

# *Photographing Jewelry*

Elena Adams



## *Introduction*

Photographing your own jewelry is very satisfying. Learning to photograph and clean your photos is not only is it challenging and enjoyable, it can boost the quality of your portfolio or web store tremendously.

Aside from the technical details and skills, the number one that you should take from this guide is to play! Not sure what a button or setting does on your camera?

Try it! You won't break it. Play with

Photoshop. You'll discover more tricks and

toys that way, and you always have the Undo function if the results are no good. This is not a

complete guide to Photoshop, or photography, and you won't be an expert by the last page. There is

always more to learn, but as long as you can experiment, and do it joyfully, your skill will increase

quickly. This guide will help you with the basic steps to producing high quality jewelry photographs

and get you comfortable with many of the basic concepts in both photography and picture

manipulation.



## *Section 1: Your Camera and Studio*

### *What kind of camera to use*

With the right set up and patience to clean up photos, you can produce professional looking photos with almost any camera.

Your camera must have the following:

- Macro mode
- Good automatic setting, or manual/program mode
- White Balance setting

If you are using a camera with interchangeable lenses you will want a specific Macro lens. If you are not ready to invest in one, a good quality, all purpose lens will work fine. If you make a lot of rings, earrings and other tiny pieces, you might want to buy a set of extender tubes. They are a cheap alternative to purchasing a separate macro lens, and can produce a similar effect.

The focal length of a macro lens will depend a lot on the size of your jewelry. For example a 90mm is perfect for tiny products, rings and earrings, but for full necklaces you have to stand a long way back (or above!) to get the whole necklace in the frame. Take your camera to a camera store with some of your jewelry. Most places will let you try out lenses, which will help you pick the perfect one.

### *What lighting to Use*

Lighting is quite possibly the most important part of setting up your photo studio. Good lighting makes all the difference in creating a professional looking photo.

There are a few basic tips that will help you determine if your lighting set up is working:

- Photos need to be realistic and truly representative of the jewelry.
  - Thus, your lighting should be color-neutral.
- Studio lighting usually intends to simulate outdoor lighting conditions.
  - While shooting outdoors is a good substitute for a studio set up, you have little control over the environment and pictures can be too harsh or heavily shadowed.
- Since you're simulating sunlight, light from the top left.
  - Even if you don't consciously notice it, photos with lighting from other angles look slightly odd.



*Object lits from angles other than top left don't look right*

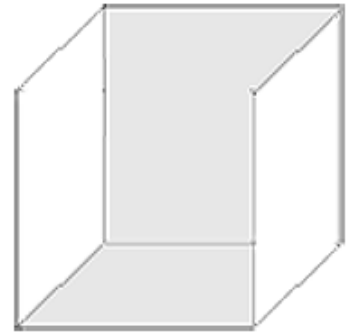
### *Setting Up Your Lights*

There are a number of easy to use studio lighting set ups that come ready to use. Products like the Cloud Dome, portable lighting studios, and Silver Dome overhead lighting will help you get good photos every time. Some of these are quite an investment, and take a lot of room, but they will cut down on clean up time.

### *Making a Light Box*

It is possible to make a simple light box using basic objects and lights from home improvement stores. Here are the steps:

1. Take a cardboard box that is big enough to lay out a piece of jewelry along with props with plenty of room around the edges.
2. Remove the top flaps and cut off the front face (see image)
3. Using tape or glue to secure, cover all the inside edges with craft paper, or bright white printer paper. There should be no card left visible. If possible, attach a large piece of paper in a way that creates a curved edge at the bottom, back edge, rather than a sharp corner. Try to avoid breaks in the paper in areas that will be centered in the frame frequently. If you can't avoid breaks, make sure the joins are flush so as not to create extra shadows.
4. You can now light up your box using desk lamps, or the large flat, clip on lamps available cheaply from stores like Home Depot. You will want at least two light sources.



*A sketch of a light box*

Even if you are using a large overhead light like a Silver Dome, you will probably want a second smaller light to help break up shadows; this can be a regular desk lamp. With all your lights, make sure the bulbs don't have logos or other printing on them as this might show up as shadows in your photos.

