

Learn to Dish by Building a Buckler

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Dishing is an essential skill for building armour. It's used to some extent in almost every piece of plate armour you'll ever build. Whether for knuckle gadlings on gauntlets, panels for a spangen helm, a breastplate or elbow and knee cops, dishing is used everywhere.

The main part of this project will be dishing the Boss on the buckler

Step 1: Tools and Supplys

For this project you will need:

- sheet metal

I recommend 16 gauge, that's 1/16" thick for you Americans, and 1.5mm for most everyone else.

- a jigsaw with metal and wood blades

- A dishing hammer

- dishing form(s)

- files or a grinder or something to de-burr your edges.

- 1/2"plywood

- a 14" steel drum lid and clamp (or other edging material)

- assorted clamps

not necessary but REALLY helpful

- a drill and 1/8 or 9/64 drill bit

- riveting supplies

<https://www.instructables.com/id/How-to-peen-a-rivet/> i dont remember how else to link this.

- safety equipment(glasses, gloves and hearing protection)

Step 2: Time to Get Started



OK, first things first, you'll need to decide how big you want your boss to be. In this case it's meant to fit my girlfriends hand with a glove on. So it fits pretty tight. If you'll be wearing gauntlets or something behind it then it will need to be bigger. also make sure to leave 3/4 to 1" of space for a flange around the outside. I allowed for a half inch and that made things much more difficult for me in the next few steps.

For this one i figured a large coffee tin was pretty much right, i couldn't find a sharpie, so i traced it with a nail. This was much harder to see than it looks in the photo and i don't recommend doing it that way.

Anyways, once you have it marked out cut it out with the jigsaw and use a grinder or a file or what have you to deburr the edges and put a bit of a bevel on them. if you have one, i really recommend a belt sander with a slack belt. It does work the best for this.

Step 3: Time to Dish



Now for the fun part.

For this step you'll need a dishing form, and a dishing hammer. If you don't have either then a large ball peen hammer and your back yard can be substituted, but you will have to work a bit harder and your final result will have a texture kind of like a sack full of marbles.

My dishing forms are made from melted down tire weights, and my dishing hammer is a 3# mini sledge that has the faces ground down into domes. More on that when i make my armouring tools Instructable

For the first pass I'm going to use my shallow dish and just give it a quick once over just to get it started. this isn't necessary, but I find that it makes things go easier.

For the second pass I switched to the deep dish, and the deep dome on my

hammer. This is also where you need to start paying attention to where your hammering. Always work in a spiral from the outside to the center and try to overlap each hammer stroke by half.

On this project i had a LOT of trouble with the flange rippling. Whenever you see a ripple starting to form make sure to hammer it down flat again. This problem can be helped a lot by leaving 3/4 of an inch to 1 inch of flange at the edges. My half inch flange just didn't have enough meat to support itself and ended up needing to be flattened out every 5 minutes.

Now just keep doing passes from the outside to the center and hammering out ripples until your boss is as deep as you like. Mine took 4 passes until I was happy, but half way through the third pass I gave up on the flange and decided that I would flare it out after the fact. this was another bad idea and made a lot more work for me in the end. Oh well. Live and learn

a few tips for dishing

- experiment to find the sweet spot on your dishing forms. there is usually an area a little in from the edge where you get the most force into your workpiece with the least bounce back.

- always try and keep 3 points on your workpiece in contact with the dish. you'll know when you don't because all the vibration will get channeled right up your thumb. it really stings.

- if you just cant keep 3 points touching then use a pair of vice grips to hold the piece. make sure you pad the jaws with leather or something similar to avoid gouging up your project.

- wear a glove on the hand thats holding the piece, you'll really appreciate it when you accidentally pinch your finger, plus it cuts back on the shock your hand has to absorb, and lets you work longer.

Step 4: Bouging



Though it didn't really show in the pics, after dishing the boss it was fairly lumpy. Now i could leave it like that, but it doesn't really look finished, so I decided to bouge out the dents.

Bouging is a lot like dishing, were still working from the outside to the center, with overlapping hammer blows, but instead of using a dish, I'd ideally use a flat smooth piece of steel, like the top of an anvil, I beam, or just a hunk of flat plate steel. However, I didn't have access to any of that, so the next best thing was my shallow dish.

So, switching back to the shallow dome on my hammer just do a few passes, hitting it just hard enough to flatten out the lumps, but not to re shape the boss. It's better to use a lot of light hits instead of a few hard ones.

If you want a smoother finish still you can planish it after you bouge, it's a similar operation, but done from the outside with a polished, flat faced hammer. In this case, the boss would be backed with a ball stake. personally, I seldom planish anything because I like the hammered finish left by bouging alone.

Now, if you keep your flange in place then your ready to start on the rest of the buckler. if, like me, you didn't, then read the next step.

Step 5: Flaring Out the Flange



SO, since i decided not to keep my flange in place while i dished the boss, i have to flare it back into place. this turned out to be more of a pain than i thought it would be.

to begin with, I recommend using either a machinists, or a cross peen hammer. the reason for this is that the shape of the peen causes the metal to stretch only out to the sides instead of pushing it all around the face of the hammer. make sure that the peen end of your hammer has the edges ground off, leaving a nice rounded surface, otherwise you'll leave gouges behind that can easily turn into stress fractures as you stretch and work harden the steel.

Now, Start by re-marking where you want to flare. I chose to mark the outside, but some people find it easier to mark the inside. Whatever works best for you is the right way.

Ideally I'd use the edge of an anvil, or something similar for this, but once again,