Regardless of the equipment you use, there are several things you should know about photographing close-up. To begin with, the short distance between camera and subject means that any camera shake or vibration will show more in the final print than if the subject were shot from a greater distance. Use a tripod to hold the camera steady whenever possible. This is especially important when using bulky extension tubes or bellows.

Keep in mind that close-up photographs have an inherently shallow depth of field. Set the smallest possible lens aperture to maximize depth of field. You might consider using a fast film and/or a long shutter speed (definitely with the camera on a tripod), both of which allow you to close down your lens aperture for increased depth of field.

Automatic focusing systems sometimes have trouble when focusing close-up. You may have to focus manually by turning the focusing ring on the lens. Alternatively, you can set the lens at a close focusing distance (using the distance scale, if your lens has one) and move the camera toward or away from the subject until it comes into focus, rather than actually turning the focusing ring to sharpen the picture.

You also may have to adjust exposure when photographing close-up, especially if you are using an extension tube or a bellows in which the distance between the lens and the film is physically increased as you focus more closely. The increased distance reduces the amount of light reaching the film, causing the film to be underexposed.

The solution is to add more exposure when focusing close-up. How much more depends on how close to the subject you are and the type of equipment you are using. Figuring this out can be daunting, but fortunately most cameras have TTL light meters, which automatically compensate for light loss by suggesting or providing additional exposure. However, make sure that extension tubes or bellows work with the camera's meter. Newer models will work automatically, especially those made by your camera's manufacturer. Older models and some independent brands may not.

You may have to take a reading with a handheld light meter and compensate manually with older equipment—and with equipment that doesn't have TTL metering, such as many medium-format and all large-format cameras. You can be precise by figuring the exposure correction mathematically. To do this, use a ruler to measure the extension and apply the formula in the instruction book that comes with your extension tubes or bellows.

But you may not have to worry about this because the problem of underexposing film when focusing close-up can usually be resolved by adding a stop or two of exposure. And you can accomplish this by partial bracketing for more exposure, without resorting to complicated mathematical formulas. Make an initial exposure at the settings your meter suggests. Then make a second exposure at one stop more, and possibly a third exposure at two stops more. For example, if your meter suggests settings of f/5.6 at 1/125, take a picture at that exposure, then another at f/4 at 1/125, and a third at f/2.8 at 1/125. One of the resulting negatives should be correctly exposed.

Reproduction Ratio

The real issue with macro lenses is not how close to the subject you can focus, but what reproduction ratio it produces at its closest focusing distance. Reproduction ratio is the ratio of the size of the image on film to the real-life size of the subject. At closest focus, a true macro lens produces a reproduction ratio of 1:1 or 1:2, where the film image and the subject are the same size or the subject is only twice as large as the image. But many so-called macros get close enough to produce only 1:3 or greater reproduction ratio, where the subject is at least three times larger than its image on film.