### *The Benefits of White Backgrounds*

We'll talk more about this when we get to cleaning your images, but white backgrounds do have some distinct benefits. They're easy to clean and color correct; they make your jewelry look crisp and professional; there's no risk of putting someone off with a prop you think is adorable, but a viewer finds tacky or distracting; and your photos will look uniform. If you do decide to use backgrounds or props, and you are displaying your photos all in one place, such as a website, make sure they look like they have something in common. By all means play with different looks and styles, but once you've decided, stick to it! It's very difficult on the eye to be forced to process a new theme with every picture, and it will diminish your jewelry.

### *Colored Cards and Light Boxes*

Now that your lighting is strong, consistent, and clean, you need to make sure your jewelry won't disappear. For jewelers that tend to work in silver you may find that the silver looks a little dead against the white background. There's an easy trick to adding depth and interest to your pieces without sacrificing your backgrounds and set up. Take a piece of black or dark gray cardboard,

roughly the same size as the back of your light box and tape it over the white. This will create a darker reflection of the black card along parts of the jewelry. This works perfectly on chain mail and textured designs. Still not enough color? Add a piece to each side of your box. Try playing with other color cards to see the effects they create. This can be a great trick to use if you use tips (more later). Your summer beach display might be lacking some life. Add a red or dark yellow card to give everything a dark glow. Just be careful not to include the backdrops in your photos, and don't stray too far from a natural look.

### *Camera Settings*

If you want to know more about any of these terms search for them at [Wikipedia.org](http://Wikipedia.org), or find a good macro book. One of my favorites is [Macro & Close-Up Photography Handbook](#) by Stan Sholik and Ron Eggers (Amhert Media, 2000)

