

The following steps will help you design and create a simple embellished Cabochon Pendant that includes a bezel, backing, bail and decoration. Please read all the way through at least once and get familiar with the tools before starting this project.

- 1. Prepare work area:** Your work area should be well lit for layout with dimmable lighting, if possible, for soldering (watching for surface changes when heating is easier when light is not bright or glaring). It is very difficult to work in direct sunlight. A metal table is best for safety reasons. Give yourself ample elbow room and an area to set your tools off to the side of your dominate hand. Keep an area clear on the non-dominate hand side to park your torches. I like about 24 inches on each side. A SolderNBoard tile or Lazy-Sue SolderNBoard with a wire wrapped charcoal block on it is the preferred setup to solder on. When lying out tools avoid having tools on top of each other. Keep the most used tools closest to you (copper tongs, tweezers and titanium pick). Your flux, pickle and quenching water should be within easy reach and near the SolderNBoard tile with lids off. A fire extinguisher should also be within easy reach. It helps to have a gallon of water ready in case you spill your pickle or have a hot metal splatter. Once the fire extinguisher is used it has to be recharged. Many minor problems can be corrected with the water. Prepare the pickle as described as described by the manufacturer



- 2. Safety notes:** You should never lay the torch down or stand it up while it is lit. Always shut it off when not in immediate use. It is not unusual for a torch vale to leak and have the torch stay lit. If you get in a habit of turning off the torch every time you will have a much smaller chance of having a catastrophic fire. When you are done with the Silversmithing session remove the head from the torch if so equipped.

To avoid burning yourself get in the habit of touching all metal using only your tweezers and positioning tools.



Remember everything will burn you!

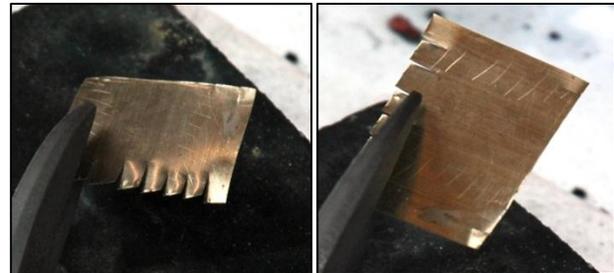
3. Design your piece: Designing is best done wherever convenient. Keep in mind that the larger the piece the more heat is required. Drawing the piece usually helps me to determine what I want to build. Many different types of embellishments are available from created balls, swirls and filigree to charms of every shape and size. Use your design experience and that of others for inspiration.



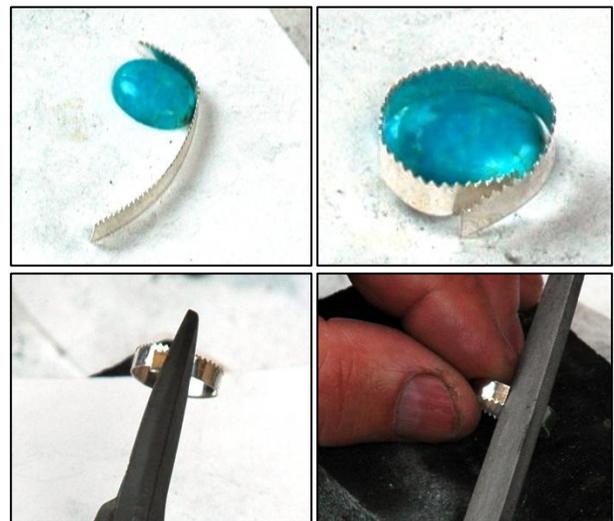
4. Cut the plate: I use fine silver plate from 20 to 28 gauge in thickness. I like at least ¼ inches around the outside of my design to use for heating surface. The more often the torch's flame hits the bezel the more likely it is that you will melt the bezel and have to start over. Place it on the charcoal block.



5. Cut Solder Strips: Cut solder into 1/8 inch strips and squares as needed out of your hard solder sheet.. Cut some of these pieces into quarter for smaller embellishments and earring solder.



