How to Make a Pip Squeak (you give her a pinch, of course!)

All kidding aside, we are often asked how we make the perfectly round little glass circles we call "pip squeaks". Students and customers alike have marveled at the "perfect little circles" we make to adorn our chain-link bracelets, so we decided it was time to share that information with you.

Let me begin by saying that although he process may, at first, seem painstaking and even tedious, there is a "learning curve" and the more you make, the easier and faster the process becomes until you too are "pip squeaking" like a pro! Let me also say that, contrary to what you may have heard, this technique does not require a drill press or drill bits, or any time spent at the grinder, in fact, all you need is a glass scoring tool, your breaking pliers and a ruler!

First, you will want to decide whether you want to make a two or three layer pip squeak, and for simplicity sake, we'll begin with the two-layer process. Begin by choosing a piece of glass for your base layer. We recommend that you select a SMOOTH, (non-textured) or only slightly textured glass (like Reed) for your foundational layer. The base glass should be THIN glass (at 1.6mm), NOT a regular/ thick glass at 3mm. Also, avoid heavily textured glass like Herringbone or Ripple because glass with that much texture is almost always 3mm thick and therefore, between the thickness and the texture, too difficult to cut into small pieces.

Since we are beginning this lesson by discussing the virtues of a two-layer pip squeak, we suggest that to add more interest, you may want to consider a patterned piece of glass, like Marquis, Boxes, Small Dots or Honeycomb for your base layer. Or you may want to stick with a solid color, and/or use a pattern in conjunction with a complimentary solid color and alternate your pip squeaks on your bracelet. Whether you choose a pattern or a solid color, your base layer should be completely OPAQUE (like Rainbow Honeycomb on Black) or TRANSLUCENT (like Aqua Reed on Thin Clear) but NOT completely transparent because we don't want the metal (or the glue) of the finding that we choose showing through when we mount the pip squeaks.

Your base pieces will need to be exactly ¼ inch by ¼ inch. The best way to achieve precisely cut squares is to use either a stripper and circle cutting tool, like Glastar's Glass Stripper & Circle Cutter or the Morton System. With either of these tools you can whip up LOTS of ¼ inch squares easily and precisely in no time at all! Having said that, you certainly CAN use a ruler with a non-skid backing and mark your glass carefully before running your scores, but there is no doubt that the aforementioned tools will make the job faster and easier for you.

Your clear glass topper should measure 3/8th's of an inch by 3/8th's of an inch and we prefer Bullseye's #14 CRYSTAL CLEAR, 1.5mm fusing glass for it's unusual brilliance that magnifies the beauty of the underlying glass.

IF you were to decide that you want a middle layer (and we HIGHLY recommend you try this), you will want to choose a piece of patterned glass on CLEAR (so we can see the lovely rich color(s) of the base glass reflecting up through the piece). <u>These patterned middle layer pieces will need to be exactly ¼ inch by ¼ inch too (the very same size as your base layer)</u>! Choose the glass for your middle layer carefully; you don't want to obscure your base glass completely (that would be a waste of money), so look for patterns on clear that have enough open spaces to create a feeling of depth in the piece by allowing the rich color from the bottom to rise up through the middle layer. In the example pip squeak below, we chose a base of Rainbow Bricks on BLACK, followed by Rainbow Small Dots on Clear for the middle layer followed by the Crystal Clear #14 topper.

Once you have a nice supply of bases, middles and toppers, it's time to get busy stacking the glass. Initially, you may find this task an exercise in frustration, but by following a few of the following suggestions, we hope you will discover that it can be an almost "Zen-like" experience.

Although we do not espouse the use of glue, there are times when it is expedient and yes, even necessary to employ a little dab of glue to help move things along. Regardless of whether you decide to use glue or take your chances at the art of free-hand pip squeak stacking, <u>you really WILL want to build them right ON your kiln-washed kiln shelf</u>.

Begin by placing all the base pieces down in rows (like cookies on a cookie sheet), and leave enough room in between each piece just in case one of your toppers slips during the firing process. Here's where the glue comes in handy … you can use either Elmer's Blue School Glue Gel (or a generic equivalent) or Super Glue (or its generic equivalent). If you decide to use the Blue School Glue Gel, you will want to dispense a large "blob" on a piece of cardboard, from which, with the aid of a toothpick, you will dab ONE "dot" of glue on the center of each of your base pieces of glass. Blue School Glue Gel gives you the luxury of time; time to lay down all the dots of glue, before going back to your stash of patterned middle layers, and setting them CAREFULLY on top of the base glass, <u>making sure they sit directly over the bases</u>.

IF you opt for Super Glue, you will have to work quickly, applying one TINY dot of Super Glue to a base, then IMMEDIATELY placing the patterned middle layer on top, again, setting them CAREFULLY on top of the base glass, making sure they sit directly over the bases. Super Glue sets up FAST, and so you will have to work with one pip squeak at a time. You can gently press down on each pip squeak, making sure both pieces of glass are "connecting" with the glue. Glue should NOT be oozing out the side!! A dot the size of a head of a pin is sufficient to tack the pieces together!

You will then repeat the glue process when applying the clear topper to the base, and/or the base and patterned middle pieces of glass <u>BUT remember, the topper is SLIGHTLY larger than the base and middle layers of glass, so you need to position the topper so that there is an equal amount of clear glass "hanging" over all four sides</u>. During the fusing process this SLIGHT over-hang allows the clear glass on top to push down on the middle and base layers and wrap over their edges, completely encasing them.

To fire pip squeaks properly, it is necessary to bring them to a full fuse (about 1420F) and then if necessary, SOAK them for just a few minutes at that temperature, until they become perfectly ROUND. You WILL have to keep an eye on your pip squeaks during the final phase of heating to make sure you do not over-fire the glass. Remember, it's always better to keep your "high-end" temperature well UNDER 1450 when working with dichroic glass. The desired effect CAN be achieved with just a little patience and by soaking the glass for just a few extra minutes at those lower temperatures (1420-1440). Once you see those delightful little rounds have formed and fused, you will crash cool back to 1100 and begin annealing them for strength and durability.

Pip squeaks can be made into bracelets, rings, and cufflinks, or used as unique design elements in any number of warm glass applications. Pip-pip, HOORAY for pip squeaks!