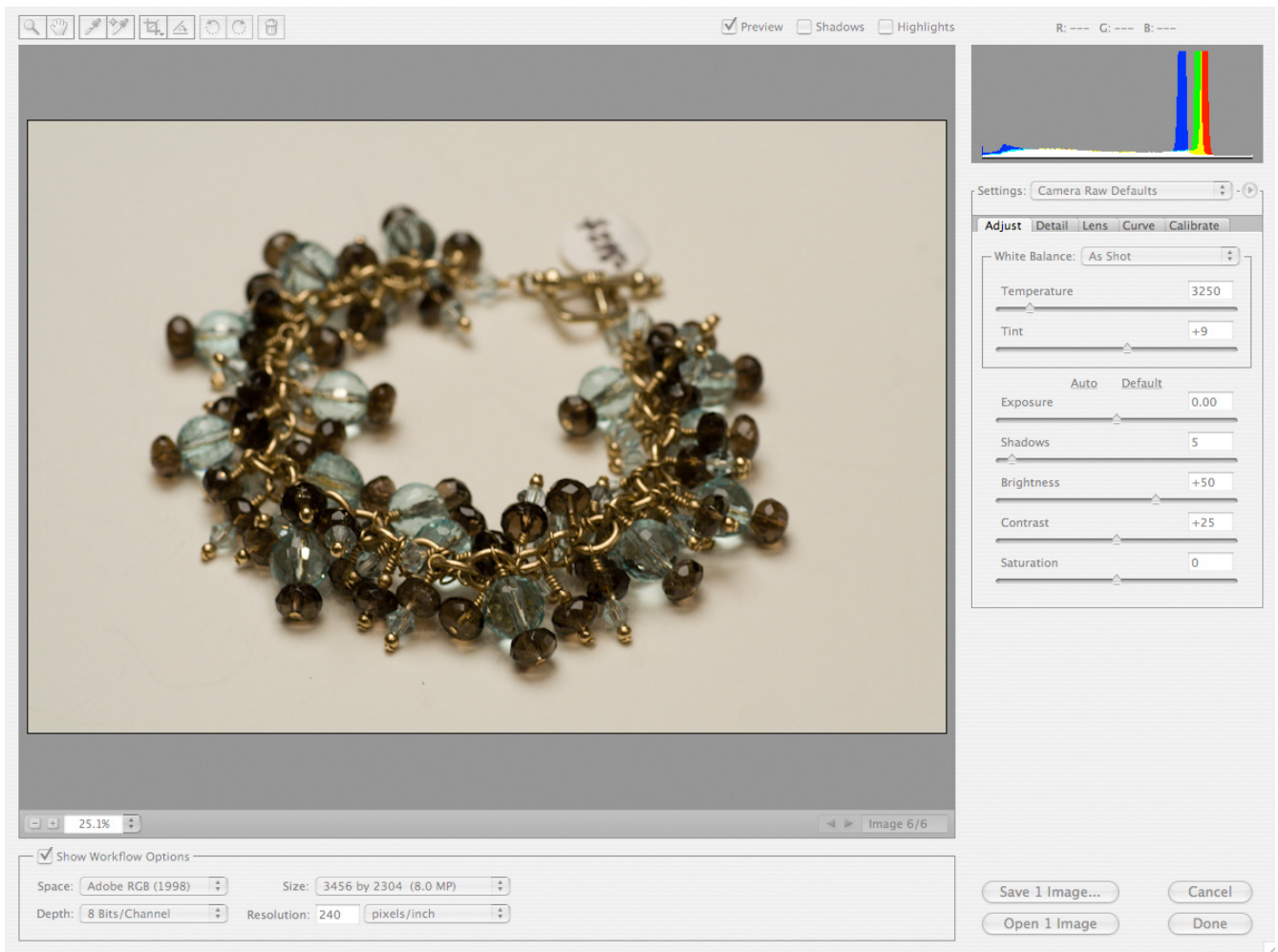
### *"P" vs Manual*

Most digital camera users use nothing but auto or P (program) mode. If you intend to get serious about photographing your jewelry, break out of P mode now! Manual gives you full control of all aspects of the shot which will make the difference between a decent photograph and a great photograph. Manual mode is not hard to use, it just takes a little practice and some basic knowledge of what all the numbers mean.

### *Raw or jpg?*

High end cameras and DSLRs have multiple formats available in which to photograph. The majority of "point and click" cameras store images in lossy JPG format, meaning they "lose" a little information as they're being created. Your camera may give you options as to the size or quality of the files it creates. For the best finished result, photograph in the highest quality available. Of course this means you will not be able to take as many photos at a time before the camera fills, but it means you will start with the most "information" in your images as is possible. If you are only intending to use your photos on the internet, you can use a lower setting. This is all going to depend on your camera, so try a few different sizes and see which one you like working with best.

RAW is a camera specific format that takes photos, as the name implies, in their rawest form. It stores images as minimally processed data, straight from the camera sensor. Your camera probably came with a cd that contains a program that lets you convert from RAW to any other format. Photoshop CS2 and CS3 also read RAW images. The beauty of these files is that you can do a lot of processing to the file before it loses any information in processing to .jpg or similar format. You can change the brightness and contrast, sharpness, and best of all: the white balance. You will be able to scroll through all of the available white balances and select the one that looks most realistic, making adjustments if necessary. Once you are happy with the look, you can save your images as JPGs ready to be cleaned in Photoshop.



*An example of a Photoshop Raw format editor. Adjustments to white balance, exposure, saturation etc are made before opening into the regular Photoshop controls.*



*By changing the white balance in the Raw editor, drastic changes are possible.*

### *Macro*

In general, all the jewelry photography we are looking at falls under the category of macro photography; that is, close up photography. If you are not using an SLR with lenses intended for macro use, you will need to put your camera on its macro setting. The button or option in the menu will usually look like this:



Putting your camera on macro settings means it will be able to focus at close distances. Trying to take photos without it will leave you with blurry images.

### *White balance*

Most modern cameras have very good auto white balance functions and they will get the color right most of the time, especially if you are shooting in daylight or mottled shade. When you are using your indoor studio, you may find that you need to adjust the white balance. Since you will be using light bulbs to light your subjects, you should have your camera on Tungsten view. Its symbol looks like a light bulb.

If it's just not working, you have two options. One is photographing in RAW mode where you can make changes. The other is using the "custom white balance" function. This is great for white backgrounds. Light your studio surface but don't put any jewelry down. Set your camera as though you were going to take a regular photo; you want the colors to be representative so if you normally photograph at 1/100 shutter speed, set it up like that. Take a photo of the white background. Under the menu in your camera select custom white balance. The camera will now ask you for a sample image. Choose the photo you just took. Now the camera will know that when it sees that "white" it should read it as true white. You will still need to clean the background later to make it appear even and get rid of any dirt or scratches on the surface, but now your jewelry should be interpreted as the right colors.

### *Playing with aperture*

Aperture is a measure of depth of field; that is, the difference between having the whole image in focus, or just a tiny portion of it. Aperture is very important in macro photography, in jewelry work it can be a great artistic tool. The numbers can be a little confusing. A small number means a large aperture, and a small depth of field. A large number means a small aperture, and a large depth of field. Another quirk of aperture is that a large aperture (small number, small depth) produces a much brighter image than a small aperture, so you may have to adjust the exposure as well to compensate. The best aperture is going to be determined by your environment, the way you want the image to look, and the way your camera works.

