

How to Grow a *Morning Glory*

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Figure 1 Morning Glory

This tangent began several years ago in Nova Scotia at CANIRON. Lorelei Sims demonstrated how to make a morning glory bud from tubing. I came home and tried it and it was neat. Then, I asked myself how to make a morning glory blossom. Fortunately, Bill Epps had posted a how-to on

http://www.anvilfire.com/iForge/tutor/flower/top_index.htm.

So with that I gave it a try.

There are a couple preliminary things to take care of. You will need to figure out tools for making stub into a pancake and a flat blossom into a trumpet.

Here's what I made.



Figure 2 Hardie tool



Figure 3
Dishing/trumpet tool

Bill Epps started with 3/4 inch round. Start with a comfortable length, one so you can work one end and not need to use tongs 12 to 18 inches. You need to create a shoulder on the bar about an inch from the end.



Figure 4 Shouldering on anvil



Figure 5 smithing magician



Figure 6 spring fuller

If you are a professional or talented smith you can use the anvil to create the shoulder, if you're like me you'll cheat. I prefer the spring fuller I get a nice even shoulder. How deep you make it depends on you and your comfort. What is important is that when you draw out the stem it stays in the center of what will become the stub which will become a pancake and grow into a blossom. And the stem will need to fit into the anvil tool for making the pancake. Actually before you get to this point you have a choice.



Figure 7 shoulder



Figure 8 Volume

As I said the choice of 3/4 in round stock was used by Bill Epps and it is a good choice. But when it comes to taking the stub to biscuit to pancake getting from stub to biscuit requires some attention or you stub will not upset evenly and you'll get it off center. If you start with a 1 inch round, it takes less length for the same volume of material to upset into a pancake and is easier to upset but drawing a 1/4 inch stem from 1 inch round will take time unless you use a power hammer for that. Even using a power hammer for drawing the 3/4 inch out saves me time.

You can think of a piece of round bar as a cylinder, and the pancake as a very short one and their volume is defined as:

$\pi \times R^2 \times h$ so given Epp's suggestions we have for the pancake with a 3 inch diameter with a thickness of 1/8th of an inch we have $3.14 \times 1.5^2 \times .125$ or .883 so if we need to decide how long a stub of 3/4 round do we need to create this pancake we can take :

$\pi \times 1.5^2 \times .125 = \pi \times .375^2 \times ?$ And we want to solve the ?, note .375 is the radius of a 3/4 inch circle. So the π s cancel and we have .281 multiplied by .141 or 1.99 inches = ? You can do the same thing to figure out what length of 1 inch or any other width stock you wish to use. So for 1 inch stock .281 is multiplied by .25 and the result is 1.12 inches of 1 inch stock is needed for a 3 inch pancake. The 1 inch is easier to upset into a pancake without bending it, but without a power hammer it will take longer to draw the stem out.

For me, I am using a stub of 3/4 round that is about an 1 1/4 inches tall. It gives me

a pancake about 2 ½ inches in diameter and a thickness that I found shapes into the trumpet well.

Once you have the stem drawn out, cut about an inch and a quarter from the middle of the neck to form the stub. Then as in everything you have choices. You can use a torch and heat from the bottom or heat the whole stub and quench the top section. Then put the “stem” into the hole in the tool I made for the hardie hole. I am most comfortable heating the top 1/4 inch of the stub as you would in upsetting.

With the top heated, I use an 11 lb sledge and hammer it down. Making sure I keep the stub straight. When it cools, I repeat the process, again and again. It takes me 6 to 8 heats with the sledge. Then a couple of heats with the forging hammer to make sure it is pancaked evenly.



Figure 9 Stub in tool



Figure 10 Avoid this leaner

Once you have your pancake, you need to lay it out. Mark the center. Then, if you're artistic you can draw a five pointed star on it. I'm not so I made a template larger than the pancake and marked it every 72 degrees and drew lines to center.

Then I center the pancake in the template and mark it. I use those lines as a guide for a cold cut chisel.



