

Beginner Beads are a simple donut shape. The beadmaker can use a paddle, a small slab of graphite or brass to shape the glass in different ways—long thin barrels, bicones, tabs, and so on. Czech beadmakers, who can produce up to 1200 (identical) lampwound beads in 2–3 days, are particularly known for their use of jigs to help rapidly shape the bead into the desired silhouette.

Shaping the Bead can be the longest part of the process, though most are impressed with surface decoration. Some rely solely upon heat and gravity to shape their beads; most at least use a graphite paddle to coax the bead into the shape they want.

• A marver is a tool used in glassblowing. It generally is made of a polished steel surface attached to a metal or wooden table. A warm piece of glass is rolled on the marver, for two reasons: controlling temperature and adjusting shape. Because of the high specific heat capacity of the steel, it can absorb heat from the glass, particularly the outer skin. Because the glass comes in direct contact with the steel, it must be kept very clean. It is usually rubbed with steel wool and then wiped with rubbing alcohol to keep it from rusting. Other common tools for shaping beads are mashers, tweezers, picks, and even the rod of glass itself. The use of presses to create shapes and indent patterns into the glass has been a recent development.

Decorating the Bead: One way to decorate your bead is to draw with a **stringer**, or fiber (a small thread, usually 3 mm or less in diameter) of glass on the surface, making dots, lines, or combinations. Dots are particularly versatile and can be piled on top of each other in many intriguing ways. Additionally, a sharp pointed object—for example, a tungsten rake (or pick) or stringer of glass can be dragged through the surface design to make feathers, hearts or other designs. Another very old, traditional design involves sagging one part of a striped bead by heating it more, or rubbing it with the paddle to shift the design into waves. Glass can also be broken into very small chunks (**frit**) or even finely ground powders (e.g. Thompson **enamels**) in which the bead can be rolled; it can also be decorated with metals—silver, gold, copper, palladium, and platinum. These are typically applied as very fine leaf, slightly thicker foil, as fine wire, as fine mesh, or even as a metallic deposit (fuming).

Annealing: Good quality warm or hot-glass beads, especially large or complex beads go into an annealing kiln immediately after making; smaller ones may be allowed to cool slowly, with a **fiber blanket** or by being plunged into **vermiculite**. Batch anneal small beads at a later time to keep them from breaking under stress.