Aperture is the most fun of all the settings, and you can get very creative using it. It is important to note that since sections of your macro subjects will probably be out of focus, the point you focus on will be vital. More on this later.

The depth of field you want to use will be entirely up to you and there is no formula for this. If you want very representative photos with little artistry, a large depth of field will put the whole subject in focus. You'll avoid your viewers having to guess the nature of the back of the image. This can be good for displaying earrings, or hand made pendants, or any other subject where a customer would want to see the whole thing.

On the other hand, you may have necklaces or bracelets where the back is not very interesting, the pattern is the same the whole way around, or you want a central gemstone to really stand out. Using aperture you'll be able to draw the focus to a single area, and delicately fade out or blur the back of the subject.



Wrong focus point



Correct focus point, at the front middle

### *Shutter Speed*

Since jewelry is not going anywhere and movement is not a problem, shutter speed is used to set how much light is let into the sensor before it closes again. Shutter speed is measured in seconds from 1 or more to 1/8000. Most cameras will go between a few seconds and 1/4000. These settings may be written without the "1/". The longer the time, the brighter the image will be, but the more you risk camera shake and movement. The smaller the time, the darker, but more steady the image. Shutter speed is usually the last thing I set because I will pick my desired aperture first.

The relationship of Shutter Speed and Aperture is one of trade offs. You can sacrifice some image depth to get more light, letting you shoot at a faster shutter speed, and vice versa. After a while you will probably find a "sweet spot" for your settings, where the depth of field is suitable for the look you want to achieve and you only need to make minor adjustments.



### *ISO*

If you just can't get your image bright enough and a tripod is not available, there is one last resort: iso. Back when we were only photographing with film, the iso setting adjusted the "speed" of the film: its sensitivity to light. This means a higher iso number will brighten the image, taking less light to expose it, but the quality of the image will suffer. The same is true in digital cameras, although of course it is done digitally, rather than with film. In non-SLR cameras setting the iso higher than the standard will create images visibly grainier or noisier than normal. In SLRs you can set the iso a little higher than normal without causing too much damage to the photo. It is fine for web images and small images where the size is small enough to hide the noise, but once you print them the grain will be very obvious.

### *When to use a tripod*

Camera's will vary, but for most DSLRs you can't shoot below 1/80 shutter speed, without starting to see camera shake. Cameras with image stabilization will let you use slower shutter speeds without affecting the image, if you just can't get it bright enough, turn to a tripod. They'll help you steady the camera and work at shutter speeds you can't normally shoot in.

Tripods are also great if you want to perfect a single shot. Set up your camera, pick the right focus, and then you're free to move around your jewelry and props, and play with the camera settings without having to refocus every time and guess the right angle over and over again.

White backgrounds have the advantage of reflecting a lot of extra light back onto the jewelry. For dark backgrounds, use a tripod.

### *Focusing*

There are a few tricks to getting the focus right so that your photos look natural. The most important thing is that viewers will always expect to look at the very front of the subject. Unless there is a particular point in the image that you feel should draw the focus, you should always aim to have the very front of your subject in the sharpest focus. If it is not, viewers will be confused for a moment while they try to bring the front into focus in their heads, and then look around for the sharp point. Therefore, pick out a part of the jewelry that grabs attention, and move it to the front of the image.

Some cameras will let you set the focus point manually without adjusting the lens. It will break the view area into regions and you will be able to select which region the camera should prioritize. Note that if there is nothing in the region, the camera will get confused trying to focus on nothing.

### *Remote shooting from computer*

Some cameras will allow you to take photos directly from a computer. With all the benefits of a tripod, you also make sure the photos is exposed exactly right, the color is realistic, and you didn't add blur, without having to guess from the camera window or loading the images onto your computer. You can change the camera settings right from the interface too, so once you've set up your scene and your angle you can work on everything from the computer easily.

## *Section 2: Using props to create shape*

What do you do when you have a delicate piece of jewelry that doesn't look good unless it's worn? Short of using a neck form, props can be used to simulate the shape a piece of jewelry will take when it's worn. Make sure you clean them regularly. The better your camera, the more likely it will show up every speck of dust on your props. Keep a soft glasses cloth or photographer's bellows handy to get rid of dust instantly. If you wash your props, make sure they are completely dry before you use them or they'll glisten and reflect strangely.

