

How to make a set of Golden Length “Necklaces”

This document is about the purely **practical** side of how to make a fairly accurate pair of Golden Length necklaces using a few cheap measuring tools. For the background on the golden length please go here [Bernie, just put a link in here]

To do what follows you will need:

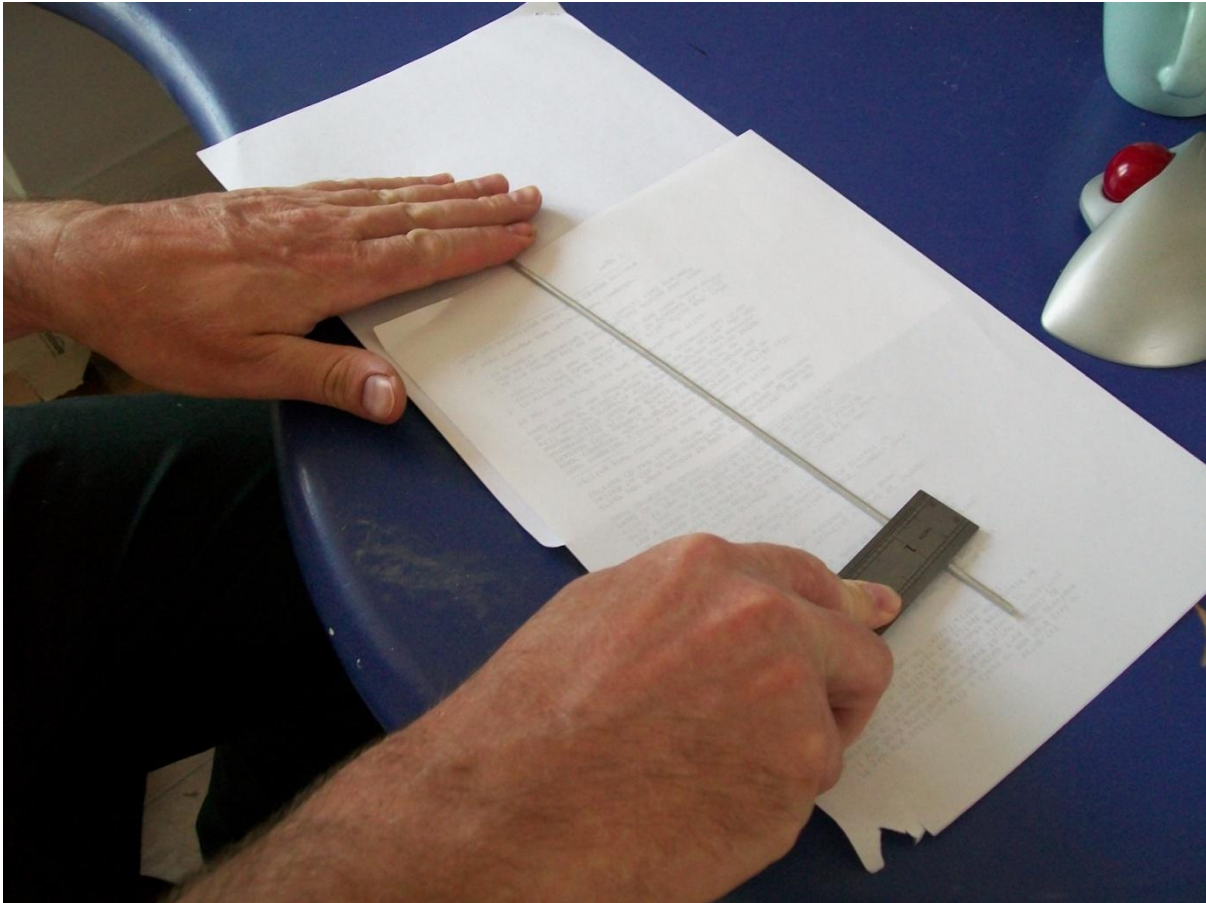
- 0.5m of 3mm diameter aluminium wire. (Ebay, very cheap)
- A pair of pliers or snips
- A 1m steel rule
- A couple of 12” steel rules (see alternatives in the text)
- A 150mm digital vernier gauge. (Ebay about £15.00)
- A magnifying glass (cheap and crappy is fine)
- A sanding block
- A sheet of 40 or 60 or 80 grit abrasive paper
- Some tape
- A permanent marker or CD marking pen

