

## BLOWN GLASS ORNAMENTS for Christmas or Year Round Decoration



Glaskolben™ is the name for a pre-blown clear glass cylinder with a blow pipe end, used for blowing glass balls or 3 dimensional shapes. It is the same product used throughout Europe for making Christmas tree ornaments.

The prefabricated cylinder saves the time consuming and tedious method of “pulling points” from a glass tube. Delphi offers Glaskolben™ in Sealed End Cylinders with a 1.0 mm wall.



### EQUIPMENT

All that is needed to make attractive glass shapes with Glaskolben:

1. A torch head for Mapp Gas use (the Hothead, #7329)
2. A gas/oxygen torch such as the bushy flame capable Minor Bench Burner, #3471, could also be used. There are several other types of burners available.

### SUPPLIES

1 Glaskolben™. 2 any 90 COE Frit and Powders. These are available in good assortment of colors. Ornament Caps and Loop Sets.



### COMPATIBILITY

Glaskolben™ has a Coefficient of Expansion (C.O.E.) of “89” which makes it compatible with “90” glass frit and powders. Any other glass with a different C.O.E. will cause the finished ball or shape to fracture from stress.

## GLASS BLOWING AN ORNAMENT

Blowing an ornament with Glaskolben™ is easy. However, it takes practice to get the feel of the glass as it softens in the flame.

### TO START:

Light the torch and adjust the flame back from a sharp point. A broader flame is better. Select a Sealed End Cylinder and introduce it into the back of the flame i.e. away from the torch. Rotate it as it is brought into the hotter area of the flame. Continue to rotate until the cylinder is glowing red and starts to reduce in size or collapse. However, do not let the neck end of the cylinder get as red or the cylinder will be hard to manipulate.

Remove it from the flame, held vertically, then give it a quick snap to align the cylinder. Blow steadily into the blowpipe end to a full ball, while rotating. (See illustration.) This is where you must “get the feel of the glass”. Overblowing can cause a blow out. The ball must be annealed at this point. See separate annealing instructions.

### ELONGATED BLOWN SHAPE

To make an elongated shape follow the same procedure as in blowing a ball. Rotate the cylinder in the flame until it starts to glow a red color. Then use tweezers to pull the end as far as desired while blowing and rotating. Immediately put the ornament in an annealer.

### ANNEALING

Annealing is the process whereby we toughen brittle glass by heating and slow cooling. Each manufacturer’s glass may have a different annealing range. In the case of the Glaskolben™, the annealing temperature is 950°F [510°C]. There are different methods of annealing:

#### VERMICULITE

Placing a blown shape deep in a container of vermiculite warmed on a hot plate, serves well. However, care must be taken to be sure that the red glow has faded before placing it in Vermiculite. Otherwise, it may stick to the glass.



## FLAME ANNEALING

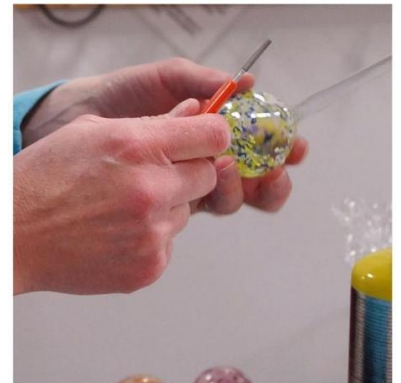
Move the glass shape out of the hot area of the flame [blue color] and in the yellow range for 2 to 5 minutes to allow it to slowly cool and anneal.

## KILN ANNEALING

This is the most reliable method. The kiln control can be set for the desired annealing temperature and run for twenty minutes or more. The amount of time after 20 minutes makes no difference. One cannot over anneal. Leave product in kiln to cool slowly.

## REMOVING THE BLOWPIPE END

After the ornament has annealed the blowpipe end can be removed. The best method is using a Carbide scoring tool (item# 103200). With this tool in one hand and the ornament in the other: press the sharp side of the carbide steel against the blowpipe neck and the thumb of the same hand pressing against the other side, rotate the shape while scoring the neck. Still holding the ornament, tap the blowpipe end to break it off. An ornament cap can be placed on the ornament to finish it off. Don't discard the cutoff neck! It may be decorated to make a stylized bell, etc.



## DECORATING THE BALL

As soon as you are comfortable with making a freehand ball, you may want to make a colored ball. In foreign countries production ornaments are silvered internally and surface colored with lacquers. Because silvering solutions are poisonous and flammable, alternate methods are offered. One method is to paint the surface with Vitrea 160 paints (item #64217), designed specifically for glass. Once painted they are "fixed" by placing in an oven and firing to 325°F.

Another method is to use colored frit or powders. See Illustration. Fill to approx. 1/5 of the cylinder or just beyond the bend. Rotate the Glaskolben in the same manner as with the glass ball. It will take a little longer to bring the ball to blowing temperature because of the added volume of melting frit. The result is worth the added time.

A variation on the use of frit and powder is the method the production European blowers use when they add sugary snow on the ornament. Place some frit or powder in a wide flat bowl or saucer, marver [roll] the hot cylinder over the grit then reheat the frit covered cylinder in the flame. Blow into shape. Stringers or Noodles (produced by Uroboros or Bullseye and available in 90 C.O.E.) offer another form of surface decoration. Select one, and while rotating the HOT Glaskolben™ counterclockwise (turn away from you) in the flame, heat the tip of the stringer in the flame. Place it under the cylinder, attach it and then allow it to trail around the cylinder. The stringer may be burned off at the finished end. The point of the stringer may also be applied to the ball at 90° to dimple the surface.