

Copying Artwork

WITH A COPY STAND

A copy stand is the easiest way to take photographs of artwork (or anything that is flat and less than about 16 by 20 inches).

Preparation

Screw camera onto copy stand, making sure back of camera is parallel to artwork. If it is not, rectangular material will be rendered trapezoidal. If lights are not placed at 45 degrees to material, adjust them, making sure lights are pointed to the center of artwork or a little beyond center. Set your camera to a zoom setting about midway between wide angle and telephoto. All zoom lenses bend straight lines, but the effect is almost always less at this setting. For more accuracy you could do tests to see where the exact 'straight-line' setting for your zoom lens is.

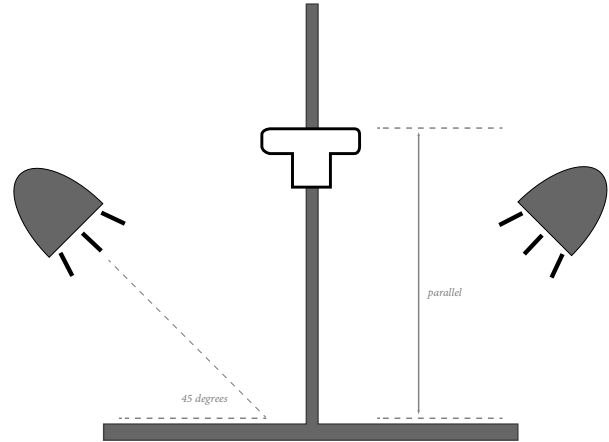
Setting exposure

Turn off any lights other than your copy stand lights. If you have exposure controls on your camera, set it to manual and the lowest ISO. Adjust aperture to f-11 (on most lenses f-11 is the sharpest aperture). With artwork in place, adjust shutter speed to the speed necessary to obtain good exposure: If your material is a neutral gray, then it should be neutral gray in the resulting image, if it is light, then it should be light, and dark should be dark. For more accuracy, take a test photograph of a white sheet of paper. Adjust your shutter speed so that the histogram for the resulting photograph shows the mountain near (but not at) the right side of the scale.

However you arrive at your shutter speed, use the same speed for all of your photographs. In this way, dark material will show up appropriately dark and light material appropriately light.

Setting the white balance

If you have your camera set to save JPEGs, you need to adjust the white balance. One way to do this is to set it for 3200k, or indoor lighting (usually represented with a light bulb symbol). For more accuracy, set it manually using a white sheet of paper (see your camera instructions). For even more accuracy, take a photograph of a white sheet of paper at first using RAW format. Take the rest of your photographs using RAW format and set all to the same color balance (color temperature) as your white sheet in your image editor like Photoshop. Use RAW image format for the best quality.



Focusing

Ideally, every time you move the camera height you would want to focus manually. In practice, this usually doesn't work very well. Instead, use the automatic focus on your camera. If your camera has a hard time focusing on material, temporarily place something with detail on it (like a sheet of typing). Press the shutter button down half-way to lock the focus, then remove the sheet and take the photograph.

Taking the pictures

Even if your shutter speed is fairly short, there is always the possibility of moving the camera slightly when pushing the button to take your photographs. To avoid this use the self-timer so that the camera fires after you push the button. Many cameras have a 2 second delay for the self-timer which is made for this purpose.

It is also a good idea to turn off any image stabilization (or vibration reduction) if your camera has these settings. If your camera is on a sturdy support having this setting on will actually increase blur.

For even sharper images you could use a remote release. Some cameras even have a way to lock the mirror up before you take the photograph so that the movement of the mirror won't jar the camera, although this is generally not needed unless you have a very flimsy copy stand.

Take and look

Take several shots, then view them on the computer. Enlarge them to see if there are any problems. If there are straight lines (like the edges of the artwork) are they straight? Is the artwork framed okay? Is your exposure good? Are your colors fairly accurate or is there a color cast? Is everything sharp? When you are sure everything is okay, take the rest of the photographs.

Using glass

Sometimes artwork needs to be flattened, in which case a clean sheet of glass over it is the best solution. The problem is that this will increase the likelihood of reflections, especially of the camera or anything else in its general area. Look close, especially at the test shots you look at on the computer. If you are getting reflections of something, try to make that thing darker. You can do this by using black paper or tape, or limiting the amount of light 'spill' hitting the camera. Be very careful putting anything on the light housing themselves. They get hot. One solution that often works is blocking your camera with a letter-size piece of black mat board. Cut a hole in the center of the black board the same size as your camera lens barrel. If you are using a DSLR you can make this hole just big enough so that it will slip on the lens and stay. If you are using a smaller camera you can tape it to the camera.

WITHOUT A COPY STAND

Sometimes you can't use a copy stand because there isn't one available or your artwork is too large to be evenly lit with the copy stand lights. In this case, you can use a tripod, two lights, and a pin-up wall to make your own very big horizontal copy stand.

In the illustration of the copy stand we are looking at it from the front. Instead, imagine it as a lighting set-up looking from above with the artwork pinned to a wall.

Place the camera so that the back is parallel to the artwork. This is a little more difficult than with a copy stand. One easy way to do it accurately is to have someone hold a mirror flat on the center of your artwork. When you can see your camera centered in the mirror you can be sure everything is parallel.

How far away the lights (at 45 degrees to the artwork) should be is also something you will need to figure out. If they are too close, the work will not be evenly lit. If they are too far away, you will have to use overly long exposures and you run more risk of reflections, especially if the artwork has glass covering it. Turn on and off each light to better see how each is illuminating the artwork. Watch for any areas which are brighter with each light (hot spots).

How you arrive at your exposure, color balance, etcetera is just like with the copy stand.

WITHOUT ANYTHING

Sometimes you might not have the luxury of having any equipment other than a camera (you definitely need the camera). In this case you probably want to find a shady spot like a porch to take your photographs.

You want as much light as you can get while staying away from direct sunlight (which would accentuate any defect in your work). Also try to find a place that is amply lit (assuming you don't have a tripod) from the side. You can use a wall to put the artwork on or just put it on the ground and point the camera down.

Setting exposure

Just use the 'program' setting on your camera. The light may change, so you don't want it on manual. Also, the program setting does a pretty good job of determining the optimum shutter speed and aperture combination. For artwork that is lighter in tone, set your EV adjustment to +1 or +2. If the artwork is darker, set it to EV -1 or -2. Experiment.

Setting the white balance

Set your white balance to daylight, which is usually represented by a house with lines beside it.

Focusing

Just let the camera focus how it will. If your camera has a hard time finding a focus, then point it at another part of the artwork, hold the shutter half way down to lock the focus, then recenter and take the photograph.

Taking the pictures

If you are hand-holding your camera you definitely want image stabilization (or vibration reduction) turned on. Also try to hold your camera against something. Your forehead works well if you are using a DSLR. If you are using a smaller camera with a viewing screen, put the neckstrap around your neck and pull against it to steady the camera. If there is something else like a chair handy to steady the camera with, use it!

If your pictures turn out blurry, then you may want to also set your ISO to a higher setting. Set it only as high as you need to get sharp images.

Other considerations

The success of this method really depends a lot on the reflective qualities of the artwork you copying. Thick acrylic or oil paintings have gloss surfaces not parallel to the main surface. Glass presents daunting reflection problems. Pencil lines may disappear if graphite is reflecting light badly. And so on.

But, if you are careful and thoughtful, you can do very high quality copies with many types of things with nothing but a camera and your keen eye focused on what you are doing.