



# Micro Torch Basics

*with Kate Richbourg*

Tips &  
Techniques

## Where to Buy

Finding tools and materials can be a challenge, so I have listed a few of my tried and true resources that I like, recommend and use myself.

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### [Beaducation.com](http://Beaducation.com)

Lots of tools and materials for every aspect of metalwork. A great “go-to” site. Known for outstanding customer service and great product tutorials.

### [Riogrande.com](http://Riogrande.com)

One of the oldest jewelry suppliers in the industry. They carry a huge selection of tools and materials as well as beads and gemstones.

### [Ottofrei.com](http://Ottofrei.com)

A tried and true supplier of jewelry tools and supplies. They are known for their selection of high quality tools.

### [Etsy.com/shop/KateRichbourgJewelry](http://Etsy.com/shop/KateRichbourgJewelry)

My online Etsy shop. I carry a well-selected inventory of my favorite tools and materials.

### [Etsy.com](http://Etsy.com)

Type “jewelry supplies” and “jewelry tools” into the search box. I like checking on Etsy from time to time just to browse. You’ll never know what gem you might stumble across.

*Tip: I also like to check out flea markets and swap meets. I have found some of my favorite well-worn and well-loved tools there.*

### Local Hardware Store

Find Dremel tools, sandpaper, drill bits and storage for your stuff. When I need a tool fix, I just walk the aisles in my local store.

And last, but certainly not least: Do you have a bead store or lapidary supply in your area? These wonderful small businesses are a dwindling resource and need our support. Check them out. I’ll bet there is a friendly face behind the counter ready to help.





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## Rules for Soldering

**Before you begin, note the following rules for successful (and safe!) soldering.**

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Solder won't flow on a dirty or greasy surface. Make sure that the metal is clean before soldering. Clean your metal by giving it a quick scrub with a non-bleach cleanser like Bar Keepers Friend or Penny Brite, or place it in your pickle pot and let sit for a few minutes. Rinse all pieces thoroughly under running water and dry with a clean soft cloth.

All seams must fit tightly together. Solder will not flow to fill a gap in the metal. Avoid ill-fitting seams by cutting using smooth edge metal shears or a flush wire cutter, depending on the material.

If using wire or sheet solder, apply flux to all areas to be soldered. Flux allows the solder to flow and connect the join during the soldering process. Flux also prevents oxidation of the metal surface during soldering. Paste solder does not require the use of flux, but you may apply it, if desired, to aid in the prevention of firescale.

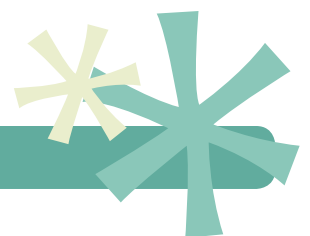
When soldering, the metal must reach the necessary temperature in order for the solder to flow. Concentrate the heat first on the surrounding surface, then on the join to be soldered. Heat all parts of the piece evenly. The solder will flow to the hottest

part of the surface and move with the heat of the flame.

Pickle removes firescale caused by the heat of the torch. Use a small crock pot to keep pickle warm. To mix pickle solution use about 1 cups of water to  $\frac{1}{8}$  cup granular pickle and mix. Your soldered piece must be pickled in between each soldering step. Only use copper tongs in the solution, as steel tools will contaminate the pickle

Proper handling, ventilation and safety precautions make pickle a safe product to use, but if you're worried about the toxicity of pickle, here are several "green solutions" to chemical pickle:

- Scrub the piece with a toothbrush and Penny Brite, a citric acid-based cleaner originally for copper cooking pots. Just apply a bit to a damp toothbrush and scrub away.
- Make a solution of about 2 tablespoons salt and  $\frac{1}{2}$  cup vinegar. Mix and add the piece. Let soak until firescale is removed. Stubborn firescale may need a bit of scrubbing with a toothbrush dipped in the solution.





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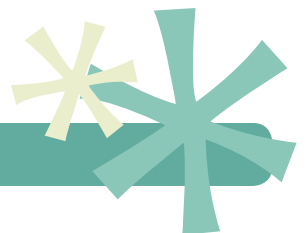
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## Safety Checklist

Before you get started playing with fire, make sure that you answer “yes” to each of the following questions. A score of 100% means that you are ready to start working on your project.



- Is your table covered with a non-combustible soldering surface like a jelly roll pan or a sheet of metal?
- Are you working in a well-ventilated area?
- Do you have a working fire extinguisher nearby?
- Are you wearing safety glasses?
- Do you know how to use your torch? Can you turn it off and on with confidence?
- Are you rested and alert and ready to work with flame?
- If you have long hair, is it tied back?
- Have you checked to make sure you are not wearing any long flowing clothing or jewelry that might ignite in the flame of the torch?
- Great job! Now that you have a perfect score, you are ready to get started.