Straightening the wire

Aluminium wire is usually sold coiled, so to get accuracy you will have to straighten it. Cut two lengths of wire at about 14” using a pair of pliers or snips. Then, roughly straighten the wire with your hands. Don’t bother getting it as good as you can, just get it so it is fairly straight and no longer coiled.

Find a flat surface and lay a sheet of paper over it to protect the surface and the wire. Next, get your two 12” rulers and put them on top of each other. You could tape them together if you want to. The idea is to make a stiff flat metal surface with which you can roll the kinks out of the wire.

Put the wire in front of you so it is across your body like a rolling pin. With your left hand flat roll the wire; at the same time roll the wire with your right hand using the stiff end of the rulers. It is very similar to rolling pastry. Press the rulers down fairly hard on the wire and you will take out all the little kinks and bends. Just keep moving the ruler roller down the length of the wire until you have done the whole length. Your wire is now straight. Test it by gently pinching the wire between your finger and then running your pinched fingers down the length of the wire. If you find any kinks, give them another roll.



Tolerance

The golden length we are cutting to is 13.282". Stated this way the implication is that we are working to a tolerance of plus or minus .0005" – but we are not and the reason for that is that (a) we can't! and (b) plus or minus 1/64" will do. The truth is I do not know the accuracy of the method that follows but I believe it works well within the tolerance required.

Squaring the end

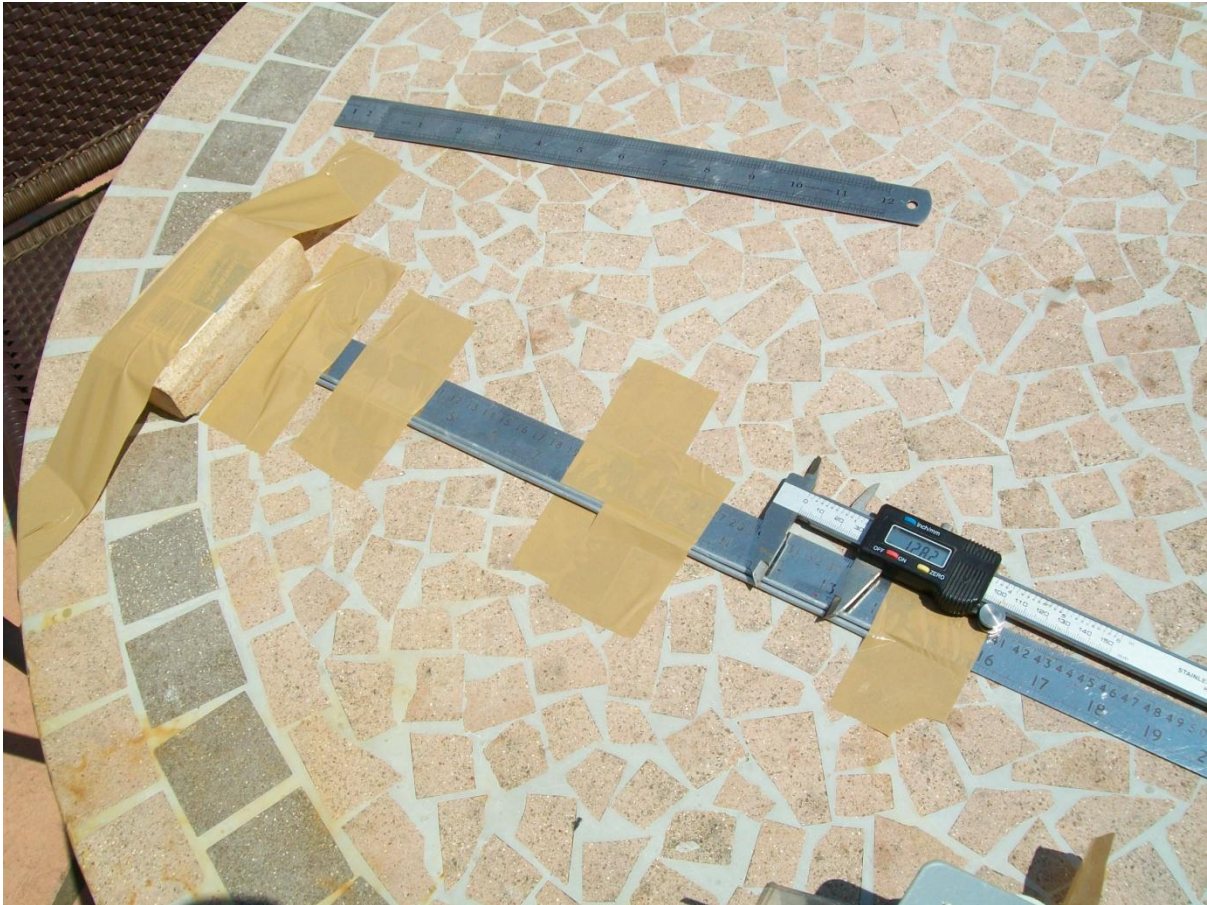
The idea of our method is that we are going to add 1.282" as measured on our digital vernier to the 12" of our steel rule. But first we need one good square end on each of the wires. The way to do this is to get your wires and just stick a millimetre out over the edge of the bench. Then get your sanding block and abrasive paper and "file" the end as square as you can. Use your magnifying glass to check your work. Aluminium is soft so you will only need a few strokes. You will make burrs when you do this part of the operation so just gently clean them off with your block and paper. As long as you don't stick the ends out more than a mill you will not put any bend in your nice straight ally wires; but if you do, give them another quick roll.

