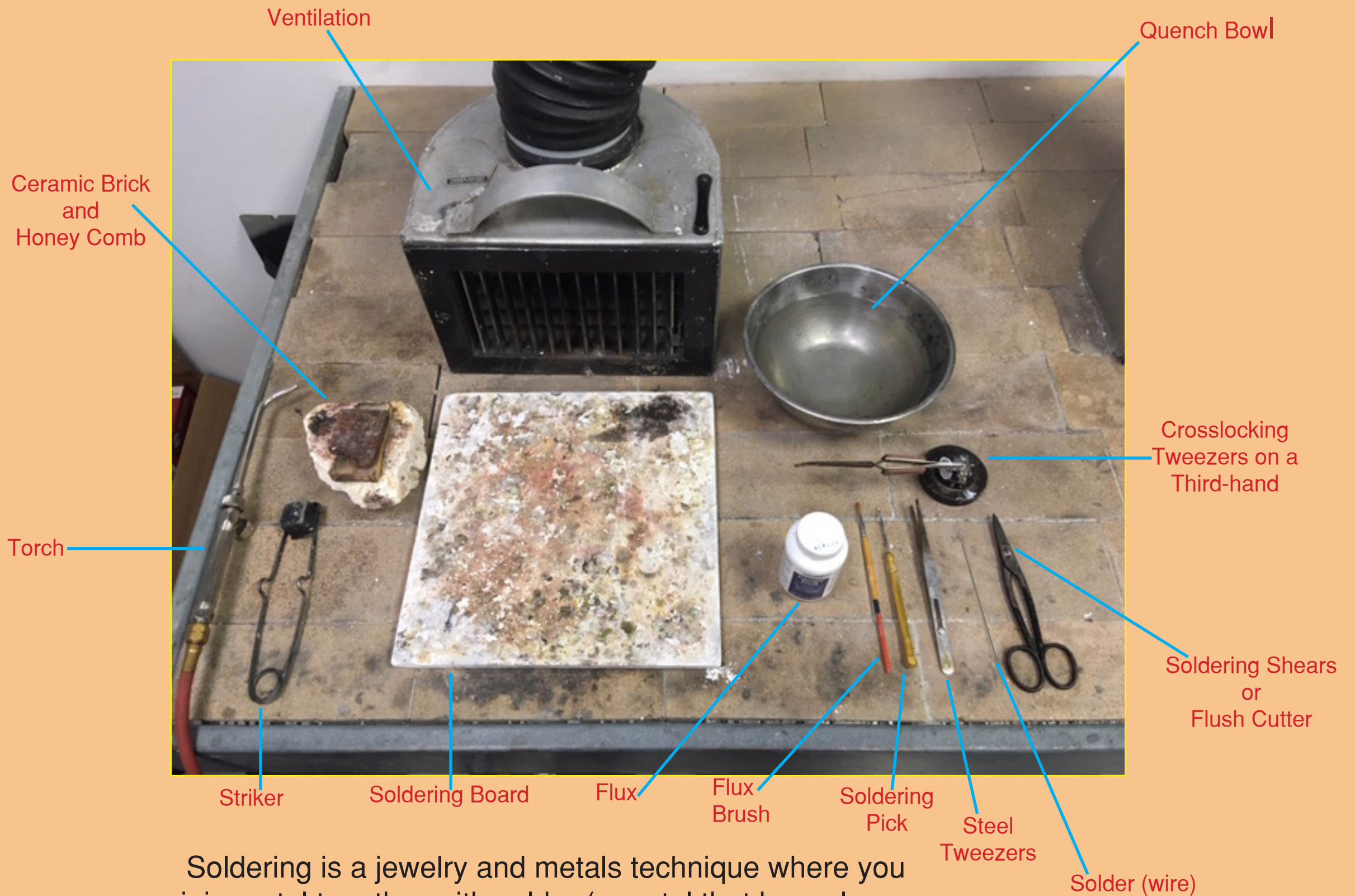


How to Properly Solder



What You Need to Solder



Soldering is a jewelry and metals technique where you join metal together with solder (a metal that has a lower metal temperature than your working metal) at the joint.



Before soldering, please be certain that you turn the ventilation switch on! Make sure that you are wearing closed toed shoes, safety glasses, as well as that hair and clothes are out of the way to prevent accidental fires. Absolutely NO paper or paper towels on or near soldering station! Be courteous of others also needing to use the soldering station!

How to Achieve a Successful Solder

6 Essentials for Successful Silver Soldering

1. Is the metal **CLEAN**?

No fire scale, dirt or grease!

2. Does the seam **FIT**?

Silver solder does not fill gaps!

3. Are the parts **ALIGNED** well?

Do edges match?

4. Have you applied the **FLUX** correctly?

Is it mixed well?

Have you applied the right amount and the right places?

Remember that flux indicates temperature!

5. What about the **SOLDER**?

What kind are you using (hard, medium or easy)?

Is it the right amount?

Is the placement correct?

6. Control the **HEAT**

Check the size of the torch tip!

Do you have the solder pick in your hand?

Are you holding the torch in your non-dominant hand? Holding it like a pen?

Adjust the size of the flame.

