

Stained Glass 101

hands-on info for the hobbyist

by Brian McMillan

Cutting Glass with Rulers, Strip and Circle Cutters, and Cutting Systems

There are times when cutting glass freehand is not the best choice. For example, cutting straight lines or circles can be done much more accurately using either a ruler (for the straight lines) or a strip and circle cutter.

Mastering the Ruler

With a little bit of practice, cutting straight lines using a ruler is a breeze. First, you need the right ruler. It must be at least $\frac{1}{8}$ " thick. Rulers that you buy at an office supply store are generally too thin—better to try a stained glass store. A thin

ruler will cause your glass cutter wheel to come in contact with the ruler, and it will not slide smoothly. A thicker ruler allows the housing of the head to glide along the ruler instead. The ruler needs to have a cork backing so that it will not slide around on the glass. Venture Tape makes an adhesive backed cork strip (available from your supplier) that you can attach to your ruler. Alternatively, you can apply a thin layer of silicone to the back of your ruler. Once it's dry, it will serve the same purpose.

It is important to use the ruler as an aid, not a crutch:

- Do not push your cutter against the ruler; just slide the cutter along it.
- Do not tilt your cutter to the left or the right.
- Do not score any harder than usual.
- If you are cutting to a pattern, remember to allow for the distance from the edge of your cutter body to the wheel. As usual, score just along the inside edge of your pattern line so that you have the thickness of the pattern line to accommodate the foil.



Strip Cutting

If I need to cut a bunch of strips that are all exactly the same width—for a jewelry box or the border of a window—I use my trusty strip and circle cutter (hereafter referred to as S&CC). Inland, Fletcher Terry and Glstar all make different versions of this tool, which are available at stained glass stores. I have a permanent portable surface on which I use the S&CC. It is made using a 24" x 18" piece of $\frac{3}{4}$ " plywood. Screw a 1" x 2" board to one long side of the plywood to slide the strip cutting attachment along. I use the tool a little differently from the instructions on the box. I have the strip cutting at-

tachment running along the outside of the 1" x 2". I find that this works better when I am cutting narrow strips—such as $\frac{3}{4}$ " wide pieces to use for mosaics. This throws off the gauge on the arm of the tool, so I just use a ruler to calibrate the distance from the board to the cutter wheel to arrive at the proper width. Apply a little more pressure than usual when you score the glass. Use your running pliers to break the glass, slide the glass back against the 1" x 2", make another score, break the glass, and on and on. All of your pieces will be exactly the same size and you will save loads of time. If one of your scores doesn't break cleanly, reposition the glass $\frac{1}{2}$ " away from the 1" x 2" and make a score to true up the edge.



Circle Cutting

The circle cutter base of the S&CC will make circles which are 3" to 24" in diameter. The circle cutter has a three point base, so it will hold its position even on rough textured glass. Slip the strip cutting base off the T-bar and replace it with the circle cutting base. Using the ruler on the T-bar, choose the size of circle that you wish to cut. Place the cutter on top of the glass to be cut so that you will have at least $\frac{1}{2}$ " of excess glass all the way around after you make the score. Hold the base in place by applying pressure with one hand on the center of the circle cutter base. Apply continuous pressure on the base while rotating the T-bar and cutting wheel over the glass. Once again, use slightly more pressure than usual when making your score.



To run the score, flip the glass over so that the score is touching the table—preferably on top of a piece of cork, a section of newspaper, or indoor/outdoor carpet. Apply downward pressure with your thumb right above the score, moving all the way around the score. Once you have run the score completely around the circle, you can flip the glass—scored side up—and safely make four or more equally spaced scores from the edge of the glass to $\frac{1}{4}$ " from the score. Use your running pliers to run all of these scores and the circle should drop out with a nice clean edge.

Lens Cutters are specialized circle cutters that allow you to score circles as small as $\frac{1}{2}$ " in diameter

and as large as 5". You simply adjust the arm on the cutter to the desired size, push down on the cutter arm and score the glass. I use a different method to release a small circle from the surrounding glass. Use the ball end of your cutter to tap directly underneath the score on the glass. With practice, you will see the score start to run. If you tap about $\frac{1}{4}$ " ahead of the run, it will continue running until you reach where you started. Now make the same four scores running away from the circle as before and use your running pliers to run them, freeing up the completed circle.



Speciality Cutting Systems

There are a number of glass cutting systems on the market—such as the Morton Portable Glass Shop or Beetle Bits Cutting System—that will allow you to cut parallel lines as well as circles. They are a little more time consuming to set up, but are definitely worth the effort if you must cut a large number of pieces that have to be exactly the same size. A fantastic feature of these systems is their ability to cut diamonds, hexagons, octagons and even nonparallel lines, such as those used to make the body of a lampshade. In the photo, you can see a typical set up for cutting out a lampshade body piece. I am not going to even try to describe how to use this system as it is beyond the scope of this article. Each system comes with a detailed instruction manual and some even have DVD's.



I hope that this article has shed light on a few of the many ways you can use strip and circle cutters, as well as complete cutting systems, to make your glass work less frustrating and more productive.

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