Figure 11 Pancake



Figure 12 template



Figure 13 line up

Once I have my pancake marked, I draw a line every 72 degrees. That gives me a way to line up my chisel. You don't want to cut through but you want the lines deep enough for a good effect. If you build your treadle hammer with your anvil hardie in mind, your tools are interchangeable.



Figure 14 Creating chisel lines



Figure 15 Chisel under treadle hammer

I should mention you can mark your lines cold the set them hot, your choice. After you have them you need a teardrop fuller.



Figure 16 Teardrop Tool



Figure 17 Tear drop

This step you do hot. You need to create a relatively wide mark, and it needs to be deep. Use the tool to make marks between all the chisel cuts, the wide portion of the teardrop to the outside of the pancake.

Once you have the pancake marked, you can dish the blossom into a trumpet shape. Initially, I use a ball peen hammer striking the hammer face. A word of caution here. You are striking a hardened surface with a hardened surface. Lots of potential for danger, make sure you have eye protection on. You can also use a soft face hammer to strike or normalize that face of the ball peen.



Figure 18 Initial dish using ball peen



Figure 19 Tool for deepening the blossom

After you have “set” the blossom, you may need a tool to deepen trumpet. Keep your piece hot while you do this or you may punch or tear the bottom especially if you have made the pancake thin. I have found that the thickness of the pancake does not matter as much as the pancake being close to a circle. If the radius of the circle is uneven the blossom will fold at the shortest part. The more even the circle the more organic the folds look. I still have not found the “ideal” dimensions.



Figure 20 Blossoms

Now back to the beginning, it all started in Nova Scotia with a demo by Lorelei Sims. She showed how to take a piece of tubing, groove it, twist and taper it into a morning glory bud. I used 3/4 inch square tubing and it was fun. But after I made my blossoms, based on about 2 1/2 inch diameter pancake a 2 1/2 inch bud was too large. So I tried 1/2 inch square.



Figure 21 Morning glory bud first try



Figure 22 grooving tube

To get the bud effect you need to fuller a crease on all four sides, then neck the tube where the bud ends. I made a small spring fuller to make the grooves. Then I used a flat chisel to deepen the grooves on the end. Remember, the length of the bud is half the diameter of the blossom. So you don't need much.

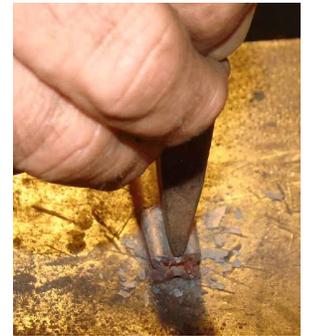


Figure 23 Chisel on the end



Figure 24 Tubing being twisted

After you create the grooves, heat the tube and crush the end in your vise. Then you can twist the tube, then fuller the tube and get an effect as illustrated in Figure 28. My first couple tries with 1/2 inch tubing were not as successful as I'd have liked. Then, I realized that by using my 1/2 inch roping tool and 1/2 inch square with a short taper on the end which I then then dressed with a chisel on the taper, before twisting, I got the same effect with less effort.



Figure 25 Bud from 1/2 inch square bare



Figure 26 Roping tool

This was followed by trying my roping tool with 1/2 inch tubing. It worked well, then I'd heat and hammer or squeeze the end in a vise then twist the bud. After twisting, I found I liked the look of the tubing better than the solid.



Figure 27 Roping tube



Figure 28 Front of bud made from tubing

Using the tubing allowed the end to look more like a closed bud than the solid square did. You still need to create a neck and hammer it down into whatever shape you want to create a means of attaching the bud to the vine.



Figure 29 Creating neck

The last part is the leaf. You can do as I did, find one, trace it to make a template and chisel or cut it from sheet.



Figure 30 Morning glory leaf

All that remains is to make enough of the pieces and create a vine. To me this is what I enjoy, an idea that grew from a bud to a blossom and maybe into a vine. My thanks to Bill Epps and Lorelei Sims, who planted the seeds and Dale Morse for reviewing my work, and Lanny and his “What if **WE** try this”.