

This article was published in AAW's Woodturning FUNdamentals Sept 2015 edition.

This article will cover how I use wooden jaws on my chucks to hold my bowls while I finish turning the bottom of the bowl.

Oneway has two sets of large plate jaws, the jumbo jaws and the mega jumbo jaws. Nova has the Cole Jaws. I suspect the other manufacturers have similar items. When you get the large jaws from the manufacturer they come with eight rubber bumpers that can be put in different diameters on the plates. Take those off and throw them away. I have found that the rubber will leave dark spots in open pore light colored woods. Secondly, the rubber bumpers only hold the piece at 8 points around the rim and the rubber bumpers have some give. The big advantage of the wood jaws is that they hold the piece at 360 degrees with no give. Finally, the wood jaws are quicker because you don't have to move the eight bumpers with different sized bowls.

What kind of wood to use for the jaws? I generally use red alder because it is the softest of the hard woods. I want the jaws on the chuck to be softer than the bowl I am working on.

I do not use one large round piece of wood and cut it into pie shapes. This would give you end grain in two spots on the chuck. I take a 2 x 6 and cut pie-shaped pieces on the table saw using 45 degree cuts. (see drawing one) Next, use two sided tape and screws to attach the wood to the metal jaws. (see photo 015). Next, I mount the jaws onto the chuck. The wood grain is now tangent/parallel to the outside of the jaws with no end grain.

At this time your wood jaws will be in a square shape (see drawing two). I put the chuck on the lathe and **rotate it by hand** using a pencil to mark the biggest diameter on the back of the wood jaws. Next, I band saw off the corners (**safety note**, make sure the solid wood face is down so you have a supported cut on the band saw). I remount the chuck and turn the outside true round and round the two outside corners. Next, open the jaws to half open. Put scraps of wood between the jaws and tighten the chuck so the scrap pieces are firmly held. (see drawing three) Now turn your desired steps into the wood jaws. If you turn the steps into the wood jaws with the jaws completely closed, without the scrap wood pieces, when you open the jaws all the way open the steps will be way out of round.

Each time you put the chuck on the lathe the steps may not run quite true. You can easily true up the wood step you need for the bowl you are finishing.

I have two main chucks set up, one for open formed bowls and one for closed form bowls. (see photo 8). On my Nova chuck I have wood faces that I shape if I need a special form to hold an unusual piece. These wood jaws last a long time as only a minor cut is needed to true up a step to hold a bowl.

Of course a woodturner always needs more chucks, these jaws make a good excuse to buy another chuck!

A note on safety. The diameter of the jumbo jaws and mega jumbo jaws are bigger than your bowl. You have to turn the speed down. My Cole jaws have: 500 rpm max stamped on them. For another article on using MDF for the jaws see George Hatfield's article in the American Woodturner (about 6 years ago).

Dale Larson

May 20, 2015

Photograph descriptions

002 and 005 show a bowl on the expanding jaws. Note how these jaws give the turner complete access to the bottom of the bowl. My tool rest is rounded and I can use it to rub against the bottom of the bowl keeping it from coming off. The safest route would be to bring the tail stock up and put the live center against the bottom of the bowl. Most of the wood could be removed before the tailstock was backed off to finish the very center. This bowl lathe shown here doesn't have a tailstock so I use the tool rest.

008 – This photo shows the two different sets of jaws I use. On the left is the expanding chuck to hold closed formed bowls from the inside of the rim. On the right is the contracting chuck to hold open form bowls from the outside of the rim. These are both on Oneway Mega-Jumbo jaws and the diameter closed is 15”.

012 – These are two more of chucks for smaller bowls. The smaller one has a diameter of 8 3/8”. The medium one has a diameter of 11 3/4” and is on the Oneway Jumbo jaws.

015 shows the back of the jaws with screws and double side tape holding the wood on the jaws.