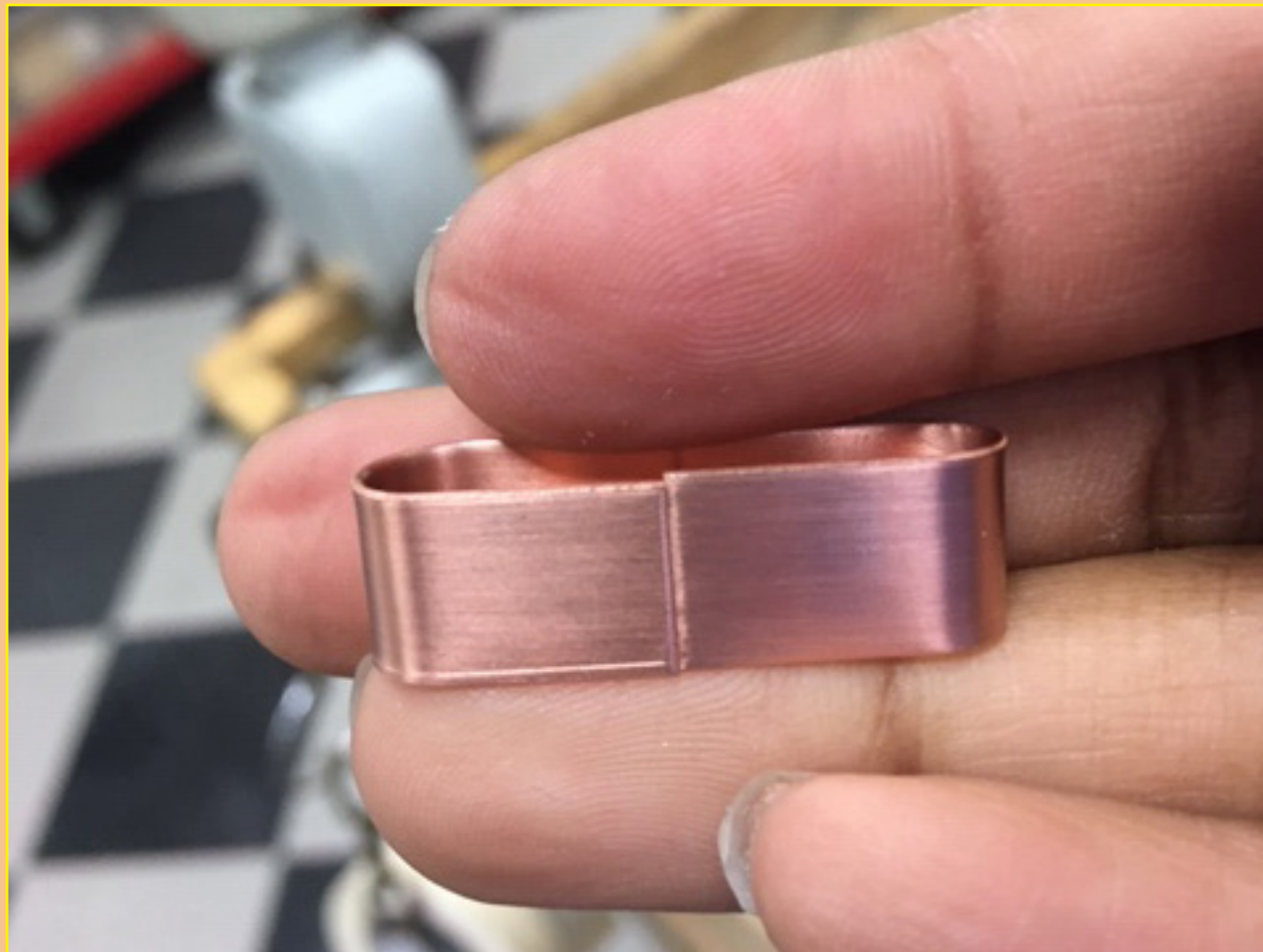
Heat the piece evenly

SOLDER FLOWS TOWARD THE HEAT!!!

Follow these steps whenever you solder! Sometimes you may miss one of the above steps, which causes the solder job to go wrong.



