

Closing In

Using bezel setters in a flex-shaft for tube setting

BY KAREN CHRISTIANS For a quick and easy setting, nothing beats the tube. In an article that I wrote for *MJSA Journal* (then *AJM Magazine*) in 2005 (“Totally Tubular,” April 2005), I explained in detail the method of fabricating tube settings with metal tubing mounted directly in a #30 flex-shaft handpiece. In this process, cutting burs are stabilized in a GRS bench mount and the rotating tubing is mounted in a flex-shaft and lowered gently onto the cutting burs.

As I used this method for years in my studio, I realized that a challenge arises when you are trying to set a stone that requires tubing with an outside diameter wider than 4.85 mm: The Jacob’s Chuck in the flex-shaft expands only 4.95 mm in diameter, and therefore cannot accommodate tubing that is any larger. Using bezel setters (right) in the flex-shaft, I devised a process for accurately setting faceted or small cabochons into tube settings. This modification to the original tube setting technique offers unlimited setting options with the added value of good ergonomics.

1. Used for finishing bezel settings by hand, French bezel setters were designed specifically to evenly close bezels on a faceted stone. I have found that they can be adapted easily for tube setting.

2. French bezel setters can accommodate round stones ranging in size from 1.2 to 7.5 mm in diameter.



3. In this project I am setting a 4 mm stone in 5.2 mm diameter tubing. In preparation for setting, the tubing is cut, filed flat, and soldered into place on the ring. Here, I am cutting the seat for the stone in the tubing with a 4.2 mm setting bur mounted in the flex-shaft.

4. To check the fit, place the stone upside down and pick it up with the setting. (To make your life easier, use double-sided sticky tape to secure the stone to the work surface.) If the seat is cut deep enough, the stone will friction-fit into it.

5. When the fit is good, it's time to set the stone. This is where the French bezel setter meets the flex-shaft. In the traditional method shown here, a seated stone is held in a vise and the bezel setter is lowered onto the stone and rocked back and forth, collapsing a thinned wall of metal around it. But not everyone has wrists that can both turn and push onto hardened metal. Arthritis, carpal tunnel syndrome, and other problems can affect one's ability to perform this task.

6. On closer inspection of the French bezel setter, I noticed that the cylindrical shaft, which would normally be inserted into a hand pin vise, could have a different destination—the #30 flex-shaft handpiece.

7. Using the weight of a flex-shaft imparted less strain on my hand and wrist, resulting in a successful tube setting. This process also allows for multiple tube settings in tight spaces, which would be difficult to achieve if manually setting the stones due to the wide area required to rotate my hand and wrist.

8. The finished tube setting—in my happy, unstrained hand! ♦

