

Thompson Lathe Tools

by John Lucas

Like many of you, I am a tool addict. I love tools and it doesn't matter if they are old or new. I like handling them, sharpening them, seeing how they cut, testing how they hold an edge, etc.

I remember lusting after the state-of-the-art turning tools. You know the ones—powdered metal and cryogenically hardened, weighted handles and all the other exotic stuff. The problem was, they were just simply too expensive for my budget. Well, times have changed. Doug Thompson has developed a line of tools called Thompson Lathe Tools (www.thompsonlathetools.com). They are made from particle metal which is the only way to create the steel for these tools. And not only are they state of the art in metal technology, they are affordable too.

A BRIEF HISTORY

Let me back up slightly. Powdered metal (or particle metal) is a technology that emerged quite a while ago, and because of improvements, has really taken over the tooling industry. Similar to making different steel alloys, producers can change the characteristics of the metal by adding other materials. However, you can add particle material in greater quantities to vastly improve the characteristics of this metal.

The powder mixture is pressed into shape with a 300-ton press and is then heated through a sintering process until it becomes solid metal. The addition of vanadium to the metal makes it tougher. In older steel making processes, the harder you made the steel, the more brittle the edge became. Carbide, for example, holds an edge and cuts through hard material, but is very easy to chip and hard to sharpen. High Speed Steel (HSS) is easier to sharpen, but the edge won't last as long. Using the powdered metal process, manufacturers can create a metal that will be hard enough to hold an edge for a long time but is still easy to sharpen.

With older processes, producers were limited to about 5% vanadium. In the powdered metal process, they can go much higher. Doug chose A-11 steel which has 9.75% vanadium. This has proven to be a material that will really hold an edge. To improve on that characteristic, he also has the tools cryogenically treated. For those unfamiliar with this process, they freeze the metal at 300° below zero. This changes the internal structure of the metal to make it even tougher. It has been proven over the years in such applications as axles for race cars and gears in the transmissions.

QUALITY AND DESIGN

By combining the powdered metal technology with the cryogenic process, Doug is able to make a tool with

superior edge-holding capabilities. His tools are heat treated three times and undergo cryogenic treating between the first and third heating.

Quality control is something that always comes up when people are talking about new tools. These tools are handcrafted; Doug Thompson personally shapes, sharpens, and inspects every single tool himself. That eliminates any quality control problems. His tools also come sharpened and ready to go, although each turner may wish to change the grind or hone the tool based on their personal style.

Thompson Lathe Tools come in a wide variety of designs. Doug offers both a "V-shaped" flute and a "U-shaped" flute on his bowl gouges, and they also come in several different sizes. His spindle gouges come in three varieties of flute shapes as well. All tools are 10" long with a 6" flute, except the 5/8" or 3/4" bowl gouges, which are 12" long with a 7" flute.

My personal favorite is the detail gouge, because it has so much metal underneath the cutting edge. There is a noticeable reduction in vibration between this tool and some other brands I own. This translates into cleaner cuts, especially when you need to hang the tool way over the tool rest (see **Fig. 1**).

Doug is a very good turner and makes turned wooden hats. I watched him turn one, and he obviously understands how a tool cuts and why it does what it does. It takes a skilled turner to take a 16" diameter, 60 lb. piece of wood and turn it into a hat that weighs ounces and is thin enough to transmit light. This skill as a turner is translated into the tool designs he sells.

Doug's original goal was to produce the best tool he could, at an affordable price. To do this, all of the Thompson Lathe Tools come unhandled. I think you will find that these tools are priced to compete with the standard HSS tools. Selling them unhandled allows the user to

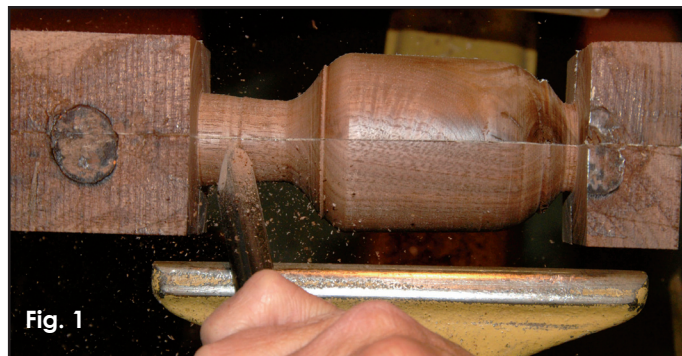


Fig. 1

The Thompson detail gouge can hang over the tool rest farther than other tools, with little vibration.