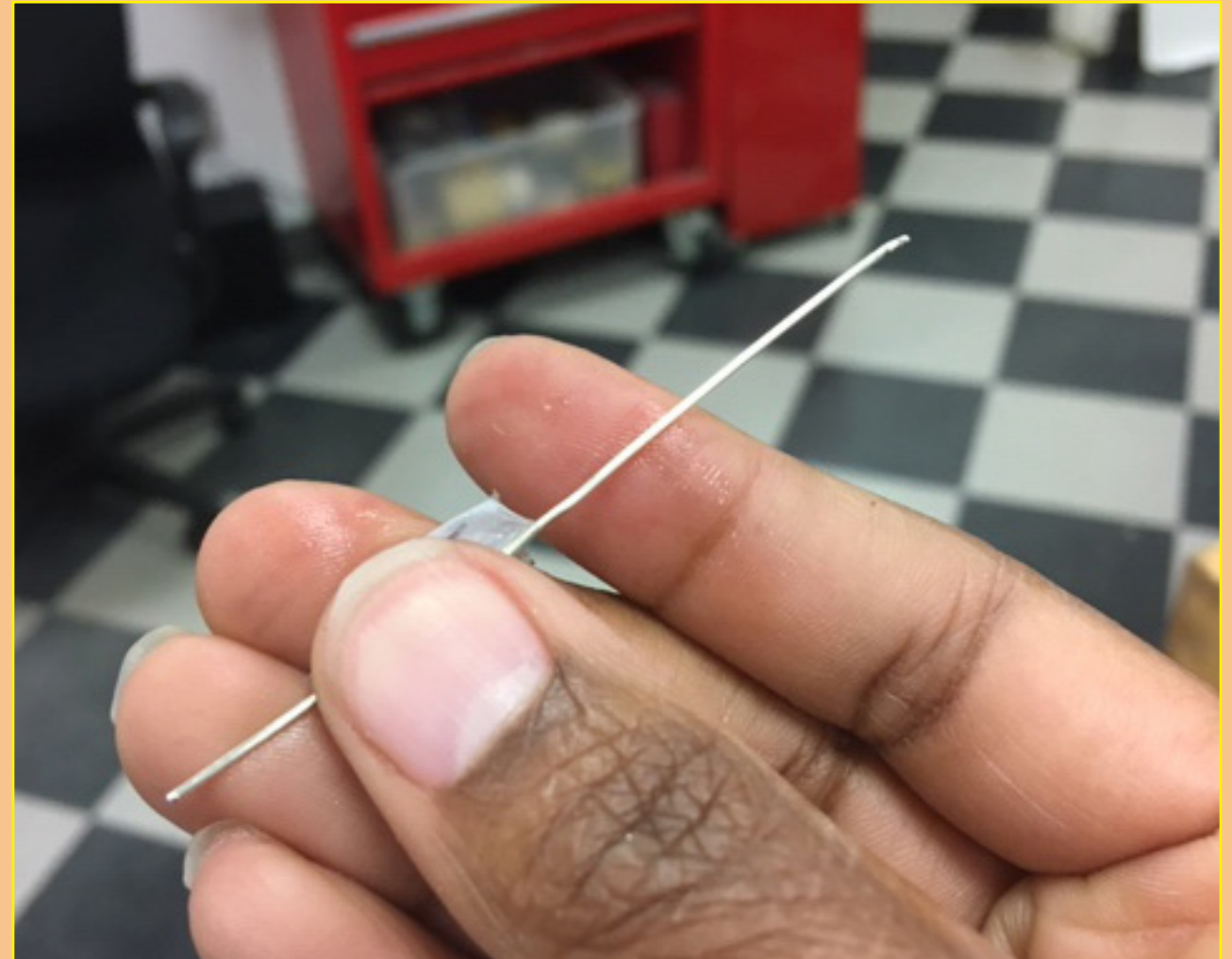
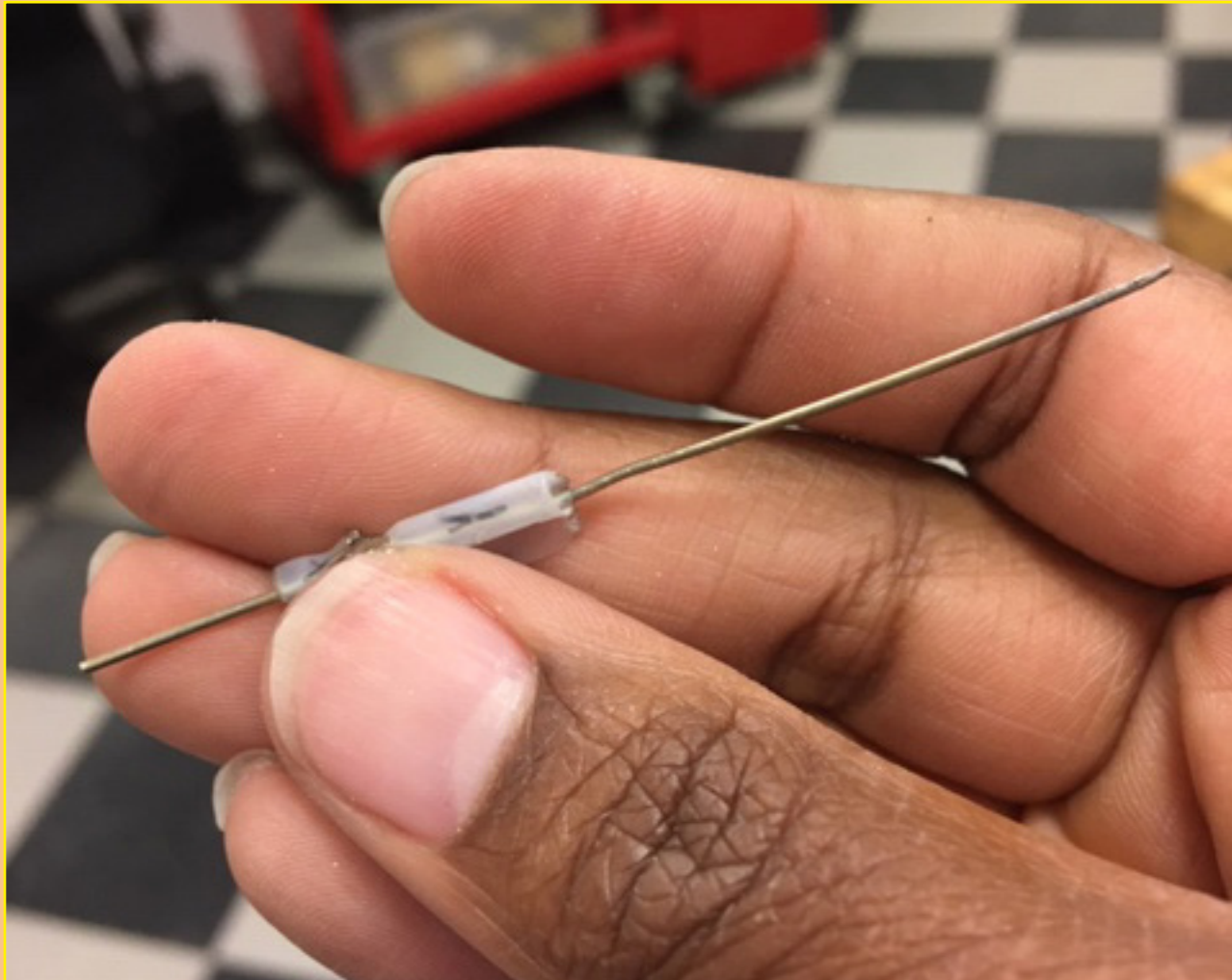
When working with metal, always make sure that it is clean!
When your metal is oxidized or have fire scale, solder does not easily flow on the joint. You can always clean the surface of your metal with sandpaper, scotch-brite, etc. Removing impurities and scratches before soldering can save you much cleanup time in the end, especially when you have to solder other components onto the metal.



