



Making a Simple Bangle

If you can make a ring, you can make a bangle!



Calculating the Length of Wire Needed for a Bangle

The first thing you'll need is a bangle sizing set, I can't remember where I bought my sets from personally, but Gesswein has a pretty decent looking set for \$26 (item number: 820-8056). Just as with rings, you'll need to find the bangle that fits and measure its inside diameter, in our case that's 55.62. Then measure the thickness or diameter of the wire you're using to make the bangle, which in our case is 2mm. Then simply use the maths below to calculate the length of wire required.

Oh noooooo - there's maths!

$$\begin{aligned}\text{Length of wire needed} &= (\text{inside diameter} + \text{metal thickness}) \times 3.14 \\ &= (55.62 + 2) \times 3.14 \\ &= 57.62 \times 3.14 \\ &= 180.92 \text{ (which we'll round to 180mm)}\end{aligned}$$



Before we measure the length, I'm going to make sure that one end of the wire is filed perfectly flat and perpendicular to the length of the wire. You'll also want to make sure your wire is perfectly straight too. If we start with wonky wire, we're going to get a wonky measurement later.

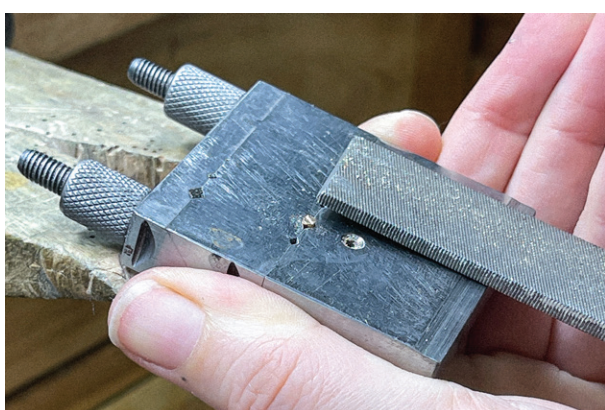


Next, we are just going to use a ruler and a sharpie to mark a line at the exact measurement we need for our bracelet.

Remember, at each stage, we want to be working as accurately as possible. If we butcher just one step, it will have repercussions later down the line.



And now using my O saw blade, I'm going to cut just to the waste side of the line I made. Don't cut on the line or you risk making your bracelet too small.



Then I'll file the edge perfectly flush. You can do this by hand or using a miter vice. I'll show you with a miter vice because I already showed you by hand :). Got a little trick for you later though if it's still not perfect - but try and get it as close as you can. Make sure you keep checking the length at this stage and don't over file it.

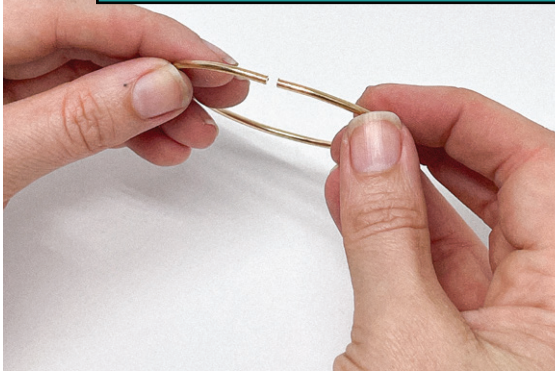


Forming the Bracelet



There are so many ways to form the bracelet, but I'll show you the one requiring the least tools - just your hands and a pair of half round and flat pliers! Now, we don't need the bracelet to be round at this stage, we just need to bring the ends together for soldering, we can make it perfectly round later. So I'll simply form the main shape by hand, and then use a pair of half round and flat pliers to bend the edges inwards so they meet perfectly in all directions. We want our join to look like one single piece of metal, we don't want one edge of the bracelet to be higher in any direction.

Manually push the edges of the bracelet past one another, and then pull them back slightly to allow the join snap together



The join should come together in perfect alignment in every direction. If it's not, don't even think about soldering. Capiche!?



