

Getting Started with Metal Spinning

There are not a lot of commercial resources for the equipment. Good news is that most of the equipment can be made at home.

To get started you need to make, or look to purchase e.g., Ebay, a few tools, a special tool rest, lubrication and some discs of various metals.

I like to use drill rod for the shafts of turning tools. This is a tool steel, but not yet hardened. Available in different quenches, Water, Oil and Air (least to most expensive). I like to use the oil "O1" rod. Many places sell drill rod, Grainger, McMaster Carr, etc. I like to use ENCO.

Drill rod at ENCO

The discs are formed or "spun" over a wooden mandrel. Any turner should be able to make the mandrel and follower block. Recommended wood is hard maple.

This is an example of a mandrel. There should be a taper getting bigger toward the headstock so the spun metal can be removed.

This is drilled and tapped to allow screwing directly onto the spindle.



Note if the wood has a grain pattern, defects or cracks, these will be transferred to the metal.

The disc is initially held against the mandrel with the tailstock. A block of wood called a follower block is used to apply pressure against the disc.

The follower block should be the same diameter as the end of the mandrel and slightly concave so it applies pressure on the outer rim.

This can be seen in the reflection of the end of the follower block in this picture.



Oneway Lathe sells a metal spinning tool rest.

[Oneway Lathe Metal Spinning](#)

One of the few sites with a metal spinning started package, is Terry Tyans site in the UK. This package used to be sold by Penn State Industries, but they no longer show this as available.

Terrys site is a good place for instructional DVDs.

[Terry Tynan Metal Spinning Workshop site](#)

An old article, but lots of good information to begin the learning curve. Page 3 has a comprehensive list of the metal alloys which can be spun. In general, metals with higher % elongation have the best ability to be stretched or formed and so work best for spinning, especially for beginners.

[Metal Spinning Tutorial](#)

When looking to purchase aluminum, you need to know the alloy and the hardness or tempering.

Recommended aluminum alloys are 1100-0 and 3003-0. The "0" designation

means soft. Avoid alloys such as 1100-H14 and 3003-H14. The "H" designation means these are hardened and so will not stretch easily.

Soft metals require tools of hard metal. Hard metals require tools of soft metals. This is to prevent gauling between the spun metal and the tool.

So most non-ferrous (aluminum, copper, pewter) require steel for the tool. Ferrous metals (steel, stainless steel) require brass for the tool.

For the beginner, non-ferrous metals are recommended.

Pewter should be lead free. Modern pewter made in the US is lead free. Ensure lead free when purchasing.

Oster Pewter is a good source for pewter, but they may not cater to hobby/craftsman who only need small volume.

Oster Pewter

Lubrication between the tool and the metal is required to minimize friction, reduce the forces and prevent gauling. Grease is not recommended since it will fly all over the place.

Some commercial lubrications are available such as the Terry Tynan site.

Many different home-brew lubrications. Some use soap. Some use the wax from a toilet seat gasket. This used to be beeswax, but likely now a synthetic wax. Apparently this wax is somewhat sticky, so holds to the metal disc well.

Some folks use 50% toilet seat wax with 50% chainsaw oil.

Some folks use 1/3 toilet seat wax, 1/3 beeswax, 1/3 paraffin wax.

For the mixes, melt in a double boiler and then pour into a bar or cylinder shape.

Some folks use the bar/cylinder directly on the metal disc.

Others, like the demonstrator, Ted Sokolowski use a "dolly" which is a piece of denim rolled to a cylinder about 6in long. The end of the dolly is wiped over the lubricant and then the dolly is pushed onto the metal disc.

See the March 2015 meeting Demonstration Gallery for the pictures taken at the demonstration.

Ted was standing on a platform. This is due to the tools being used mostly below the center line of the work. In the pictures you can see Ted holding the tools typically under the arms. Not able to be shown is Ted bending at the knees to start spinning at the center, and raising the body as he pushes the metal to the bottom of the mandrel.

March 2015 LVW demonstration by Ted Sokolowski