When working with metal, always make sure that you file the edges. When you properly file the edges, you should have a perfect joint and connection. Solder does not fill in gaps or spaces. Take time to make sure all edges align the first time! If you are working on a time consuming project, it is sometimes a good idea to duplicate certain parts needed just in case you mess up.



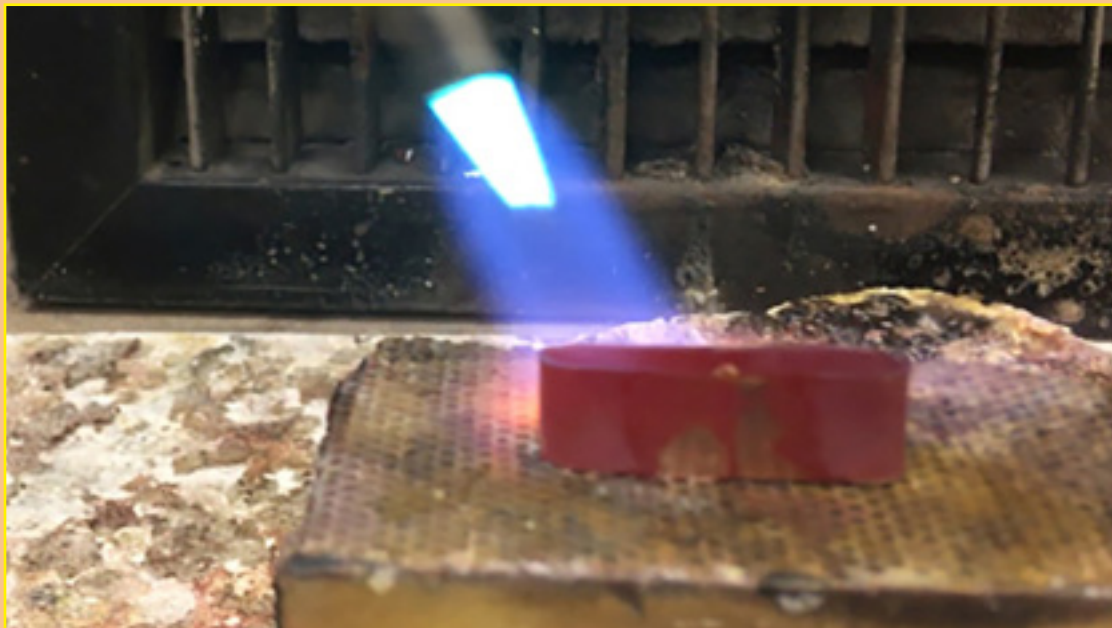
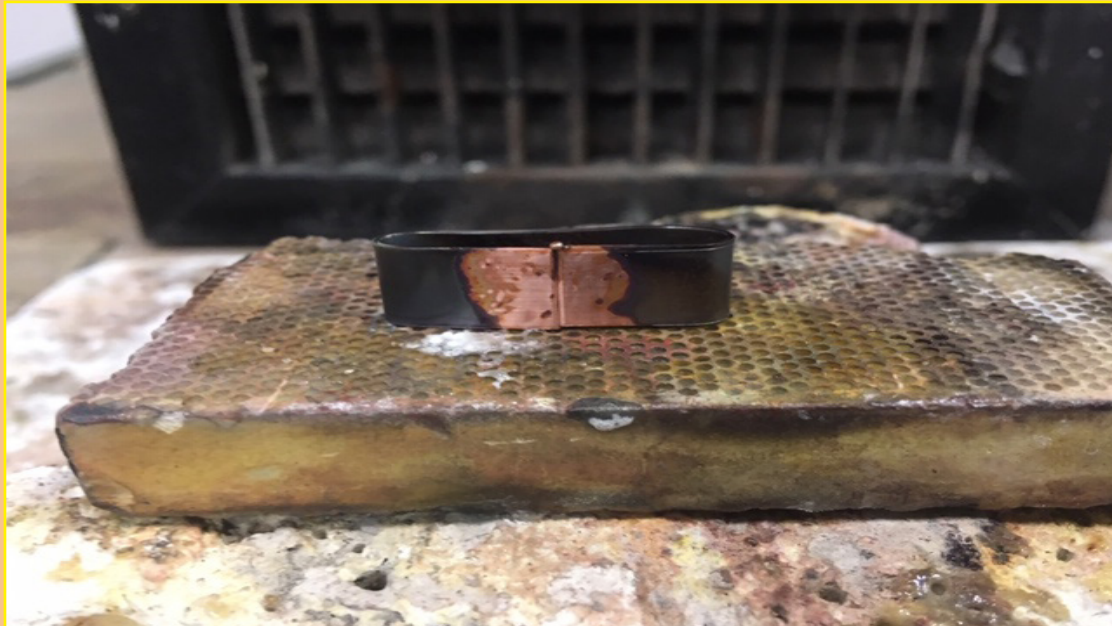
If you can visibly see any gap or space between your joint or connection, your metal will not solder properly. The more solder you add to a piece, the more clean up you will have and the more visible your solder seam will be. Be sure that you are using your file properly to ensure that you get a flat edge rather than an edge that is slightly rounded or diagonal (unless it is apart of your design).



