

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

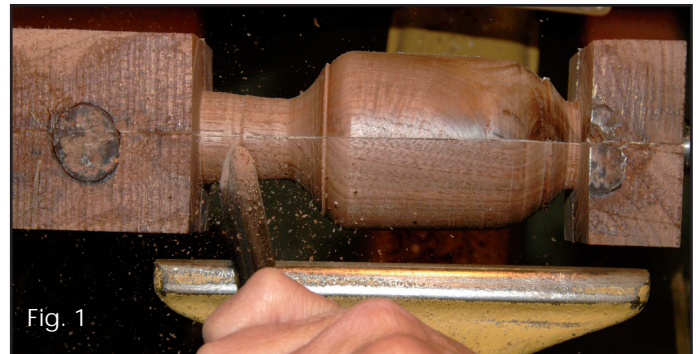


Fig. 1

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

