this ring has three scales. If you are not using an extension tube, use the long white scale. If using a No. 1 tube, use the green scale. If using a No. 2 tube, use the short white scale. If using both tubes in tandem, just turn the ring all the way to the last red dot and leave it there.

The numbers 0-45 on each scale correspond to the lens extension distance. In practice, you first focus normally, then from the scale to the right of the bellows, read the lens extension in millimeters. Set the appropriate scale on the lens to that number, then re-focus.

Article 2

Practical Operating Instructions in 10 Easy Steps

It should go without saying, but I will mention it anyway. You should be using a tripod, remote cable release and the mirror lockup function when doing macro photography. My cable release is a dual trigger that locks up the mirror and fires the shutter. I use the waist level finder so I also need to use a separate exposure meter.

I tend to use as small an aperture as possible, but that is a creative call on your part. Refer to the Mamiya web site for lenses not intended with use with the extension tubes, but a quick glance at the exposure compensation table should be a good place to start.

Step 1 – Get your subject ready and meter your scene. Record the values for reference. Make sure your meter is set to the correct ISO rating.

Step 2 – Make your lens and extension tube selection. Note: In this example I will be using the 140mm f/4.5 Macro lens with the number 1 extension tube. As mentioned above this means my distance from my film plane to my subject is between 2.5 feet and 1.9 feet. I want to note that you would need to use the No. 1 + No. 2 in order to achieve 1:1 magnification.

Step 3 – Align your floating ring to "No. 1?". At the rear of the lens you will see a ring that has three red dots referring to the various extension tube combinations. Adjust your lens to align the red line with the "No. 1?". You should see a 20 behind the red dot.

Step 4 - Focus. With your camera at the right distance as indicated in step 1 focus your camera. I always flip up the magnifier and rock my focus knob back and forth until I am absolutely sure I have critical focus.

Using RB RZ Macro Lenses.txt

Step 5 – Read your bellows extension amount as indicated by the scale on the right side next to the focus knob. Record this value. It has to be a value between 0mm and 46mm because this is the range of your bellows. Let's assume your bellows extension is 15mm in this example.

Refer to the illustration below for your bellows adjustment:

Step 6 – Adjust the floating ring to match your bellows extension. In step 5 we had a 15mm bellows extension. In step 3 we set the ring to the "No. 1" position which corresponds to 20mm. Referring to the scale move the floating ring to the left and stop on the line indicating 15mm.

Step 7 – Refocus. Check your focus one last time for maximum sharpness.

Step 8 – Set your desired aperture using the ring on the front of the lens and refer to your meter reading. Let's say you wanted maximum DOF and set the lens to f/32.

Step 9 – Using the reference table you will note that a 15mm bellows extension equals a one stop exposure compensation.

Step 10 – Make exposure compensation adjustment. You will have to adjust your aperture or shutter speed by the correct value before taking your exposure. In our case we could adjust the aperture from f/32 to f/22. If we wanted the maximum DOF to stay at f/32 then you could adjust your shutter speed from let's say 1/60 to 1/30.

In another example, if you were using the 140mm macro lens with the number 1 extension tube and your bellows was set at 30mm your exposure compensation would be +1.5.

Note that between 0mm and 27mm your exposure factor is +1 and 28mm to 46mm is +1.5. Most of the time you want to control depth of field in your macro work so this would mean a longer exposure time. In this case if you metered at 1/60th, you would need to compensate 1 1/2 stops to a position on your shutter dial between 1/15 and 1/30. You could change your aperture setting from let's say f/22 to a half-way position between f/11 and f/16.