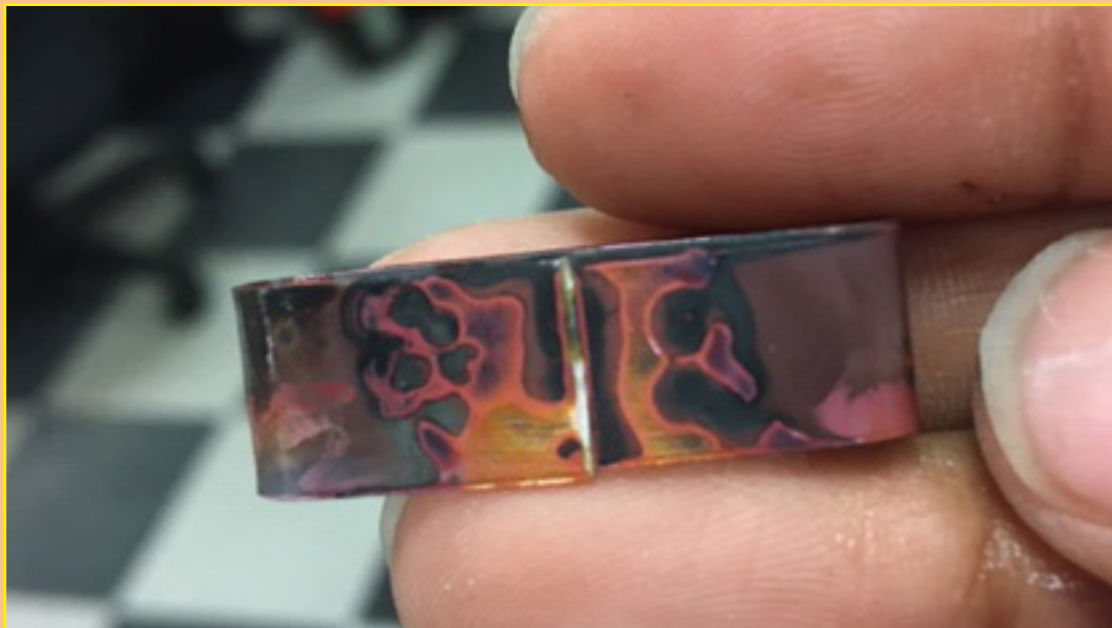
Always make sure that your solder is clean before soldering. There are some instances where solder does not want to flow. Be sure to know which solder works best for your piece. There are 3 different kinds of silver solder (hard, medium, and easy). Always start with hard, then gradually go to easy if you have to solder many components onto metal. The solder can either make or break your piece!!!