So take a little time here and make sure everything is in perfect alignment. If we don't get it set up correctly for soldering now, we won't be able to fix it later without going through the drama of cutting and re-soldering the bracelet. It might take a little more faffing around in the first place, but it saves time in the long run if we get it right the first time. As you can see, the bracelet isn't remotely round looking, and that is perfectly fine right now.



What we Don't Want!



The edges of the bracelet should not be pointing inwards. The solder joint will be weak and clearly visible

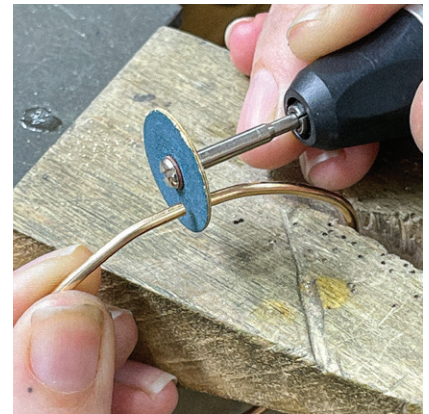
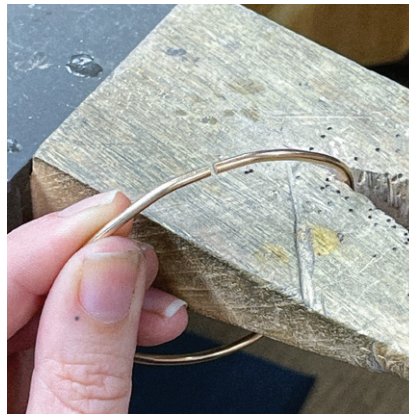
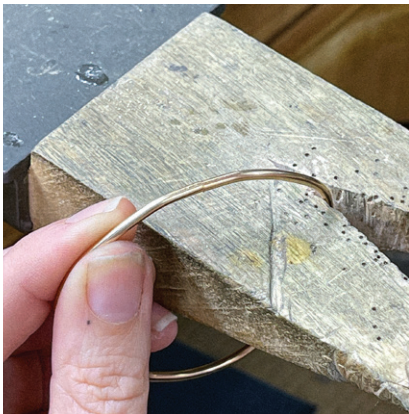


We don't want the edges of the bracelet to be meeting with a step, again the solder joint will be obvious



We don't need a perfect circle, but we also don't want a slight point at the join. This will give a weak and obvious join

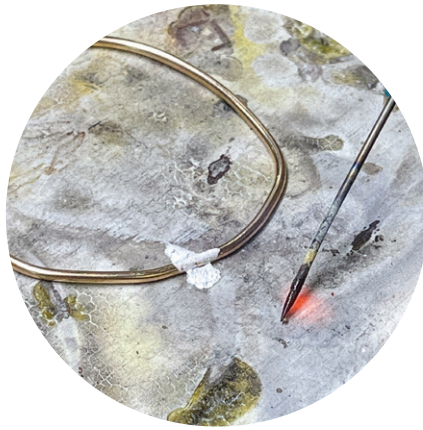
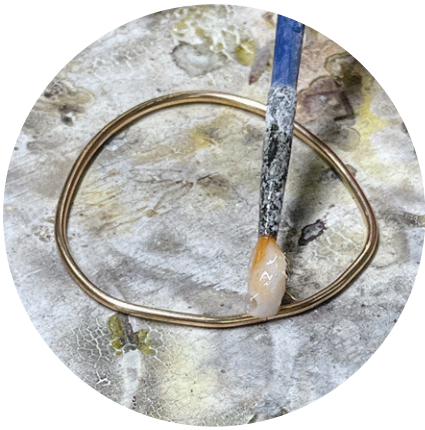
Getting the Perfect Solder Joint