6. Prepare the Bezel: Cut the end of your bezel material at 90° directly in the center of a serrated or scalloped tooth, as though you were splitting down the center. Next wrap your serrated raw bezel material around the circumference of your cabochon, start at the longest side. Where the bezel material overlaps mark the material with a marker. This mark will be close to where you will cut. Find the tooth closest to your mark but one that will make the bezel larger than your measurement. Cut that tooth through the center at 90°. Marking with a ultrafine marker and business card can be helpful. Your bezel ends must be square to each other so that when they touch there is no gap (solder will not fill a gap). You can square the ends of the bezel with a mill file. The bottom of the bezel also needs to be flat when it sits on the backing plate. Try not to bend the



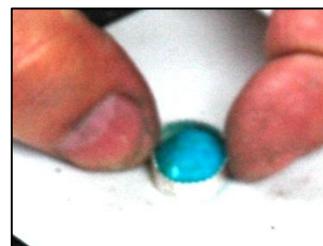
material in its vertical axis. If it gets bent, straighten it prior to soldering.



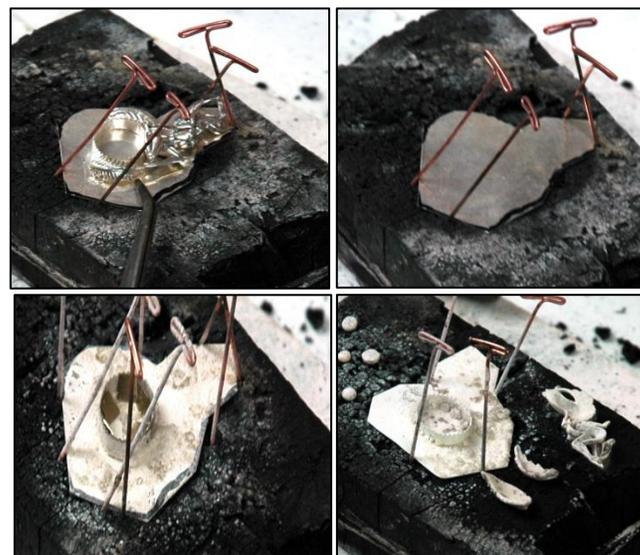
7. Solder your bezel: Compress your Bezel slightly so that it lays on block without rolling around. Lay with split on top. Spray on flux. Lay a piece of solder on joint. Heat the bezel on both side of the joint evenly while avoiding heating the solder directly. The flux should turn white. If the flux appears uneven spray the piece again. Heat again on both sides of the solder using a circular motion until the solder flows into the silver and covers the joint. Once the solder has flowed remove the heat. Turn off the torch and drop soldered bezel into pickle. Allow to stay in pickle until fire scale and flux are removed. You will see a uniform color on the entire piece.



8. Test and Adjust Bezel size: Remove from pickle and rinse. Place the bezel around your cabochon and form to fit the shape. It should conform to the shape and be a loose fit. Avoid having more than 1/16 of excess space around the cabochon. Place on ring mandrel and file off excess solder till metal is reached.



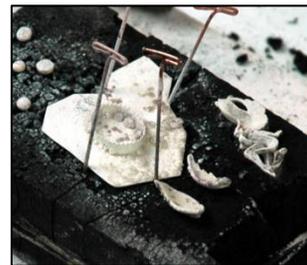
9. Prepare to Solder Bezel to Backing: Place the Bezel onto the cut fine silver plate that is on the charcoal block. Position it in the correct placement for your final piece. Use pins to hold plate in position on the charcoal block. **Leave the pins loose, they should not touch the silver plate.** You can use extra pins as reference point to remind you where to position the bezel in case it moves while soldering. You can also cut the pins shorter or bend them so the torch can get closer to the work. Spray the flux onto both pieces. Heat with torch until the flux turns into a white coating. With your tweezers gently and carefully place pieces of your cut solder around the inside of the bezel touching the side of the bezel.