### *Molding Clay*

A photographer's best friend. Keep a supply of white molding clay on hand at all times, such as Fimo or Sculpey. Since a lot of your photos will probably be taken at a steep angle, flat objects may not be visible. For large flat beads, pendants, or interesting clasps, take a small pinch of clay and prop up the back of each, so that it is more visible from your camera angle. Don't over exaggerate, of course, and don't let any of the clay show, but used discreetly, this is a fantastic method. Molding clay can also be used to secure uncooperative pieces in place. If you're shooting over larger props and chain keeps slipping, use a small pinch of clay in the same color as the prop to hold it in place. Always use the smallest amount that still works. Cleaning clay splatches out of picture is not always easy.

### *Drinking Glasses and Vases*

A elegant look for getting shape and style from jewelry that doesn't hold shape on it own. Chain designs and long earrings work very well here. Some good liquor stores sell miniature cocktail glasses in plastic or glass, which work well without taking up your entire frame. Cleaning these picture is not going to be easy, so make sure you're well on your way in Photoshop before attempting these props.

### *Perspex or Plastic Rolls for Bracelets*

For chain or flexible bracelets, making them stand up can be almost impossible. Roll up a thin slice of tough plastic that will hold it's shape, and slip it into your bracelet. It should be thin enough not to show through the bracelet. If you can see little bits of it, you can probably fix it in Photoshop later. The hard plastic displays sold for watches are also great for this. If you shoot on white backgrounds you can try using a white version, or even a piece of cardboard. However, be sure that you don't create any unwanted shadows.



### *Fabric*

Fabric can create a luxurious look, add shape, and be a nice variation from white backgrounds. Here's how to select the right fabric: Hold it up to the light. If you can see through it pretty clearly, it is going to complicate your photos. Can you see little glowing bands running across it, like organza or silk? Don't use it! Especially when doubled, you'll see these "rivers" or bands very clearly.

If you want to use a fabric with a pattern, the size of the pattern is important. Since your jewelry is relatively small, a large pattern will be hard to see, where as a tiny one will clutter the scene. Say you want a jewelry theme of picnics. A nice checkered red and white cloth would look great, but a regular table cloth will probably have checker boxes so large that your jewelry will only cover a square or two. For this

theme, find a fabric with a print small enough so that your jewelry spreads across at least 4 four squares.

To get shape out of your fabric, try bunching it up and laying jewelry across it. If your jewelry weighs it down too much, place small rocks, or crumpled paper underneath to force a shape.

When you get to cleaning your photos, you will probably find you need to over brighten slightly more than you normally would.

### *Wood*

A nice, rich wood grain is a nice background for jewelry. As with fabric, make sure the grain fits well with the frame of the photo. Be sure there aren't any distracting knots or burls too. A varnished piece makes nice reflections and glows better than an unfinished piece, so a wood coffee table or deck works well. Be sure not to create highlight spots with your lamps, by angling them to get enough light, without direct reflections.

### *Learn to play with props.*

Digital photos are essentially free! So why not play with new ideas. Was a particular prop too hard to clean up? Scrap it and try something else. Experiment with crazy props, and you might stumble across something you love. Go to a craft store a look through all the aisles. You're bound to find lots of things that will work perfectly in a photo. Just because it wasn't made for it, doesn't mean you can't use it.

The macro world is smaller. Remember our picnic theme? A picnic basket in the background would look great, but a real one would be way too huge. Once you crop and size down your picture, all you're going to see is a blob of basket weave. It's vital to make sure your props are recognizable. There's nothing worse than staring at a photo trying to figure out what the large blob in the background is supposed to be. No one will be looking at your jewelry! How about doll's house furniture? A doll's straw handbag or hat could be perfect. Don't worry about the jewelry looking huge and out of proportion to your doll props. Aim the camera at a low angle, set the aperture high, and they will look like they're further off in the background.

### *Some ideas for props:*

Flat rocks – don't pick anything too round, or your pieces will slip off.

Sticks with lots of nice knots – great for draping chain so it keeps some shape.

Jewelry boxes – luxurious jewelry boxes add sophistication to the photos.

Flowers – add color to any design.

Fake ice cubes – these are great for adding height to your image, and jewelry will drape nicely over them with some clear tape to hold it in place.

Gift boxes

Wax fruit – jewelry will look rich.