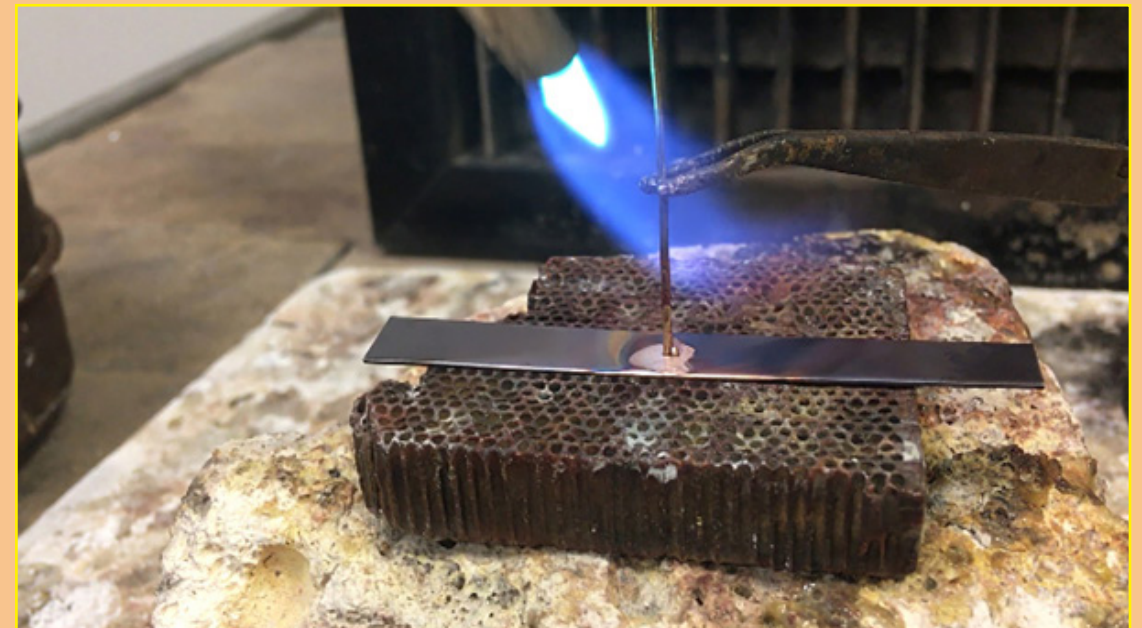
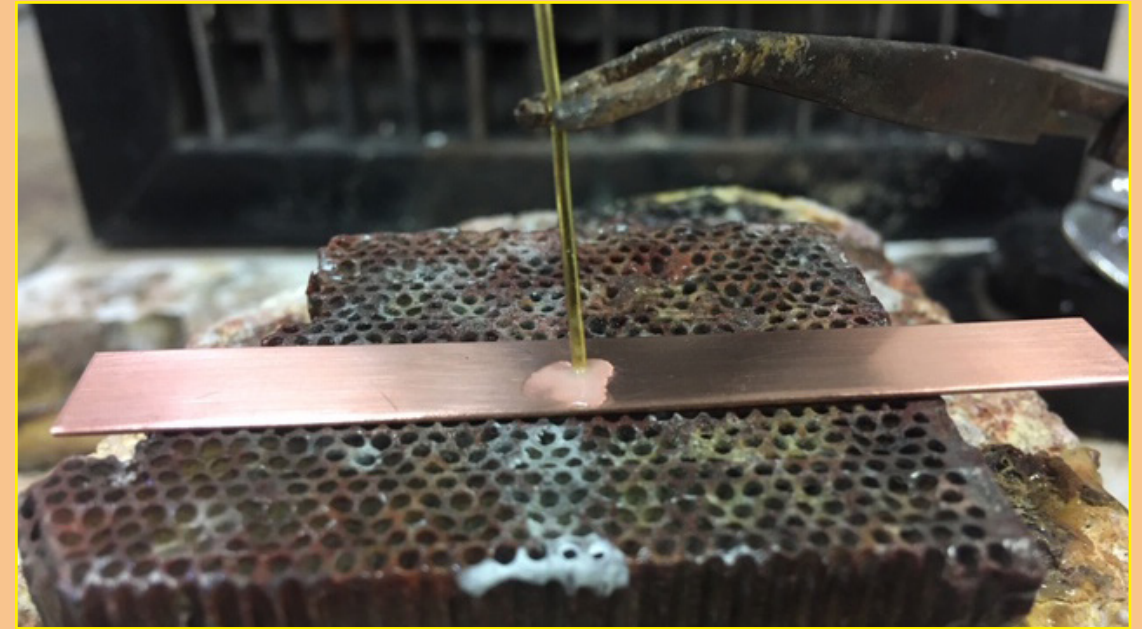
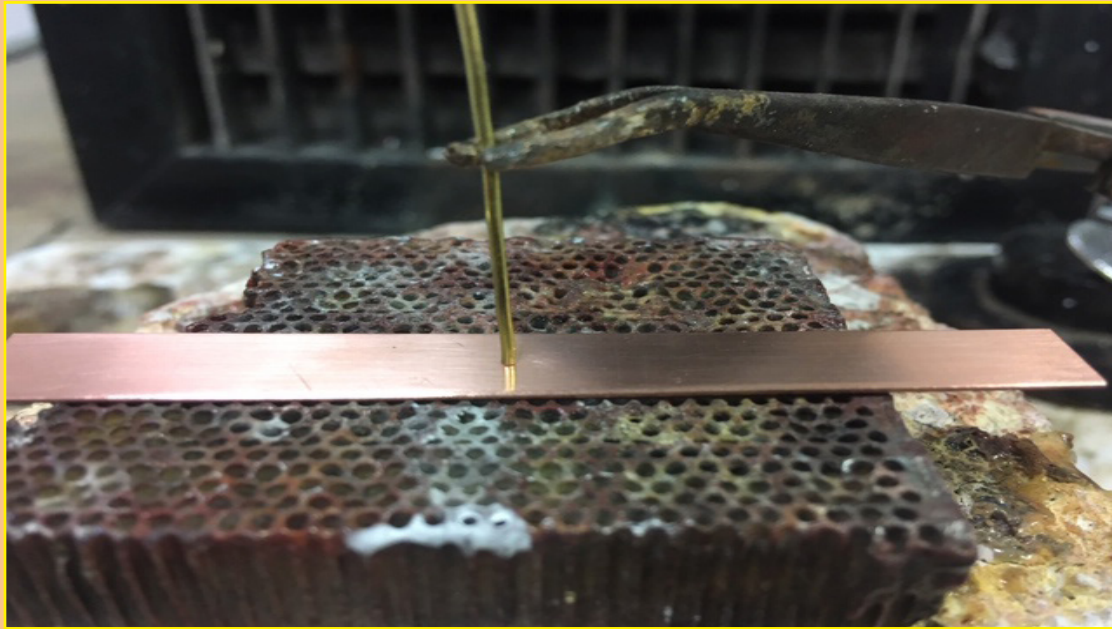
1. Be sure to set your soldering board in front of your ventilation. 2. Position piece on soldering board (use a ceramic block and honeycomb to bring piece to eye level when sitting. 3. Make sure you use the correct size torch head. (Too much heat can cause solder to flow instantly and in the wrong places). 4. Put flux on the metal joint to allow solder to flow. 5. Use striker to turn on torch then began to evenly heat piece. (Going in circles ensure that the piece is evenly heated and allow solder to flow on the joint. Never leave torch in one spot to force the solder to flow). 5. Once the flux on your joint begins to light up and look like glass, you can begin to put solder on the joint with your soldering pick.