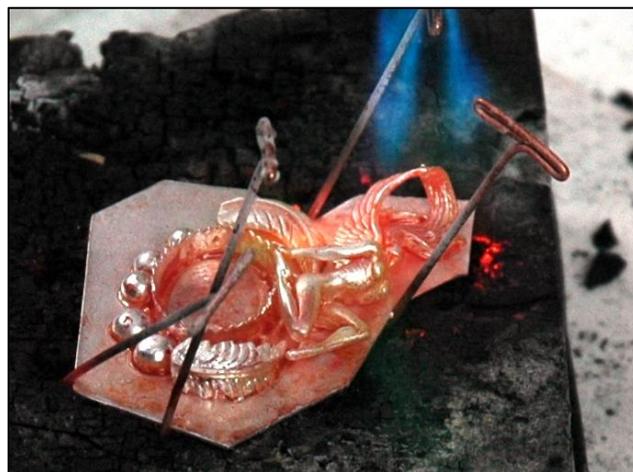
10. Solder Bezel to Backing: Heat the plate on the outside of the bezel very carefully moving the torch in a circular motion around the edge of the plate. Be patient this will take a while. The larger the plate the longer it takes to heat. Avoid heating the Bezel directly. It is very easy to melt due to it being so thin. The corona of the torch should engulf the piece until the point of the flame is touching the metal for the best heating. When the flux turns back into liquid and the silver starts to take on a shiny surface the solder will start to flow. At this point it is very important not to remove or stop the flames movement. Once the solder flows you can remove the heat. If you do not remove it soon enough or stop moving the torch you will probably blow a hole in the plate or melt bezel. Turn off the torch. Pick up the piece with the copper tongs and place it into the pickle.



11. Prepare Embellishments: On each embellishment decide where to place small squares of solder where it will touch the plate. This solder will hold the pieces to the plate. Heat and flux the embellishment until it turns white, add the solder then apply solder to attaching spot on the embellishment. Heat the embellishment directly until the solder flows. Do this to all of the embellishments. When all are ready remove your piece from the pickle and place it on the charcoal block and cage it with pins as before. Heat and flux the piece until it is white, then lay the pieces out as dictated by your design.



12. Solder Embellishments: Next heat the whole assembly again and watch carefully for the color change and the embellishment's solder to melt until they attach to the plate. It is very easy to melt the embellishments so be sure to heat the plate not the embellishments and keep the torch moving. When satisfied that embellishments are securely attached, put assembly in to pickle.



13. Trim & File: After the fire scale and flux are removed from assembly use copper tongs to pull it from the pickle and rinse with water. Trim the excess plate to the desired shape first with shears and then file the edge to shape and remove burrs. In hard to reach places you can also use a burr on a Foredom flex shaft , Dremel or rotary tool.



14. Rough Grind: Using the disposable blue wheel on your flex shaft, Dremil or rotary tool to finish shaping and cleaning the edges to the desire shape. Grind out any scratches or excess solder that interferes with the look or finish of your piece. Place in pickle again to remove any grind or grease residue. Beware! You can easily slip and ruin a piece or grind your hand with this tool. (very painful and irritating)



15. Add Bail: Make a small loop for 10 or 12 gauge half round silver wire. As you did with the embellishment, add a couple of small strip of solder to the bail where it will attach to the back of the piece. Flux the bail and assembly. Position the assembly and the bail in the desired location and carefully heat the back of the assembly until the solder melts on the bail and attaches to the assembly. Place in pickle. Use of easy solder here is very helpful so that you don't melt the piece on the front of you piece. The Spider is very helpful here to maintain position.



16. Mount cabochon: Remove assembly from pickle with copper tongs and rinse. Cut from 1/16 in thick non-corrugated cardboard like

cereal boxes that just fits into the bezel. Use as many as needed to position the cabochon too high so that it doesn't stick. Remove pieces of cardboard until it is high enough that bezel when folded over the edge of the cabochon will be securely held but not have a major amount of the Bezel covering your cabochon. If it is too high use a thinner piece of cardboard. If it is too low add more cardboard. When the fit is correct gently push the bezel with a small wooden dowel at the top the of the bezel over the top of the stone, Push small sections of the bezel's edge at opposite sides of the cabochon until the entire edge has been folded onto the stone. If the cabochon is loose in the mount di it again, Then use the bezel roller to make a final closing as necessary. Burnish with side of bezel roller or burnishing tool.. If your piece requires blackening to bring out features, this is the time to do it. Use a fine tip brush to apply the liquid to the places you want blackened. Avoid contact with areas that you don't want affected. Warning! This chemical will burn your really bad avoid getting it on your or your working surfaces.



- 17. Rough Polish:** Using the yellow wheel with rough white diamond compound remove the marks left from grinding or working piece.



Beginning Silversmithing

by David Lee Smith

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18. Finish Polish: Using the yellow wheel with finish ZAM compound bring surface to a bright luster being careful to remove only the blackening that you want removed. Polish back also. This is the completed piece after polish

