Soldering Bezels

Oh the cries of anguish that I have heard from folks trying to solder bezel walls that they spent hours soldering, shaping, and fitting while trying to solder them onto a base.

Bezels just seem to love to warp, pop apart at the seam or after very careful placement, go for a walk about. Then there is the annoying vertical wall seam that was perfectly smoothed and finished before showing up again. And of course the solder wants to crawl up the side of the much lighter bezel and avoid the base. Insert bad words here that cannot be published. We all know them by heart.

So to reduce the frustration here are a few tips.

First… Solder loves things that are hot, clean, and shiny. Kinda like my first ex husband.

The first vertical seam should have the highest temp solder. If you are using Fine silver, Argentium silver, Continuum silver, 18kt, 22kt, or 24 kt gold fusing is the way to go. If you're not comfortable fusing just use the highest temp solder you can. Be sure the seam is as perfect a fit as possible. Afterwards Do Not smooth or file the outside of the seam. Only remove any big bumps or lumps of solder on the inside. I have found that the high temp solder will want to alloy with the lower temp solder that is used to solder on the base and wick away leaving a visible seam.

When you have your bezel placed where you want it to be squeeze out a little super glue to another disposable surface like a little zip lock bag. Little zip locks from suppliers seem to be like Tribbles. They gather and reproduce at an alarming rate so most of us plenty to get rid of. Take a very thin pointy thing like a broken saw blade, a pin, a thin scribe and place little dots of the superglue to hold the bezel in place. It will burn off later. Once the glue is dried take a very Sharpe fine tipped scribe or a knife edge graver and score a clean line on both the inside and the outside of the bezel where it meets the plate.

While soldering the solder will want to run into and fill the fresh clean and shiny lines and not spread out.

To keep the bezel from wandering around while soldering I use an onglette graver to raise a few beads inside the bezel on the base right next to the bezel wall.

After soldering I just knock them down with a flat graver or a very small ball burr so that the stone will sit down flush with the base.

To make the solder behave and not run up the side walls or puddle on the base I always ball up the pallions with my torch. This way the ball when in place will contact both the side wall and the base and not just lie flat and flood the base or walls with solder.

Now here comes the tricky part.

Because the bezel usually gets hotter faster than the base it is being soldered on, the solder wants to run up the inside of the bezel. To keep this from happening I dial in a softish annealing flame with just a touch of red at the tip. Less oxygen in a flame the less the flame is likely to oxidize the metal being soldered. While pre heating the piece I move the flame back and forth very quickly over the whole piece. Why? Because things that heat up fast cool off fast. Things that heat up slowly cool off slowly. So while the bezel is going hot cold hot cold hot cold, the base gets slowly warmer. When the flux is melted and looks clear and very liquid I know it's time for the solder to flow. That's when I add more oxygen to the flame and then quickly run the flame around areas I want the solder to flow.