

All About Borderless Printing

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Most newer inkjet photo printers now offer options for borderless printing and using those options leads to a number of questions that I've seen from people confused about certain aspects of borderless printing. Have you tried borderless printing only to find that it crops more of your photo than indicated on screen? Are you using borderless mode to print multiple photos on a page but you've discovered that your photos are now larger than you specified in your printing program? Have you tried printing three 8x10 prints across a 24 inch roll of paper only to find part of the left 8x10 missing and a white sliver beside the 8x10 on the right? If so, this article is for you!

Understanding the tradeoffs of borderless printing

Before going into the methods and madness of borderless printing, let's discuss some of the tradeoffs involved with borderless printing. First and foremost is the fact that with borderless printing, you are trying to print a photo (or multiple photos) that fit exactly on the page with no runoff or slack on any sides. For example, if you are printing an 8x10 photo on 8x10 borderless paper, the objective would obviously be to print that 8x10 photo so that it aligns perfectly to the 8x10 page. This unfortunately is nearly impossible due to the fact that printer paper loading and feed mechanisms are not perfect. If the paper loads just a fraction of an inch further to the left than expected, you'll end up with the right side of your 8x10 cut off and a white sliver of paper showing on the left edge of the paper. Even a hundredth of an inch can make a visible difference here. Paper loading and feed mechanisms have tolerances higher than that as they simply cannot load and feed paper that accurately every time. The paper feed mechanisms may also load paper slightly differently depending on how many sheets are loaded in the tray. You may find a white sliver missing on the left when 20 sheets are loaded and the white sliver may move to the right when the last sheet is loaded. This variability makes it nearly impossible to print exactly an 8x10 on 8x10 borderless paper, exactly a 4x6 print on 4x6 borderless paper, and so on.

To compensate for the above, printers usually offer the option (or mandatory use) of something called expansion and overspray. To avoid white slivers of paper from showing on your borderless prints, expansion will actually expand the print to a slightly larger size, printing part of the print off the edge of the paper and onto an overflow (sponge or other material) off the edge of the paper. Your 8x10 may be expanded to 8.2 x 10.2, for example, printing two tenths of an inch of your print off the edge of the paper. Printing beyond the edge of the paper will obviously eliminate white slivers along the edges and will hide the fact that the print isn't aligned perfectly on the page where it should be. Obviously if your photo is tightly cropped, you may notice that some of the

photo is missing. Many people disable the expansion to avoid parts of the print printing off the edge of the paper and then spend countless hours pulling their hair out trying to get borderless prints aligned just right to avoid alignment problems like white slivers on one edge and cropped image on the other edge. The first step in being successful at borderless printing is realizing that trying to exactly fill your borderless page by printing a photo that is exactly the same size as your paper is nearly impossible. If borderless printing and exact sizing is a must, you may have to reach some compromises.

It is also important to understand that print quality may be slightly reduced near the edges of the paper. You may actually get a warning to this effect when you select the borderless option in the driver. While any reduction in quality is usually minimal and not visible on most photos, it can be an issue when printing graphs or line art that include precise edges. Let's take a look at the most common borderless printing scenarios and see if we can make things a bit easier but before we do that, let's check out some common driver options to make sure we understand how the print driver is handling borderless printing.

Print driver options

The vast majority of print drivers offer at least some control over the amount of size expansion and related overspray will be used when printing borderless. Typically labeled "amount of extension", "expansion" or some other related term, this control normally appears as a slider near the check box for "borderless" in the driver. Sliding this control to the left results in the minimal amount of expansion/overspray and sliding it to the right results in more expansion/overspray. Some drivers actually allow you to turn expansion/overspray off completely when the control is dragged to the left while other drivers require some minimal level of expansion and do not allow you to turn size expansion and overspray off completely. Realize that whenever expansion is on, the printer will expand your prints and make them slightly bigger than what was selected. A 4x6 may become 4.1 x 6.1 inches, a 5x7 may become 5.15 x 7.15 inches, etc.. And of course, the more expansion that is being done, the larger the print becomes, and the more (of your photo) gets lost off the edges of the paper. This may not be important when printing a single photo on a borderless page but if you are trying to squeeze four 4x5 prints onto a borderless 8x10 sheet, be prepared to have two edges of each 4x5 print cropped off a bit as they will be slightly larger than 4x5 in size and the outside edges will print slightly off the paper as a result.

Some print drivers, particularly drivers for large format Epson printers, give you the option of whether you want the driver to expand prints in the typical fashion or you want to do it yourself. In most Epson drivers, the options are labeled "Auto Expand" and "Retain Size". Auto Expand works as above, with the driver adding some level of expansion depending on where the "expansion" slider is set. Retain Size takes a little different approach. It expands the size of the **page** beyond the edges of the paper and you have to decide how you want to handle the expansion/overspray. With the Retain Size option, a 24 inch roll may show as 24.23 inches wide in your printing software. The extra .23 inches actually print off the edge of the paper: about .115 inches on the

left and .115 inches on the right. If you were to print three 8x10 prints across the paper starting at the left edge of the printable area (that 24.23 inches), the left .115 inches of the first 8x10 would be missing as it printed off the left edge of the paper.

As you can see, using the Retain Size option simply allows you to address (print on) areas that are beyond the left and right edges of the page! Your 8x10 prints will be exactly 8x10 inches and you have the option of placing them wherever you want on the (expanded) page, including .115 inches off the left edge of the paper up to .115 inches of the right edge of the paper. When printing any combination of photos that add up to 24 inches such as a 24x36 print, three 8x10 prints, etc. be sure to start by centering all prints on the page. That will leave .115 inches on both the left and right sides of that 24.23 inch width and will give you a good start. As pointed out above, however, you may need to adjust margins slightly (using fractions of an inch) to adjust for "slop" in the paper loading mechanism. Now let's take a look at some common borderless printing scenarios.