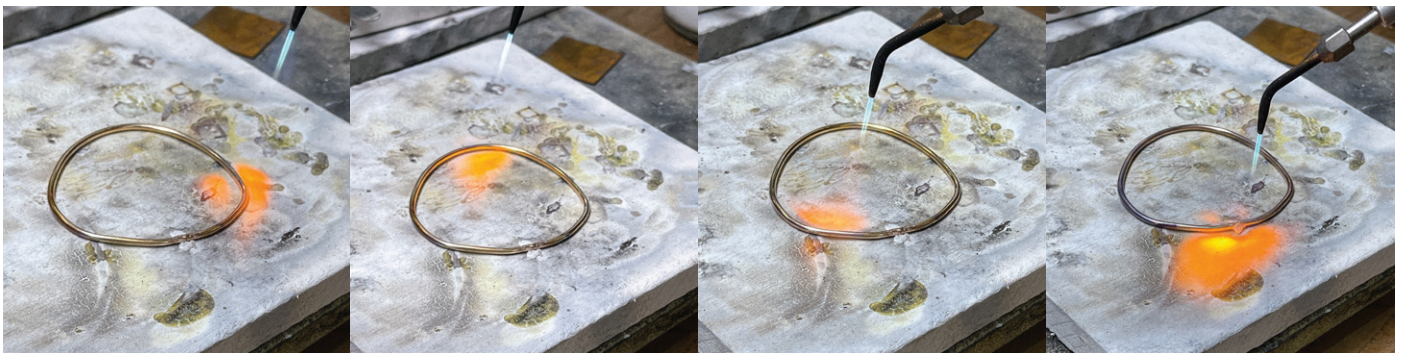
Now I have the edges of my bracelet perfectly aligned and it's ready for soldering. But What if your filing wasn't quite perfect? That is no drama at all. Here I've threaded my bracelet onto one side of my bench peg, basically just as an easy way to hold it so I can gently pull one side and open up the joint ever so slightly. Then I have two pin hole sanding disks back to back on a screw mandrel in my flex shaft. Place the sanding disks in the small opening and set the flex shaft running at a medium speed. Once the flex shaft is running, slowly allow the bracelet to close so that both sides of the joint are sanded at once. This should just take a second or two at most to get the perfect join.



Soldering the Join



Add a little flux to the join, as always I'm using my favourite Handy Flux from Lucas Milhaupt, and place a tiny amount of solder on the join. I'm using a piece about 1.5mm square that has been rolled as flat as possible. We can always add a tiny bit more solder if it's not enough, but using just the right amount makes clean up so much easier later on.



Once the solder is in place, I'll gently heat around the whole bracelet a couple of times. The reason I do this is because by forming the bracelet, we have work hardened it just a little. If I were to go and just heat the area say, an inch either side of the joint, yes I could get everything up to temperature and the solder would flow, but the tension within the bracelet could cause the joint to open slightly. By heating the bracelet gently all the way around first, we are basically annealing the metal evenly, so the tension is removed. This way our join shouldn't open up when soldering.

Once soldered, wait a few seconds for it to cool slightly, then quench and pop it into the pickle.





Once out of the pickle, we have something that resembles a bangle. But maybe one that got ran over by a car. So we are going to make this perfectly round now using a round bracelet mandrel. If you prefer your bangles oval shaped, then you can absolutely use an oval shaped mandrel instead.



I'm using a round bracelet mandrel for this one similar to item #112113 from Rio Grande. Mine isn't a fancy one as you can see, but it works a treat.

So I'll pop the bracelet on the mandrel and pull it down as far as I can get it to go.



Just as when making rings, I'm going to tap down on the outside of the bracelet where it isn't in contact the mandrel. As I'm tapping on the bracelet though, I'm still pulling it down the mandrel with my left hand. This is going to take a few passes around the bracelet to make it perfect, especially if you're using a mallet. You can use a planishing hammer too of course, but that will just require slightly more clean up later.

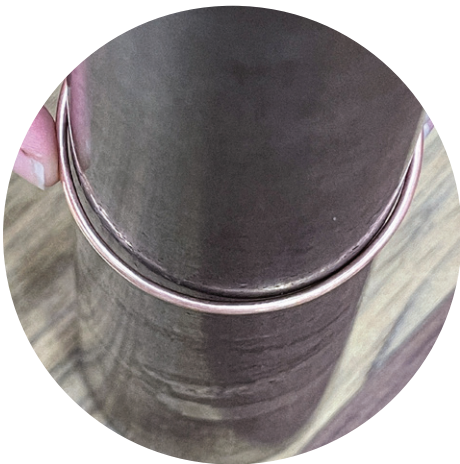


Make sure the bracelet is fully in contact with the mandrel all the way around. But remember every action has a reaction, so this will definitely take at least a couple of passes around the bracelet with the mallet.





