



The Cutting Edge Explored

Our February meeting was an in depth look at sharpening led by Greg Collett with slides and practical applications.

Many woodturners, especially those just starting out, find sharpening their tools one of the most daunting aspects of turning. We all know blunt tools make work very difficult but incorrectly sharpened tools can also take the pleasure out of turning and in some cases can even be dangerous.

Greg began the session by looking in depth at the science behind sharp tools, what we mean by sharp and the efficiency of sharpening. To be completely sharp the two surfaces of the metal must meet with a radius of zero width. This is achieved by correct grinding and honing. Greg explained the variables that can affect this such as the composition of the metal and its various properties including hardness as measured on the Rockwell C scale. He also explained that there is a trade off between hardness and toughness since the harder the metal, the more brittle it becomes. So we learnt that we need reasonable hardness to maintain a good edge but not so much that the edge fractures easily. Greg showed slides illustrating all these points.

Much of this information can be found in books on sharpening and Greg recommended *A Complete Guide to Sharpening* by Leonard Lee.

Greg then discussed what needs to be done to sharpen tools effectively covering two rules. The first, to use the shallowest possible bevel consistent with edge retention and the second, only to remove the minimum material enough to restore the edge. This led on to a more comprehensive look at individual tools, the bevel angles and profiles needed for the specific purpose and why. Finally Greg gave us an overview of the three systems generally used for sharpening, sanders, wetstones and high speed grinders.

Most of us have probably never given much thought to all of this but it was very interesting and gave us an insight into why sharpening techniques make such a difference to the performance of our tools. A break for the raffle and coffee followed.

Greg continued the meeting with a description of the Robert Sorby belt sander sharpening system which he uses. He explained how it works, the adjustments and the available jigs and went on to demonstrate the sharpening of each tool using the jigs. Greg showed how a high speed steel tool generates few sparks whilst a carbon steel tool creates a lot of sparks. When the tools are sharp the sparks fly off the top rather than underneath. This is also the case when using a high speed bench grinder but the belt sander does not generate as much heat as a bench grinder.

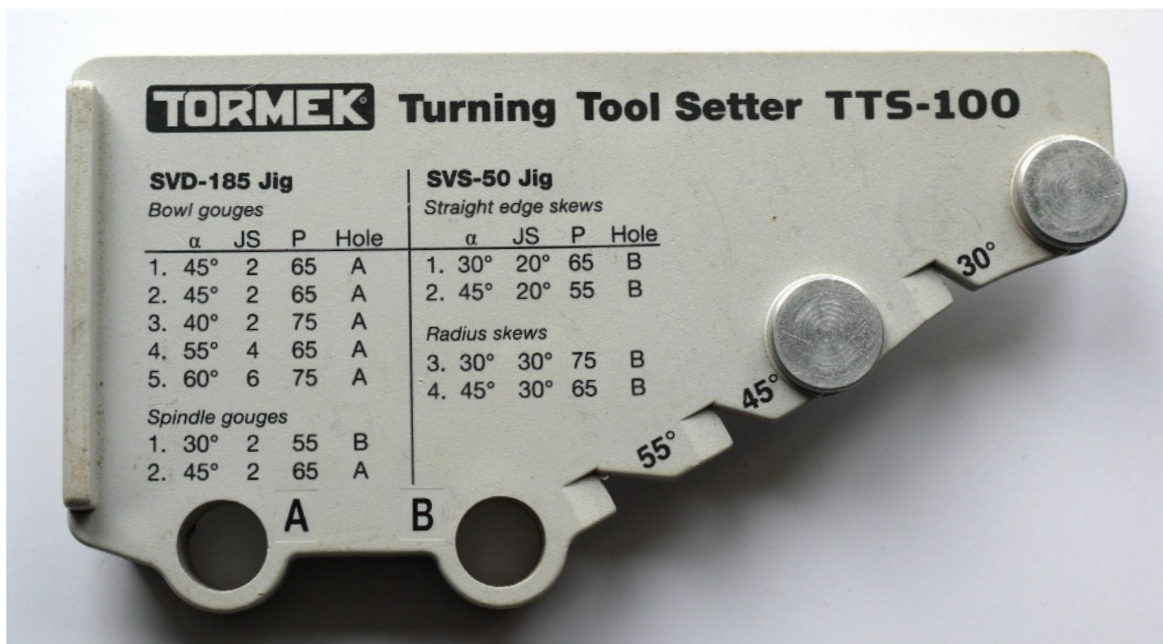
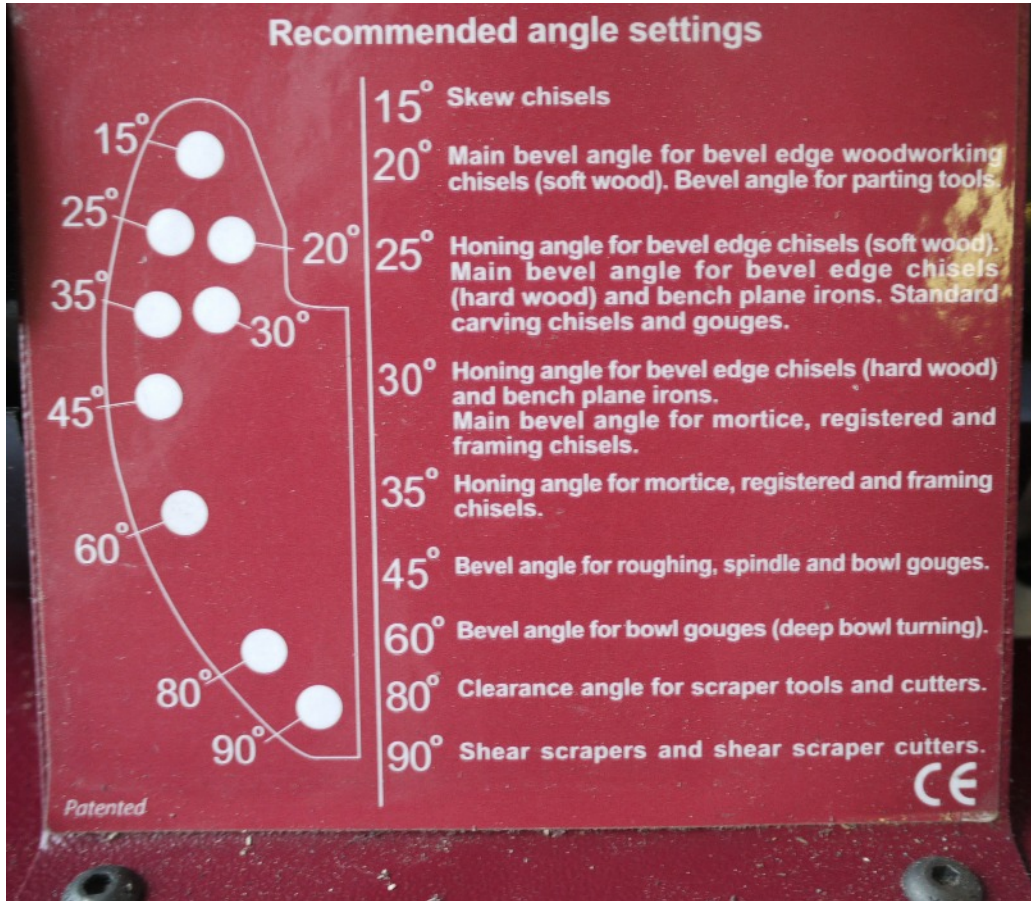
The machine has a quick change belt system with a variety of different grits available. It also has a guide for setting the jigs to the correct angles for each tool.