Measuring

Get your 1m rule and tape it to the bench. Then get your ally wires and put them alongside the rule with the squared ends at the zero end of the ruler. Now put your sanding block at the end of the rule and press it up to the end so it is at zero. Tape the block in place. Then *gently* push the squared ends of the wires onto the block not causing or allowing the block

to move. You now have your squared off ends exactly at zero. Now, without allowing the wires to move tape them in position too.

What you have just done is to secure both the 1m rule and the wires to the bench with the ends of the wires exactly at zero.



OK, now set your vernier to 1.282" and place the edge of the left jaw at the very end of the 12" mark on the ruler and have the other jaw overlapping the wires. Do this in good light and use your magnifying glass to get the vernier placed as accurately as you can.



Marking the wires

Now get your marker and repeatedly mark inside the other (right hand) jaw being sure to get the mark right up to the jaw and onto both wires. This will require you to make several passes with your marker or cd pen and you will need to hold the vernier firmly in place with your other hand.

Cut to the mark

Untape everything and simply cut with your pliers to a couple of mill beyond where you marked and then file down to the mark using the same method as before to get a square end. Check with your magnifying glass as you do each stroke so you don't overdo it!

You have your wires cut to length!

Now comes the nebulas bit. You have to decide which end of each wire is positive and which negative. The way I did this was to put the wire between my two index fingers and suspended the wire horizontally in the air in front of me. I then waited to see if any feeling appeared in either wrist...It did. Whichever wrist felt something I took that to indicate positive.



Bind to make the “necklace”

Bind the positive of one wire to the negative end of the other with a bit of tape and then bend them to the shape of a necklace. You can put them round your neck or your ankle or wherever else you think is OK. If you wear them next to the skin you will want to cover them in something like tape or large diameter earth sleeve or something like that because aluminium rubs off on the skin. If you put the “necklace” over a sock you don’t have those problems.



See what happens...