Now we have our bracelet perfectly round, we need to make sure it's perfectly flat. So I have it on my steel block, and again wherever it's not in contact with the block, I'm just going to bash it a bit with my mallet. If you're using a planishing hammer for this part, make sure you're hitting the metal straight on so you don't leave any dings on it from the edge of the hammer. And hopefully this goes without saying, but remember to flip the bangle and repeat on the other side.



But, god damn it, every action has a reaction. And so now our bracelet is just slightly out of round again. But it's not a biggie, back on to the bracelet mandrel it goes, for a gentle tap. Don't abuse it too much this time, we don't want to send it wonky in the other direction again. Just gently tap it down until it's back in contact with the mandrel again.



And there we go, no light is coming through between the bracelet and the mandrel, so we are ready to get things all polished.



Finishing the Bangle

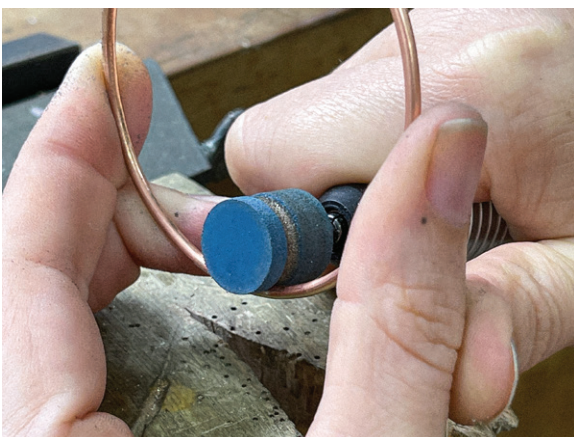
In this case there's very little solder to clean up around the join, so I'm going to jump straight to using my Eveflex coarse rubber wheel. But if you have a little extra solder around the join, you can give it a quick file first with a #2 half round needle file.



Because my wire is round, and I want to keep it that way, I'm going to create a rounded channel in my barrel shaped rubber wheel to roughly match the diameter of my wire. You can do this by running the wheel against an old file, a diamond plate, or pretty much anything that will cut into the rubber wheel to create a channel. Don't worry about getting that channel perfectly rounded at this stage, it will round itself out as we use it in a second.



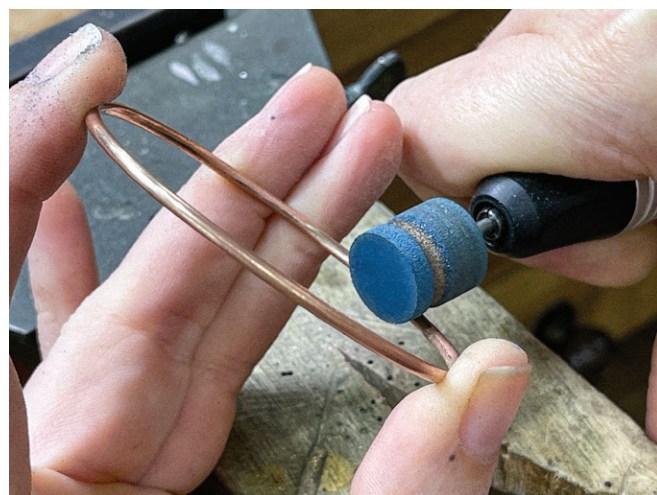
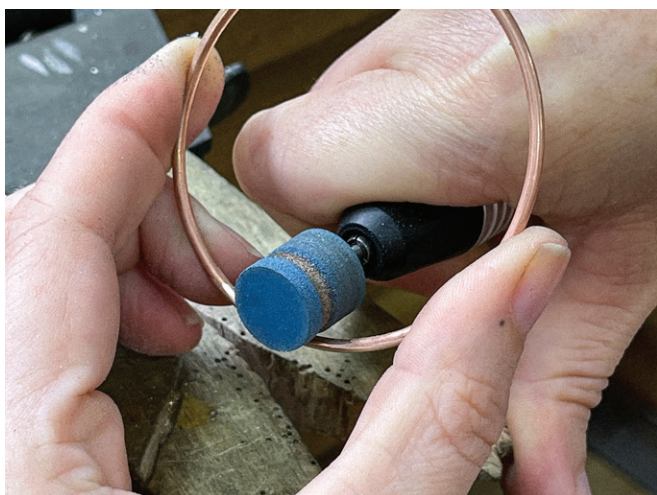
I kept my wire in pretty good condition as I formed the bracelet (I didn't put any dings on it), so I'm going to use the coarse wheel just to clean up the solder joint. I'll place the little groove in the rubber wheel directly over my join and keeping it moving back and forth. But, if you used a hammer to form the bracelet, you'll definitely want to go all the way around the outside edge of the bracelet with the coarse rubber wheel - remembering to keep it moving at all times.