purchase or make whatever handle he or she wishes, and keeps the price down. I prefer longer handles than those that come with most tools, so making my own has always been the way I go. This personalizes the tool and makes it a joy to use. Personally, I think making the tool handle is half the fun of getting a new tool (see **Fig. 2**). If you've never made a tool handle, Doug's website has a link to a very good tutorial on making a tool handle.

Thompson Lathe Tools just introduced a skew, flat scrapers, and a rough out gouge. The rough out gouge has a 3/4" shank to make it stronger.



Fig. 2

Half the fun of buying a new tool is making the handle. These are some handles that I have made for my tools.

EDGE-HOLDING ABILITY

When I first got the tools, I was interested in their edge-holding ability. I had heard that it was exceptional from other turners who had used these tools, but I was interested in trying them out myself.

I have used a lot of carbide tools over the years, and I was concerned about just how sharp I could really get the edge on this new steel. I thought the skew was a perfect test subject, because it really needs to be sharp to work properly. I ground the skew on my grinder with a 100-grit wheel and then sharpened it with diamond hones ranging from medium to ultra-fine (which is 9 micron) grits. Then I polished it with a green compound on a leather strop. As you can see in **Fig. 3**, it will shave hair. That is just as sharp as my HSS tools.

AN UNSCIENTIFIC TEST

To further test it, I did planing cuts on some really nasty pine with some really hard knots which has a tendency to tear out. I used both my HSS skew and the Thompson skew repeatedly on this spindle. Both cut just as clean, but after multiple passes, the HSS skew started having problems with the knots. On the other hand, the Thompson skew just kept on shaving them down.

I can't really say how much longer they hold an edge



Fig. 3

I easily sharpened the Thompson skew so it was razor sharp.

than regular tools, because that's such a subjective thing. At what point does a tool really get dull? So, subjectively, I can say that the edge holds quite a bit longer on Thompson's tools.

I ran another test one day where I just kept turning without sharpening. These tools just keep on cutting. Granted, after turning for a while, the tool does not cut as clean as a freshly sharpened one, but it apparently reaches a certain point and just keeps on cutting.

My HSS tools just slowly get harder and harder to push through the wood until you must stop and re-sharpen; the Thompson tools take a much longer period of time before this becomes necessary. When I first got the tools, I switched frequently from my old tools to these. Now that I've gotten comfortable with the Thompson tools, I find that I reach for them most of the time. I've had these tools for about six months now and really like them. So much so that it almost makes me want to sell my other tools—I said almost; remember, I'm still a tool junky.

CUSTOM WORK

Doug can produce custom tools if necessary. For example, he created a long, heavy tool for a stone carver and is currently working on a tool for a violin maker. Feel free to contact him if you'd like something special; he's very personable.

RECOMMENDATION

I think these tools are definitely worth fitting into your arsenal. I like the shapes and sizes of his tools, but the price definitely makes them a good buy and one that I couldn't pass up.

John Lucas



John Lucas' day job is as a photographer for Tennessee Technological University. He notes that he has been playing at turning since he bought his Shopsmith around 1982. Since then he's upgraded all the tools in his shop and fallen deeply into the woodturning vortex.

John is basically a self-taught turner and learned mostly on his own until around 1990 when he was lucky enough to meet John Jordan, Rudy Osolnik, Betty Scarpino, Paul Ferrell, and many other turners at the Tennessee Woodturning Symposium. He joined the TAW and the AAW that day and remarked that the rest has been a wonderful experience of meeting other woodturners and sharing techniques.

John currently teaches classes and turning club demos as well as writes articles for various woodworking magazines. He feels that he has learned so much from other turners that he should pass this information on to help speed up the learning curve for other turners. John is very active on a number of woodturning forums.

John welcomes your questions and comments and can be reached either by sending a SASE to him at PO Box 1292, Cookeville, TN 38503 or via e-mail at jlucas@ntech.edu.