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## Meet the Tools

Here is an overview of the basic tools needed for the projects for this course. I recommend keeping them together in bins or boxes to create your “mobile jewelry studio” and for ease of use and storage. Before purchasing the following tools, take a look around the house. You may have a few tools tucked away in a drawer that are ready to come out and see the light of day.

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### Soldering Set-Up

#### Kiln brick, Solderite board or charcoal

**block:** Your soldering surface. All of these stand up to the heat of the torch and will help to accelerate the solder process. Don't use ceramic tile or red brick. These will break when heated and do not hold and retain heat.

**Solder picks:** For applying solder and adjusting components during soldering.

**Flame retardant solder surface:** A sheet of metal or a jellyroll pan to protect your table.

**Quenching cup:** A metal or glass cup full of tap water.

**Paste Solder:** Combines base metal and flux. Sold in three densities, (easy, medium and hard).

**Flush Cutter**

**Ring Mandrel**

**Soldering tweezers**

**Safety glasses**

**Butane micro torch and fuel**

**Fire extinguisher**

### Hammering and Filing Tools

**Bench block:** A smooth metal surface to support metal while hammering.

**Chasing hammer:** A hammer with a round, smooth and slightly domed surface used to shape and flatten metal.

**Texturing hammer:** Has a pattern cut into the face to add texture to metal.

**Riveting hammer:** Has two small faces, one round, the other chiseled.

**Plastic mallet or rawhide hammer:** Both hammers will flatten metal without stretching it out or marring it.

**Pro-Polish polishing pads**

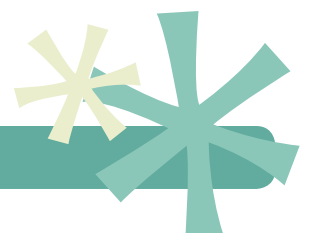
**Emery board (nail file)**

**3M Sponge Sanding Pads**

### Wire

Sterling Silver half-round, 16 gauge

Copper, 14 gauge



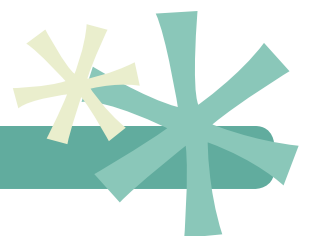


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## Meet the Max Flame Torch



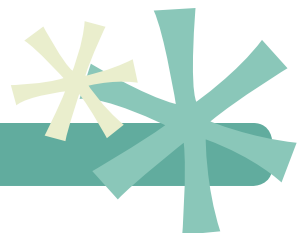


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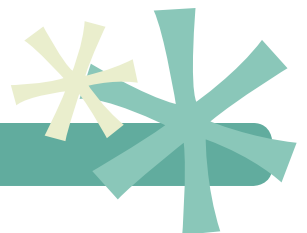


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## Meet the Blazer Torch





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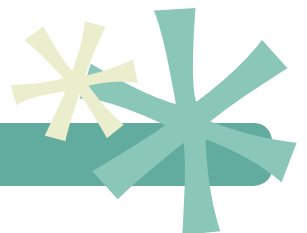
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## How to Size a Ring Band

Sizing a ring band can be tricky, but with a few tips and tricks, you'll be making perfectly-sized rings in no time.

- Cut a strip of paper about  $\frac{1}{2}$ " wide and 5" long. Wrap the strip around the knuckle of the finger where you will wear the ring. The knuckle is usually the largest part of the finger and the ring needs to be large enough to slide over it.
- Make a fold in the strip right where the edge of the paper starts to overlap. You want the length of this strip to be the exact circumference of your finger. Remove the strip and measure the length in millimeters.
- To make the ring fit, you'll need to add the measurement of the thickness of the metal that you are using to make the band. If you skip this step, the ring will be too small. For example, if you are using 18 gauge metal, the thickness in millimeters is 1.27mm. Round down to 1mm and add that extra millimeter to your measurement from Step 2.
- If you are making a ring band that is wider than about  $\frac{1}{2}$ ", add another 1mm. Wider ring bands need that extra millimeter to fit.
- Make a template from heavy card stock and mark it with the length, size, and finger that it is for.





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Credits

|   |                       |
|---|-----------------------|
| <b>Instructor</b>                           | Kate Richbourg        |
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| <b>Instructional Designer</b>               | Grace Baumgartner     |
| <b>Videographer</b>                         | Jarrold Sumpter       |
| <b>Switcher</b>                             | Adam Speas            |
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*Kate*



*Hammer to size*



*Tool Kit*



*Perfect band ring*