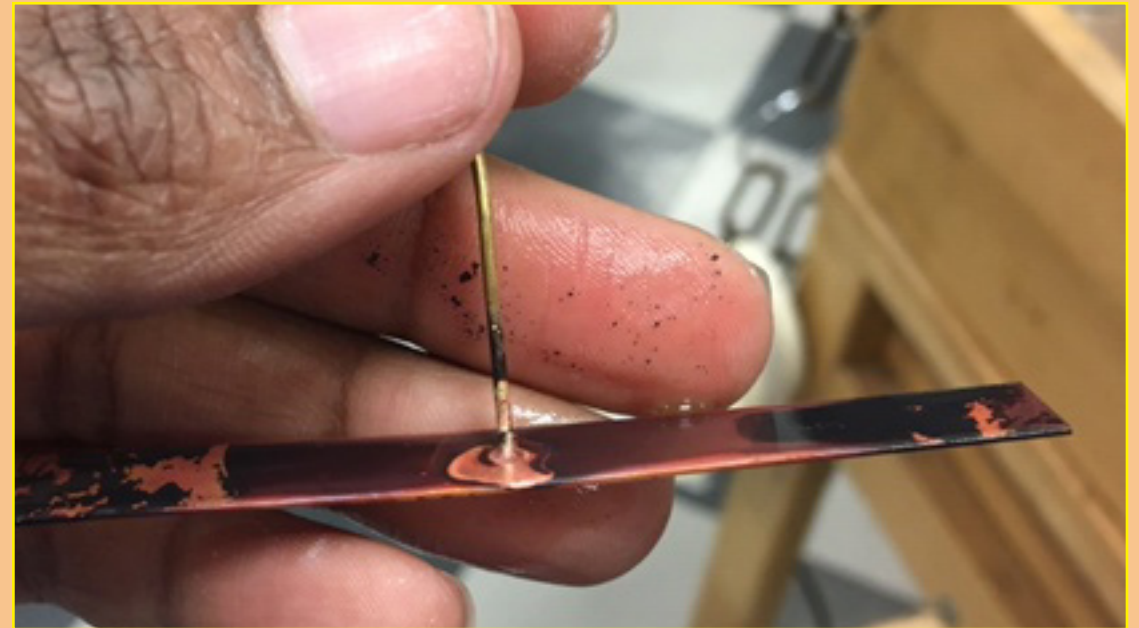
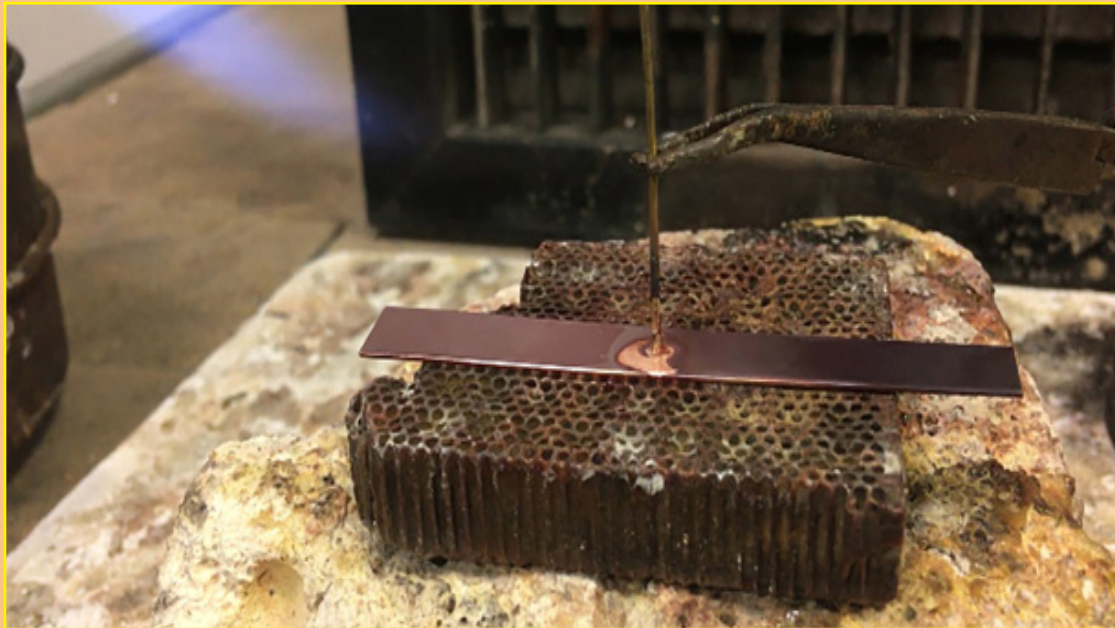
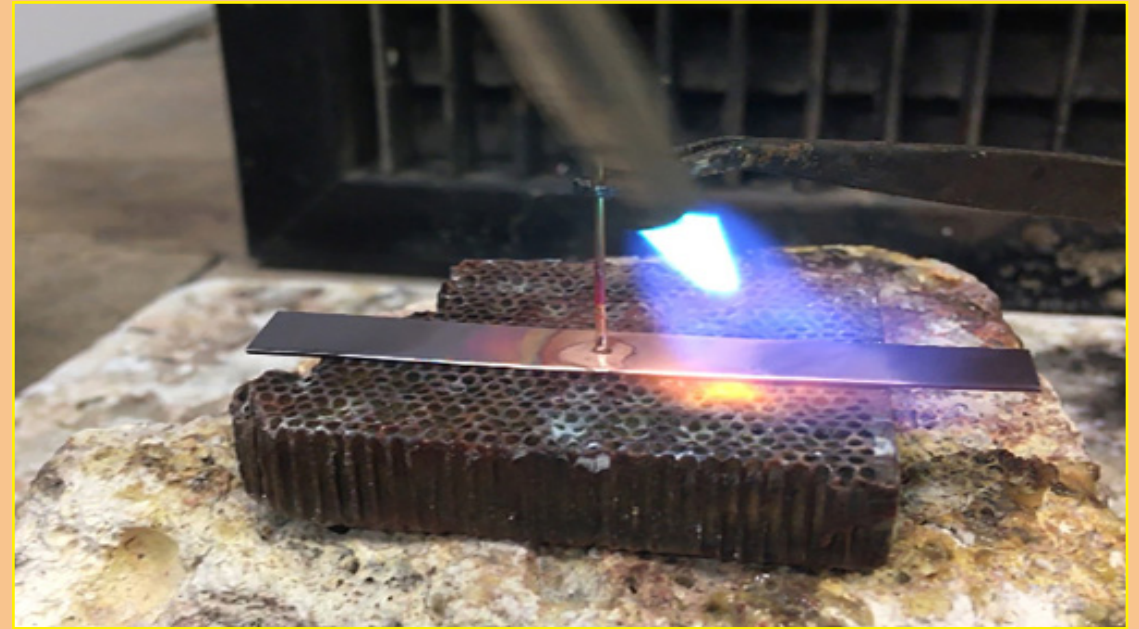
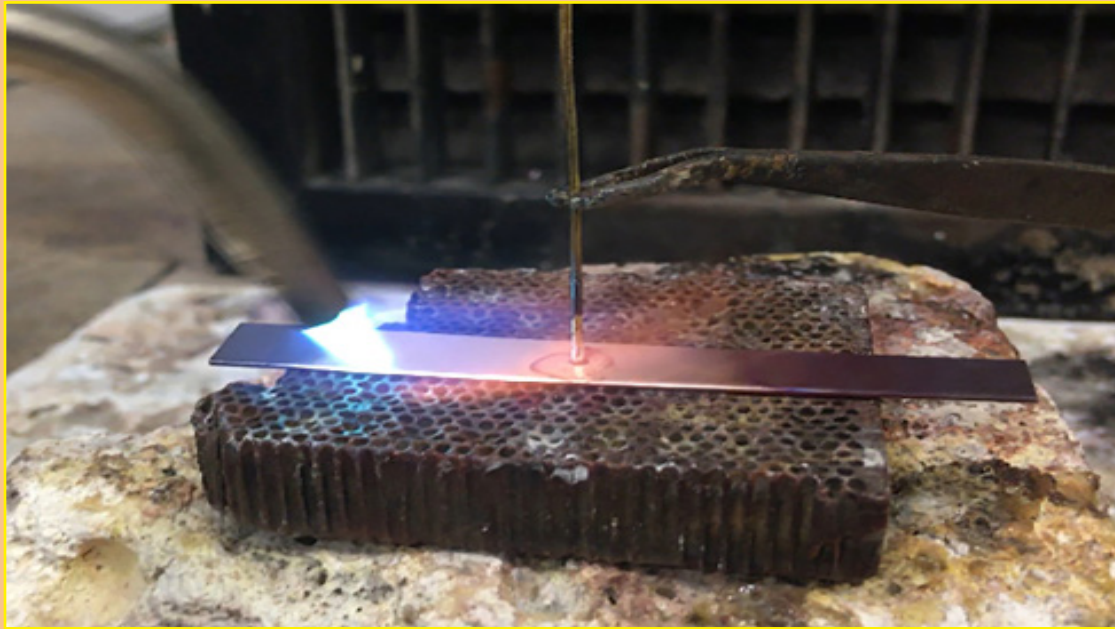
6. Put solder directly on the solder joint. Heat allows the solder to sit in place on the joint. As you can see the rest of the metal has oxidized except for the area where you have put flux). 7. Continue putting heat on the piece. (Ensure that you are constantly moving in the direction of a circle to make solder flow evenly. 8. As you move in a circle you see the solder lighting up in a bright orange/red color meaning that it is about to flow. 9. When the solder begins to flow, ensure that it reaches the entire joint by consistently moving your torch in a circle motion. (Be careful when using different metals like sterling silver because you can accidentally melt your piece if you do not control your heat when the solder flows!)



