

FUNDAMENTALS OF FRAMING: GLAZING

by Brian Barnett, CPF

In custom framing, the word, “**glazing**,” refers to a protective covering for art or artifacts. The term covers all types of specialty glass, as well as acrylic sheeting. This article will discuss only glass. Acrylic and more technical glazing material will be featured in a future article.

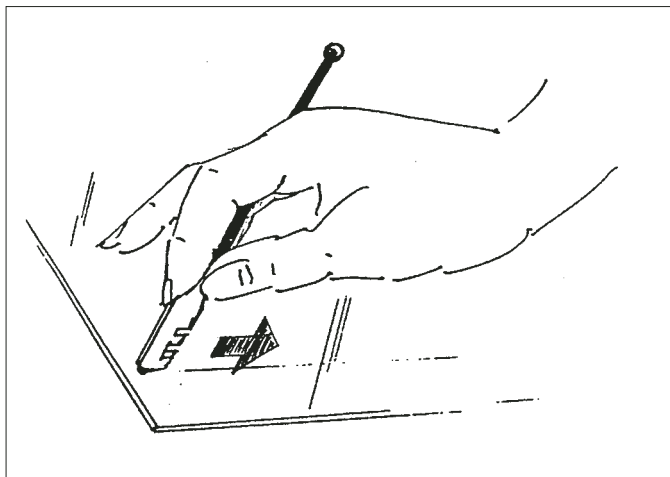


Diagram 1: Scoring glass by hand

Types of Glass

Six major types of glass commonly used in custom framing are:

Clear: Regular float glass

UV-Filtering: Filters up to 97% of UV rays between 300 and 380 nanometers by means of a coating or laminate. Ultraviolet light is one of the most harmful forms of light sources and causes fading and deterioration of artwork.

Non-Glare: Etched on one or both sides to reduce glare. Light hitting the surface is scattered so it does not reflect and distract the viewer.

Anti-Reflective: Coated or non-coated surface reduces reflections by absorbing them. Also increases transmission of light.

Low Iron: A float glass with less iron than regular glass, and therefore provides a more neutral color and higher light transmission.

Laminated: This 4mm-thick safety glass has a thin UV-filtering resin membrane laminated between two 2mm-thick pieces of glass. It is most extensively used in art galleries and museums to protect artwork from vandalism.

Manufacturers have also combined these properties, (UV-filtering + anti-reflective, for example), to offer increased options.

Handling Glass

- Paper interleaved and washed glass reduces labor time. Using cotton gloves enables framers to place the glass directly from the box into the frame without cleaning it. A cursory inspection is usually all that is needed.
- Avoid dragging the lites of glass against one another when removing them from the box.
- Manufacturers place ink jet instructions along an edge of coated glass to indicate which side to score for best results. Score the uncoated side only.

- Use safety goggles when scoring glass on the wall cutter.
- Use special glass handling gloves to carry large sheets of glass, holding it at the top of the sheet with two hands.

Scoring Glass

Glass cannot be “cut” as such; it has to be scored with a special steel or carbide wheel attached to either a hand-held tool or supported in the sliding head of cardboard/glass cutting machines.

Glass should always be clean before scoring. This will ensure a solid score. If the cutter skips, replace it immediately.

Scoring By Hand

One method of using a glass cutter is to hold it between the index finger and the middle finger with the “grozing teeth” facing down (see Diagram 1). Grozing teeth are designed specifically for breaking off scored narrow strips or to “groze” or chip away at unwanted protrusions resulting from poorly broken-out scores.

The index finger should be on top of the glass cutter, while the thumb and middle finger steady the cutter on either side. The handle should be at a slight angle from the vertical and the wrist and elbows locked.

When starting to score, position the wheel about $\frac{1}{16}$ " from the top edge of the glass and apply downward pressure. A slight crunching sound from the wheel biting into the glass is the signal to pull the glass cutter back smoothly from the shoulders while maintaining even pressure throughout the entire score.

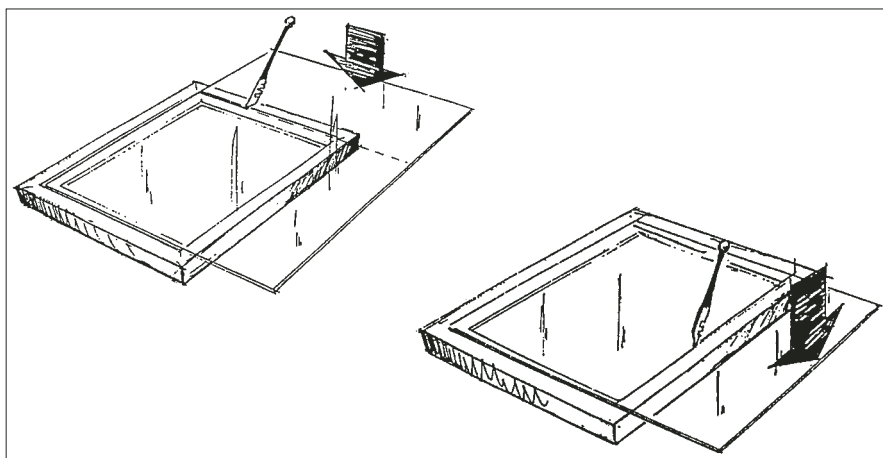


Diagram 2: When using a quick method for fitting glass, score the short side first (as seen on the left) and the long side next (as seen on the right).

