

Jam Chucks and Other Holding Devices

Inland Wood Turners Demonstration by Richard Spencer

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This handout is designed to accompany the demo and give you specifics on the tools and jam chucks shown in the demo.

Shop made holding devices can enable you to turn complicated pieces that otherwise would be impossible using standard, off the shelf, chucks. This demo is intended show some of the jam chucks and other holding devices I have used over the years to either hold a difficult piece while turning or to hold a piece that must be reworked after I have cut off a tenon.

First, jam chucks and holding devices can be mounted either on the head stock or the tail stock. So we will cover them separately.

Tail stock jam chucks and holding devices.



Most jam chucks on the tail stock are attached to a live center with 3/4" X 10tpi like the one shown here. They are not cheap but their versatility makes them well worth the price. I don't remember where I got this one or what I paid for it and I can't find it online.

There are several on amazon for around \$120.00. One from SAVANNAH Heavy Duty Dual Bearing Live Center 7559

One from Robust Woodturning Live Center, #2 MT

Penn State has on for less. Live Tailstock Chuck Adapter: 1 in. x 8tpi - #2MT Shaft Item #: LTCA18 -- \$34.95. This one is designed to hold a regular chuck with 1" X 8tpi but it can be used for shop made jam chucks by changing the tap to 1" X 8tpi from the 3/4" X 10tpi that I have been talking about.

Note: I have never used any of these listed and I am not endorsing any of them.



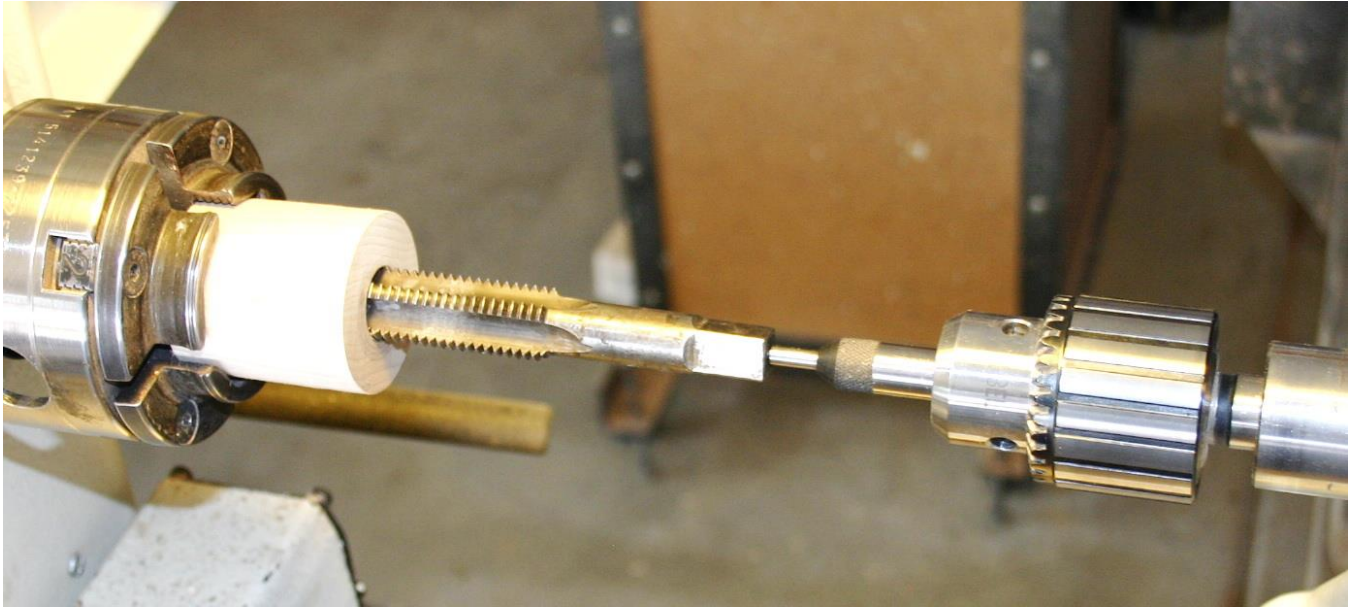
The first step in making a tail stock jam chuck is to determine what it will accomplish and what size it needs to be.