And of course as well as the outside, you'll want to go around the inside with the coarse rubber wheel too. Again though, if there aren't any heavy scratches or marks on the bracelet here, you can just clean up the solder joint.

When working on the inside or the outside, you'll probably find that it's easier to keep working in one particular position, and then rotate the bracelet to work on small sections at a time, rather than trying to hold the bracelet still and move the rubber wheel around the bracelet.





Finally you'll want to make sure you get the sides of the bangle too! Remember if we want a bright and highly polished finish all over our bracelet, we have to go through every finishing step all over the bracelet too. Again I'm just hitting the solder joint here though, but if you have scratches, go all the way around!

Now you can repeat the process with the fine (red) rubber wheel and the extra fine (light green) rubber wheel. Just as with sandpaper, don't move onto a finer grit until you have removed all the marks created by the previous grit. I can't say this enough, but our final polish is only as good as our prepolishing stages allow it to be. If we don't take our time to get this stage perfect, the final polish won't be perfect either.

Polishing the Bangle

I want to take a look here at using a little more than just Zam polishing compound. Zam is a great one stop compound, and with proper finishing you can bring things to a really nice bright finish. But what if you want an even brighter finish. Well that's when you can start using a multiple step polishing process.

There are many polishing compounds out there to do this with, and it can be ridiculously confusing as to which compound comes at which stage. Thankfully the brand of polish I prefer makes this a lot easier by using grits rather than arbitrary terms and names - but we'll look at that in a second.

Polishing in stages is like using sandpaper. The more different grits you use, the better the finish will be, but we have to balance getting a good finish with the time it takes to do this. So for everything but platinum, a two or three step polishing process is usually enough. We'll keep this simple and use two steps though.





The polishing compounds I prefer to use are from Japan and are developed for platinum, but they do work equally well on all metals. These can be purchased from Otto Frei or Gesswein in the US.

I find them relatively clean to work with and not gummy or sticky as some polishing compounds can be. I also love that they are numbered (800 being the coarsest and 8000 the finest). The final polish is using platinum blue which is the unmarked pack at the top of the image - but don't worry, when you take that out of the pack, it's pretty distinctive! It looks like a smurf.....

In this case we are just going to use the 1500 polishing compound followed by platinum blue for the final polish. If you want to go full on crazy with this polishing marlarkey and add in another step, you can use the 4000 compound in between 1500 and platinum blue.

There are many other polishing compounds available that work in multiple step processes, and you'll find that every jeweller has their favorites. These are just my personal choice. As with sanding though, when it comes to selecting your own polishing compounds, just try them. At each stage, ask yourself "is this removing the marks created by the previous grit", if the answer to that is no, then simply use a coarser grit.

I hear a question though - "why not just use them all?" well if you can justify the time it takes to go through every polishing compound and still sell your finished piece at a profit - go for it! But for the most part, this simply isn't practical (or necessary).





Hopefully this goes without saying by now, but make sure to wear a mask and safety glasses when polishing with your flex shaft motor. Here I'm using a particularly plump cotton buff (Rio Grande: # 338497) and I'm just touching it to my 1500 compound for a few seconds. I scribed 1500 into the compound myself with a needle burnisher as the compounds aren't marked, and they all look the same.