10. Turn torch off and use your steel tongs to quench piece in water. Be sure to submerge piece completely inside of quench bowl to prevent the piece from burning you. (The size of your piece will determine how long you should let it cool in water.) 11. Examine your piece to ensure that solder has reached the entire joint. (Check the outside and inside if possible. If you are not sure if it was successful, simply place piece inside the pickle pot then re-examine it). NEVER put steel inside of the pickle pot because it can contaminate other's work in a shared environment! Only use copper tongs! Be sure to quench metal in water after removing it from the pickle pot before soldering again!



1. When soldering a piece that requires the use of the third-hand be sure that you are making a direct contact point onto another surface. (You cannot force metal to solder onto another metal surface if there is little to no contact point.) 2. Put flux on both areas where the metal meet and join. 3. Use striker to turn torch on. Begin by first putting heat on the larger metal surface by moving in circles. (The larger metal surface will carry majority of the heat which will contribute to the solder flow). 4. Once you heat the flat/larger metal surface, you can then put a little heat on the wire. (Only focus on the bottom half of the wire because that's the contact point that you need to solder. Too much heat on the wire can cause it to melt). 5. Place solder on the joint and continue moving heat on both contact points, however mainly on the flat/larger surface area.



6. The more you continue to move your torch in circles around the piece, the more it contributes to the even distribution of the solder on the joint. (Too much heat on the wrong area will cause the solder to move in the wrong direction). 7. When the solder begins to appear orange/red in color, it is about to flow. 8. Consistently move torch until it flows in all directions of the joint. 9. Turn torch off and use steel tweezers to place piece in quench bowl. (Be sure to submerge piece completely inside of water so that you do not burn yourself. 10. Take piece out of quench bowl and examine piece to make certain that the solder flowed properly. 11. Once piece is out of the quench bowl, simply place it inside the pickle pot to remove oxidation. Always remove oxidation and fire scale from metal before soldering another contact point!



Once your pieces are out of the pickle and quenched in water to remove pickle solution, you can then begin to solder more components onto the metal or begin the cleaning process. Always remember to clean soldering station or area once you are complete!