Just make sure the "fruit" doesn't produce non-realistic reflections

Sand – no reflection problems here. I've heard worse excuses to go to the beach!



### *Shooting in nature*

Clean up and get rid of clutter from the ground. Nature is pretty messy, and with a macro photo, it will very easily busy up the whole scene. Every scrap of dirt will be fighting for attention. If you want a nature scene but have trouble controlling the environment, try to use natural props to your advantage. Try large leaves as props instead of the forest floor. With a little work you can get the same effect, without having to mess around cleaning the ground up, only to discover a slug in your photos. You can also take the whole thing inside and arrange it in your studio, so that you avoid lighting problems as well. If you can fake a look, it going to be easier.

*Warning:* Don't overdo the props! If you are creating images for your website, or brochure, you don't want the props to complicate the overall look. Let your jewelry shine! It might be a good idea early on in your project to choose a theme or set of consistent-looking props that you can repeat throughout your photos. This will give your photos unity.

### *Using aperture with props to avoid distraction and clutter*

It's time to combine what you've learned! If your props still look like they're fighting for attention, but you still want to create a setting for your jewelry, you can use aperture settings to obscure them a little. Shorten your depth of field and just focus on the jewelry. As long as the props are still recognizable, they'll be blurred out and subdued. Now they'll support, not fight your jewelry.

### Photographing Fine Gemstones

Good quality gemstones are one of the hardest things to shoot so that they retain their luminescence and color. A white background will show through translucent gemstones, making them appear muddy, and affecting the color. Think about the first thing you do when you pick up a fabulous gem: you hold it to the light to see its purity. We can simulate this by photographing on clear perspex.



Perspex can be bought at a lot of craft or stationary shops. It should be tough enough not to flex under jewelry, as bends will reflect the light and create shadows. If you can't find anything tough enough, the glass out of a picture frame, or a cheap clear perspex placard holder will work perfectly.

*An easy perspex set up for photographing fine gemstone jewelry where light moving through the stones is important.*

Elevate the perspex by placing it on two glasses of the same height. You can prop it up using almost anything, but remember that a dark object will reflect in your jewelry. To get extra light through your gems, angle a lamp so that it shines from below, or bounces off the white background below.

You'll find that this dampens shadows and creates truly brilliant gemstone photos. When angling your lighting, be sure you don't create bright reflections in the perspex from the bulbs. Create shadows with your lamps as usual, and any extra reflections will be cleared out in Photoshop. This also works well for large glass beads to help set them apart from the background.

### *Specialty backgrounds*

Other than fabric, professional jewelry photographers rely on many other kinds of backgrounds for high end jewelry photos. The two you'll see around most are black perspex, and mirrors. The main idea with each of these is to create reflections of the jewelry.

### *Black perspex*

High end jewelry magazines are full of ads with this effect. The finished result is beautiful and elegant. This is particularly good if you are using diamonds, cubic zirconiums, or pale toned gemstones like green amethyst. The gems will glow out of the dark without looking flat against the white background.

Black perspex can be bought in a number of places, but any dark reflective surface will do. Again using your lights and a good camera angle, create a nicely sized reflection. You will almost certainly want to use a



tripod to get enough light here. You can increase the iso setting in your camera, but increasing the noise will defeat the purpose of these top notch photos. Here it is particularly important that your lights do not hit the background. Try to make the background look as dark as possible. Small spotlights can be used to create highlights on the jewelry without brightening the background.

### *Mirrors*

Mirrors are fairly easy to shoot on. The only guidelines you need to be aware of are that your surface is completely dust-free, and that you are not picking up anything extra in the mirror like a messy room, a light fixture in the ceiling, or you! The angle of the camera is the trick here.

## *Section 3: Cleaning Photos*

This guide was written using Photoshop CS2. With the release of CS3, some of the menus and layout of the program have changed. The basic techniques are no different, so refer to your program's manual for guidance.

A lot of "mistakes" in photography can be solved with Photoshop. From dirt on the background, to an image that starts too dark, Photoshop will let you create excellent web-ready photos.



This image will clean up very well. There's lots of contrast in the jewelry, the color balance is close to natural, and the focus is correct.

The web is a very forgiving medium for photography. Everyone's monitor is a little different, so there's no way

to guarantee perfection from the viewers end. As long as product photos are clear and give a great impression of the actual item, you can get away with a lot.

