

# Glass Beads

**Lampworking** is glassworking using a torch to melt and shape the glass. It is also known as flameworking or torchworking. The modern practice no longer uses oil-fueled lamps, although the art form has been practiced since ancient times. Early lampworking was done in the flame of an oil lamp, with the artist blowing air into the flame through a pipe. Most artists today use torches that burn either **propane** or **natural gas** for the fuel gas, with either air or pure oxygen as the **oxidizer**. The torches that hang against the wall in the JMM art studio are natural gas and air. The torches on dollies are propane and oxygen.

Modern lampwork beads are made by using a gas torch to heat a rod of glass and spinning the resulting thread around a stainless steel **mandrel** covered in **bead release**. When the base bead has been formed, other colors of glass can be added to the surface to create many designs. After this initial stage of the beadmaking process, the bead can be further fired in a kiln to make it more durable.

Unlike a metalworking torch, the **torch head** is fixed, and the bead and glass move in the flame. American torches are usually mounted at about a 45 degree angle, a result of scientific glassblowing heritage; Japanese torches are recessed, and have flames coming straight up, like a large bunsen burner; Czech production torches tend to be positioned nearly horizontally. In the JMM studio we use a variety of torch angles.

## Basic Technique for Lampworking

**Preparing the mandrel:** Start by dipping a mandrel, or wire (stainless steel welding wire, cut into 9 or 12 inch lengths is typical) into a clay based substance, **bead release** or **kiln wash** and let it dry. Allow the mandrel to dry overnight; drying in the flame too quickly may crack the mandrel release coating.

**Heating the glass rods and mandrel:** Select rods of colored glass to heat in the flame.

- **Put on your safety glasses.** Secure and turn on your torch to its highest setting. Place the coated end of the metal mandrel in the torch flame a few seconds, just long enough to turn the coating to a lighter shade. DO NOT over heat it. Take the mandrel out of the flame. The mandrel must be heated, or the glass will not stick.

- Heat the end of a glass rod until a **molten ball** is formed. Hold the mandrel 1/2" below the flame and heat the ball hot enough so it falls down onto the mandrel. The metal mandrel needs to be a bit hot too. When both glass and mandrel are sufficiently warm, the beadmaker starts rotating the mandrel (usually with the non-dominant hand) while allowing the glass to wind upon it.

- Keep adding glass by heating the glass rod and dripping the molten glass to build up the bead. Aim the flame mostly toward the glass rod, less at the built up glass already applied on the mandrel.

- After you have built up a volume of glass on the mandrel, don't worry about how uneven it is. To shape the rough bead, rotate the glass in the flame to make the bead round. Making the bead symmetrical takes practice.

- Take the bead out of the flame and place it between the **fiber pads** or **vermiculite** to cool the bead slowly.