Once you have a blank mounted to a chuck and the end flat, you drill and tap the end to match your live center. In my case that would be a 21/32" drill and a 3/4" X 10tpi tap.

Once the hole is drilled to the proper depth you can tap the hole on the lathe using a tap guide.



The tap guide is placed in the same drill chuck you just used to drill the hole. It has a spring loaded center point that goes in the hole in the end of the tap. The setup looks like this.



The tap is in the hole, you bring up the tail stock to center the rear of the tap and turn the tap with an adjustable wrench.

There are several tap guides on Amazon. This is one of them:
[Brown & Sharpe 599-792-30 Adjustable Spring Tensioned Tap Guide](#)
\$14.70

Once you have a hole tapped in the blank you need to attach it to the head stock. I do this with a spindle adapted which is 1 1/4" X 8tpi on the female side and 3/4" X 10tpi on the male side. It looks like this:



This is not a standard size so I had one made by:
Best Wood Tools for about \$65.00. Their website is:
bestwoodtools.com

With the blank attached to the spindle adapter you just turn whatever size and shape jam chuck you need. When it is finished you remove it from the spindle adapter and you are ready to mount it to the live center threads in the tail stock.

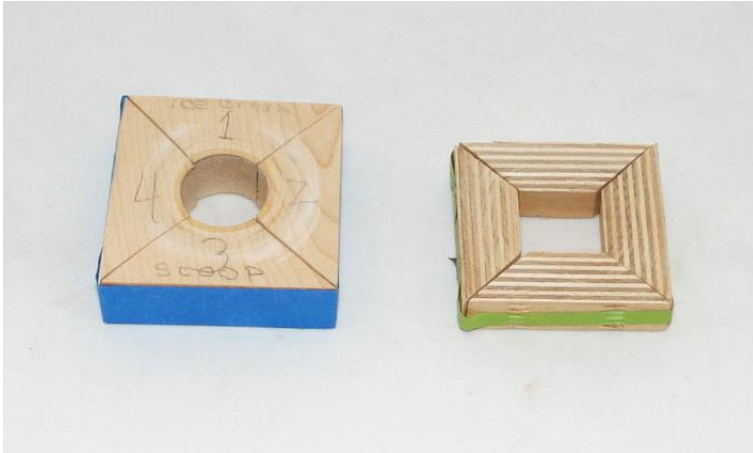
Remember, if you have a 1" X 8tpi spindle you can use the live center in that size and make jam chucks cheaper than I could.

They don't make that live center in a 1 1/4" X 8tpi model.

Head Stock Jam Chucks and Holding Devices

There are times when your work piece will not fit in any of the chucks you own and you will have to construct a shop made fixture to hold that piece. These fixtures range from the very simple to the very complicated.

When turning small finales you can easily fabricate a device like these one to hold your work.



You can build them to hold round or square stock. They fit in the jaws of a regular chuck and hold the work very well. I make the outside 2 1/2" square and the inside to fit the work piece. The round one I make from 2 1/2" square stock 3/4" thick I put it in a chuck on the lathe and drill a hole the size that I need. Then I go to my table saw and cut it corner to corner then put the tape around it to keep the pieces together. The square one is 3/4" Baltic Birch plywood. I miter the inside a little bit

smaller than my stock and put the tape to hold the pieces together.

I turn a lot of spheres and it is not easy to clean up the last place you parted off the sphere. I built several collet chucks to hold various sizes of spheres for the final shaping and sanding.



This is built very much like the tail stock jam chucks except that you drill and tap the end to match you head stock spindle. The collet end is sized to fit a specific diameter and then "split" with a table saw and uses a hose clamp for tension.

Below is a drawing of how I build collet chucks.

1 1/4" Collet Chuck