This is a top of the range dedicated system but it is quite possible to use any belt sander with some home made jigs.



Left to right, Greg Collett, Mike Pollard and Ken Allison discussing the tool edge

As requested by some members, below is a picture of the Robert Sorby guide to the recommended angles for tool bevels. Below that is the guide from the Tormek machine. Both guides replicate the angles when set up with the relevant machine jigs. You will notice that the Tormek guide also has several other options. This is to achieve different profiles as well as bevel angles.



After lunch I showed members my Tormek wetstone sharpener. It is the smaller of the two models available and I had it a long time before I took up woodturning. I find it a versatile machine and use it to sharpen a wide range of tools including my garden edge tools, dressmaking scissors and kitchen knives and all woodworking edge tools. Like the Sorby system it has a tool setter so that the exact bevel angle and profile can be easily replicated. This tool setter has the advantage of working with any size of wheel. It also includes a leather honing wheel with a profiled honing wheel as an optional extra. I showed members how I replicate the angle of bevel by marking it with a felt pen and positioning up to the wheel so the full depth of the felt mark is removed. With practice this takes no time at all. The advantage of the wetstone grinder is that very little material is removed to get the edge sharp and there is no chance of overheating. However, the disadvantage is that it is very slow to remove a lot of metal and in doing so would wear the expensive stone away considerably. This is why it is sensible to use a high speed bench grinder for reshaping tools prior to maintaining them on the Tormek. I showed members my bench grinder which had a Tormek supporting arm set up to enable me to use the same Tormek jigs as with the wetstone.

There are of course other options for the bench grinder. Tormek now produce a kit for use with any bench grinder but it can be made as I did with the base and arm bought as spares and set up on a wooden platform. This is much more economical.

Robert Sorby sell a jig system similar to that on their belt sander for use with a bench grinder and there are other manufacturers producing jigs for this purpose.

The other consideration when using a bench grinder is the choice of wheel with many options available to reduce heat and wear. Whatever the composition of the stone and wet or dry it is important to maintain it regularly by dressing as necessary.

For the rest of the afternoon members were able to take the opportunity to try the different systems and improve their sharpening skills.

Many thanks to those who helped and particularly Greg for organising it all.

Members' Work

The monthly competition attracted a good number of entries with several pieces showing lovely grain and colour.



Left. Small oak platter by Ken Allison.



Above, pot by Marion Brunt



Below, fishing duck by Anne Smith



Above, bowl by Bob Hollands



Above, bowl in Japanese chestnut by Chips Bishop
Below, box by Mike Pollard.



Reminder for March Meeting

Spindle turning team event
Please bring your tools

Chairman	Maggie Wright
Vice Chairman and Competition Secretary	Peter Castle
Secretary	Anne Smith
Treasurer	John Turner
Events organiser	Greg Collett
Librarian	David Spice
Newsletter editor	Sandra Day
A-V co-ordinator	Brian Rowson

www.wealdenwoodturners.org.uk

Platter with
Pyrography by
Sandra Day



Next Month's Meeting

April 9th 10.00am

NB Not 3rd Sunday

Bowl turning with emphasis on the gouge
Bring your tools