After scoring, move the glass to the edge of the worktable and snap off the excess with a wrist action. If the excess is too narrow, a pair of running pliers or the grozing teeth should be used to break off the piece. Always “break out” glass by running it from either the start or end of the score — not from the middle.

Remember: Don’t score too heavily into the glass. A light, continuous score assures the best results. Never run the cutter over an existing score!

Quick Methods You Can Use to Save Time

The following quick methods are offered as alternatives to more time-consuming methods and require practice.

Fitting Glass into a Square or Rectangular Frame

In order to become comfortable with this procedure, use small 8"x10" pieces of scrap glass.

After practice, this method can be very effective on sizes up to 18"x24", but should not be used on larger sizes, especially when there is a significant amount of glass to be broken off.

Step 1. Place frame face down on the work surface and visually position a corner of the glass over one corner of the rabbet. Allow about $\frac{1}{16}$ " of space (see Diagram 2).

Step 2. Press down lightly on the center of the glass with the left hand and score the short side, sighting through the glass $\frac{1}{16}$ " inside the rabbet to ensure that the glass will drop into the rabbet when cut.

Step 3. Leave the glass in place and break off the excess by bumping it with the heel of the hand, in the direction indicated by the arrows seen in Diagram 2.

Step 4. Score the long side. Again, bump the excess to break it off. The glass should now drop into the rabbet of the frame.

Scoring Ovals or Circles

Step 1. Place the oval or circle frame face down on a soft work surface.

Step 2. Apply two short strips of ATG on opposite ends of the back of the frame.

Step 3. Lay the glass on the frame, making sure it is held firmly by the ATG.

Step 4. Sighting through the glass about $\frac{1}{8}$ " inside the rabbet, make a continuous score all the way around. Rotating the frame slightly while scoring will help negotiate the tighter curves (see Diagram 3.) The direction of the arrows in the diagram indicate the direction the score is facing.

Step 5. Once fully scored, remove the glass from the frame and *turn it over* onto the surface.

Step 6. Apply downward pressure with your thumbs all the way around the score line to "run" the score as seen in Diagram 3. Note the centerpiece cannot be removed at this time.

Step 7. *Turn the sheet over again* and score four or five radials that should start $\frac{1}{8}$ " from the main score and continue to the edge of the sheet. (See bottom illustration in Diagram 3).

Step 8. *Turn the glass over once more* and tap directly above each radial score with the ball of the glass cutter to break off the excess glass pieces.

Cleaning Glass

Glass should be cleaned with a soft, lint-free paper or cloth towel and an ammonia-free commercial glass cleaner, or mild soap and water. There are a variety of accepted methods to achieve a spotlessly clean piece of glass.

Method 1: Place the glass into the back of the frame and clean the inside surface. Turn the glass over and clean the second surface. The advantage of this method is the glass is held securely by the frame. This is not recommended, however, with gold leafed frames.

Method 2: Place the glass directly onto the

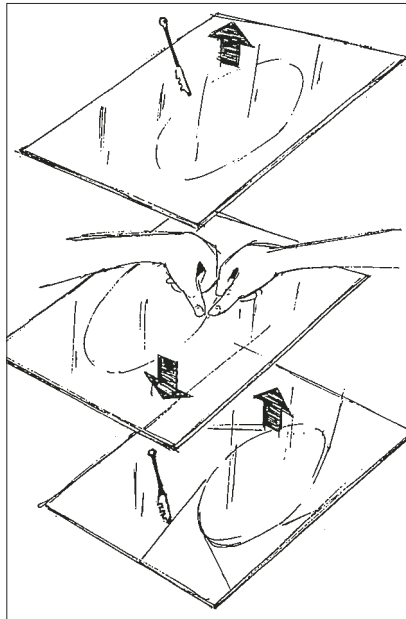


Diagram 3: In this illustration of cutting round or oval shapes, the arrows indicate the direction the score is facing.

"stack" and clean the top surface. Spray the cleaning fluid onto the cloth, not on the glass and, once cleaned, make certain there is no residual glass cleaner on the surface before placing it down on the mat/art stack. Turn the glass over and clean the second side. An advantage of this method is that all visible spots or pieces underneath may be seen.

Method 3: Place the glass on a clean, flat surface and hold it down in the center while cleaning. Just before turning over, clean the center area where your fingers have touched the glass. Repeat on the second surface. Care should be taken to avoid the sharp edges, especially if the paper towel is breaking up or is very wet.

Equipment and Tools

- Wall-mounted cardboard and glass cutting machine
- Spare scoring wheels for replacing worn glass wheels
- Glass pliers for removing scored strips of glass

too small to break by hand

- Hand-held glass cutter, generally used for scoring ovals, circles, or special shapes
- Safety glasses for protecting the eyes when scoring and breaking glass
- Brush to sweep away glass particles

Utilization and Storage

- Generally, the goal of the framer is to use the smallest piece of glass possible and still complete the order. When cutting into a full lite, always leave the biggest possible off-cut. If the off-cut is too small to save, break it down in a metal trash can designated exclusively for glass.
- To maximize glass utilization, use the following simple rule: If the long side of an order can be cut from the short side, first cut the short side from the long side.
- When dealing with an off-cut of coated glass, wrap it in Kraft paper before storing to prevent scratching the surface.
- Don't store odd sizes of glass. Take the time to cut them down to standard sizes.
- The glass storage area should be located as close to the freight receiving area as possible, as well as to the wall cutter. ■

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