Printing a single photo covering the entire page

The simplest borderless printing scenario involves printing a single photo so that it covers the entire borderless page. Some typical setups would be printing a 4x6 on 4x6 photo paper, an 8x10 on 8x10 paper, etc.. By far the easiest and most trouble free method of doing this is to allow at least some expansion so that some of the photo prints off the edges of the paper in order to hide the fact that the print might not be perfectly aligned. When you print a 4x6, a fraction of an inch may be missing since it printed off the edge of the paper, but you'll get nice clean prints with no white slivers to clutter the edges. Of course, when doing this, it is important that you don't crop your photos very tightly. If your photo contains some type of framing that you added at the edges of the print or you cropped so tightly that heads, shoes, or other features are already at the edge of the photo, you'll never be happy with overspray/expansion because it'll always crop just a little more than what you see on screen (from whatever program you are using to print).

If you are working with tight crops and you must print exactly a 4x6 photo on 4x6 paper without any overspray/expansion, you are in for at least some minor headaches. There is simply no way around the fact that you will likely need to make some minor adjustments. First, your driver may not even offer the option of turning off expansion completely. If it doesn't, you'll have to use a program like [Qimage](#) that knows how to disable the expansion outside the driver. Once the expansion has been disabled, you'll now be getting exactly a 4x6 inch print (or whatever size you chose) and your prints will no longer be "enlarged" but you may find that it doesn't align perfectly on the paper, leaving a white sliver on one or more edges of the paper. At that point, you'll have to make slight adjustments to the margins, often using both negative and positive margins, to compensate for the slop in your printer's paper loading and feed mechanism. A method for this type of adjustment is outlined in the [Qimage](#) help file [here](#). Just remember to never use negative margins (if they are even allowed in the software you

are using) unless you are printing borderless because that's the only time negative margins (going beyond the edge of the paper) make sense.

Printing multiple photos on borderless paper

In certain situations, it is convenient and cost effective to use borderless printing to fit more photos onto a single page. For example, you may want to print three 4x6 photos on a single 8x10 borderless page. The same processes and tradeoffs are at work here (expansion versus alignment) but people are often even more confused when printing multiple photos on borderless paper when they discover that their 4x6 prints are not really 4x6 when printed. Instead they are either slightly larger or they have one or more edges that appear more cropped than expected. Of course, this is the driver's size expansion doing its dirty work! Again, you could disable the expansion per the previous paragraph, but you'll again be faced with trying to make near microscopic adjustments to margins to compensate for slop in the paper loading and paper feed mechanism. While it is relatively simple to make these compensations, your printer is likely not always consistent in exactly how it loads paper so your adjustments may only work with a certain type of paper or with a certain number of sheets loaded. The exact position of the page may differ when variables like the number of sheets in the tray change.

Other surprises related to print size

The expansion and overspray related to borderless printing can cause prints to be larger than expected, leading to complaints about getting the wrong size print or prints that are too cropped. In this case, the print driver itself modified the print to make it larger. Be aware that in addition to borderless printing, there are other options in some print drivers that can cause surprises related to print size. Options like "fit to page" can often be used in the print driver when selecting a paper size that exceeds the physical limitations of the printer. For example, if you try to select a paper size of 18x25 on a printer that can only print 17 inches wide, the driver may actually allow you to select that 18 inch width using a "fit to page" option where everything is scaled from 18 inches wide to 17 inches wide. This causes the driver to "lie" to your printing software, telling it that it actually is using 18 inch wide paper. When you print an 18 inch wide print, however, the driver will scale the print down to fit it on the (true) 17 inch wide paper and you'll end up with prints that are smaller than you expected. Personally, I don't like print driver options that "corrupt" data in this way by modifying it after it has been sent to the printer, but those options are pretty standard for most print drivers, so just be aware that **no matter what software you use to print, if the size you get from your printer disagrees with the size shown in your printing software, it is almost always the print drivers fault** for modifying the data that has been sent to the driver and producing something other than what was specified in the print job!

Summary

If you are not getting the sizes or spacing you expect with borderless prints, consider the information in this article and the fact that expansion/overspray may be involved. Printing a single photo on borderless paper is often not a problem because we often don't care about 1/16 inch being printed beyond the edge of the paper. When precision is paramount, however, as it would be when trying to fit three 8x10 prints across a 24 inch roll of paper, be prepared to spend the time needed to turn size expansion off and make miniscule manual adjustments to margins to get things just right. It can be a painstaking process to align prints on a borderless page so that all edges of the photo **just** touch the edges of the paper. Fortunately if you are using [Qimage](#), you'll only have to make these adjustments once for each configuration you are using since [Qimage](#) will allow you to save all print related settings including driver selections in a printer setup that can be loaded at any time. Since some variables involved with this fine alignment may not be available in the driver (such as the ability to disable overspray/expansion and the ability to use negative margins), just saving driver settings inside the driver (if your driver allows that) may not be enough.

This article should not only give you some examples that will work properly for borderless printing, but also give you enough background to understand the process of borderless printing to the point that you can deal with some of the common pitfalls and headaches that can be synonymous with borderless printing. Borderless printing is a powerful and often paper saving feature that when combined with the right knowledge, can prove to be rewarding in the end.