However, if you are intending to print your photos, particularly for commercial use, such as ads and brochures, getting the photo right is far more important. Every artifact, scratch and careless brush stroke will be amplified in print, so you can not be too careful.

This guide will focus more clean up for web and amateur photographer quality.

### *Choosing the right photo is half the battle!*

- Pick a photo that is neither too bright, nor too dark. You want as much surface contrast visible as possible.
- The product should be nicely distinct from the background.
  - Too close and you will spend too much time selecting and removing the background.
- Color should be as close to realistic as possible.
  - It's not worth wasting time coloring portions of the image. If you can get it right in the photography stage, the clean up will be a lot easier.

Adjust the RAW files. If you have photographed in RAW format, you should make adjustments directly first, either in Photoshop or your camera software. Make any necessary changes to the white balance, brightness, contrast, exposure, temperature, saturation until it looks good. You won't be able to clean the photo at this stage. The best thing to do here is to slide the scales around while checking back with your jewelry to be sure you haven't strayed. Once you're happy, save or open the file in Photoshop.

#### *Using Levels (Image -> Adjustment -> Levels)*

- 60% of the time you can use the eyedropper tools in the Levels tool to get an almost perfect image. There are three eyedropper buttons – the first is for black, the second for mid-gray, and the third for white. Use these to select sections of the image that correspond to black, mid-gray and white. If you are shooting on white, you need only select with the white tool. If this does not work use Ctrl Z to undo the change.
- To adjust, drag the right-most tab to lighten and define the image. This is most important for photos taken on a white background. It will "drop off" all the dirty white pixels and leave the bright ones behind. Don't go too far, or you'll lose detail.
- The center tab will change the exposure.
- The left-most tab changes the darkness. Pull it to the right to darken the image completely. This is also helpful making black backgrounds look closer to true black.

If the image looks too dark, or has lost some detail, go to the Brightness/Contrast tool (under Image -> Adjustment menu). Don't over contrast the image, as it will start to look fake. As a general rule, the numbers you end up selecting for Brightness and Contrast should be similar. If anything, for web use, over brighten the images, leaving the Contrast a few points lower.

#### *Using the Wand Tool to make backgrounds white*

With the wand tool selected, click the part of the background that looks close to white. Your adjustment setting will vary, based on the difference between the background color and the product. If the product is selected with it, change the number in the tool box (near the file menu) to a lower number. Select more of the area by shift + clicking.

Check your color tools and make sure that white is chosen for the back color. Feather the selection to smooth and soften the area (under Select) the press the Delete button to whiten the area.

- Never feather more than 5-8 points. For very delicate pieces (e.g. filigree and chain), feather by 2.
- Over-feathering will bleed into the edges of the product.
- Watch the edges of the product when you press delete. If they look paler, undo, and feather less.
- The smaller your image, the less you should feather by. It is measured in pixels.

#### *Sharpen the image once or twice (under the Filter menu).*

- If you sharpen and see a white speckle, undo.
- The picture should look crisp, but not fake.



#### *What size and save quality are best*

The final size will be determined by where you are using them. For a website like beadshop.com all our photos are 300x300 pixels at 72 dpi. For a photo album site or portfolio, 600 pixels may be better. Always take a look at your image at 100% zoom to ensure you have the size right, and to check for artifacts.

If you will be printing, always save at quality 12 and 300 dpi. This is a really large file, but no information will be lost. For web, save at the lowest setting possible, without affecting the look. As you select numbers, you will be given a preview. In general 7-8 for web pictures, 9 for high quality gems, 4-6 for thumbnails.

#### *Don't have Photoshop?*

If you don't have, or can't afford Photoshop, there are some alternatives. Adobe has a stranglehold on the market at the moment, but there are other companies making good software. Your camera may have come with some programs. Try them out, or read online forums to find out what other people are using and what they think of what they've found.

My favorite free image program is called The Gimp. [www.gimp.org](http://www.gimp.org) The interface is not wonderful, although they are improving it, it's a pain to install if you don't know computers well, and it can be clunky at times. However, it is an excellent tool, capable of all the basic functions and features of other expensive programs. I still think Photoshop is worth investing in, but if it is not an option, try this out.

#### *Finishing touches*

Once you've cleaned your photos, make sure you test them against a white background. If you adjusted your color balance or brightness after using the wand tool, the "white" background may be far from white. You will also want to make sure you didn't miss a smudge at the edge of the picture which is hard to see when you're working against Photoshop's gray background.