Then just as I did with my rubber wheels, I'll start by polishing the inside of the bangle. I'm keeping the buff moving back and forth at all times, working in a position I find comfortable, and rotating the bracelet little by little to ensure I polish every single spot.

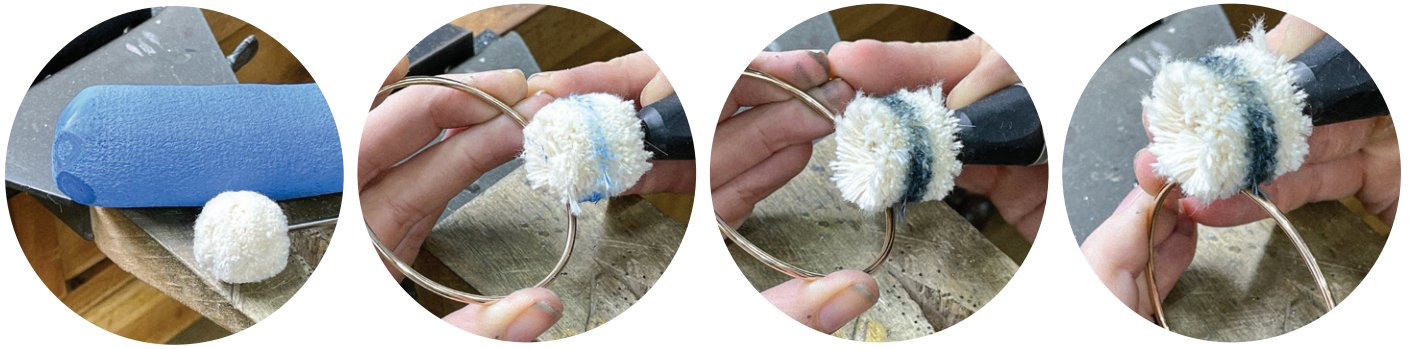


Onto the outside of the bracelet, you may need to add a little more polishing compound at this stage.



And finally onto the sides of the bracelet too. Double check at this stage that you have polished the entire surface of the bracelet before moving on.



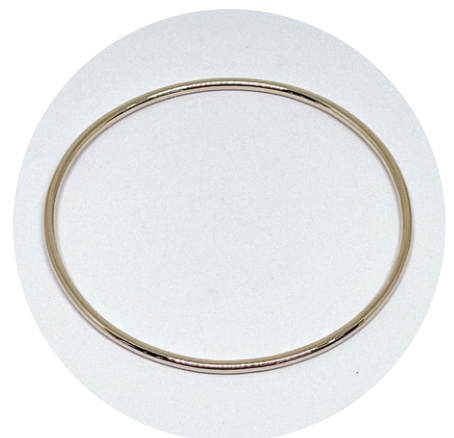


Once you've finished polishing with your 1500 compound. Take a break from polishing, wash your hands and your bracelet thoroughly to get rid of any polishing compound that remains on there.

Then get a brand new buff for your next polishing compound (Platinum Blue), and simply repeat the entire process again.



When using multiple polishing compounds, ideally we don't want to use the same buff for different compounds, and we don't want to contaminate the buffs either by storing them all together. I have a separate box for each of my polishing compounds together with buffs that are labeled for use with that particular compound.



And that's our bangle all done! Now it's time to make it a little more you!



The Tools

Bangle sizing set

Gesswein #820-8056

Digital capliers

Rio Grande #116179

Bracelet mandrel

Rio Grande #112113

Half round and flat pliers

Rio Grande #111180

Pin hole sanding disks

Gesswein #845-1008

Screw mandrel (to use with sanding disks above)

Rio Grande #333122

Dead blow mallet

Rio Grande #112432

Steel block

Rio Grande #112553

Stoddard polishing buff

Rio Grande #338497

Japanese platinum polishing compound in 1500

Otto Frei # 147.390MAIN

Gesswein #215-0049

Platinum blue polishing compound

Otto Frei # 147.395

Gesswein #215-1784

