

Alan Leland's Thoughts on Sharpening

The following tips and thoughts concerning sharpening are methods that I have learned from a variety of turners and sources mainly Allan and Stuart Batty as they seem to explain turning techniques and skills in a way that makes sense and is easy to understand. I have also experimented on my own with a variety of the jigs that are on the market today, in order to copy some of the recommended shapes for gouges and other turning tools. I have taken many workshops and sponsor many internationally known turners for workshops in my studio and have found that there is not one bevel angle or grind that is universally used. There are a lot of similarities but many turners modify the basic grinds to the type of wood they are turning or more specifically to the type of turning that they do most. I guess what I am trying to say here is that there is not one method or shape for grinding tools that works or is used universally in woodturning or by woodturners. This is especially true when it comes to sharpening scrapers as they are sometimes modified for a specific task or cut. The one common thread is that there are some guidelines and reasoning that can be used to help one to understand why tools may be sharpened the way they are for certain tasks and which ways may be more appropriate for the type of turning you are doing. My goal here is to shed light on the why tools may be sharpened differently and the how the various grinds function so that you can choose the methods or the grinds that are most compatible with the type of turning that you do. I hope to pass on an understanding of the tools and how they work so that your sharpening decisions will be made on an informed basis. From my point of view the best bargain and perhaps one of the best books on woodturning today is the pamphlet by Allan Batty Titled "*Woodturning Notes*". In it Allan explains in very simple terms the how and why tools should be sharpened a certain way and methods for using the tools properly. Bear in mind that Allan is a second generation turner brought up in the English apprenticeship system and that as a production turner time and speed were of utmost importance. Some of his methods reflect this need for speed and efficiency.

Below is a list, well, more of a discussion of what I feel are some of the more important points to consider when sharpening. Remember to always be aware of safety and to wear eye protection preferably goggles but at the very least safety glasses with the side shields attached and functioning. No loose clothing, long dangly hair, jewelry or anything else that could possibly get caught up in the spinning grind stones. Always be alert to the fact that there are usually two spinning grinding wheels and avoid making contact with the one that is not being used.

Frequent sharpening is the key to enjoyable, successful woodturning. Turners need to use the grinder frequently to renew the cutting edge of their tools. The following tips will aid you in this not so mysterious process of obtaining a sharp cutting edge. The height of the grinder is very important for achieving good results. As with the lathe, the center of grinding wheel should be at a height even with the turners elbow. With the grinder at elbow height, it allows for the maximum range of movement for the hands and arms of the turner during the sharpening process. A slow speed grinder (1720 rpm's) with an eight inch diameter aluminum oxide wheel is highly recommended. A good combination of grinding wheels would be a 40 or 60 grit wheel on one side and an 80 or 100 grit wheel on the other side. If the more

expensive powdered metal 2030 & 2060 or A-11 tools are used, upgrading to a SG Aluminum Oxide wheel would be a good idea.

Before grinding, check to be sure all the safety features of the grinder are properly installed and functioning. Also be sure that the grinding wheel is still sound (with the wheel off the grinder) by putting a rod through the wheel arbor hole and tapping the side of the wheel. A distinctive clear ring is a sign that the wheel is sound; a dull thud means that the wheel is fractured and should be replaced. It is far better to spend money replacing a wheel, than to risk injury if the wheel shatters. Dress the wheel to true it up and to expose a fresh cutting surface, before and during each sharpening session. An inexpensive T-shaped diamond dresser is recommended for dressing the wheel.

Always wear eye protection when grinding. When sharpening a tool, apply just enough pressure to keep the tool on the wheel. Excessive force will hasten clogging of the wheel and create friction that can overheat the tool steel. Many professionals feel that excessive honing or using a progression of sharpening stones on turning tools is time wasted. A proper bevel straight off the grinder is usually good enough, since the sharpened edge will dull quickly when turning.

I have discovered that there is no one bevel angle or tool shape. The tool edge that a turner grinds should relate to the style and type of turning being done and the hardness of the wood being turned. Experiment with the various recommended bevel angles and various grinds (e.g., side grinds, fingernail grinds) to find what works best for your specific project. The key is to achieve a continuous facet. The question of leaving the burr on or honing it off is often raised in any discussion on turning. The best answer I have come across is to hone the burr off when turning very hard and dense exotic woods such as cocobolo or ebony, because the burr tends to grab and tear the grain of exotic woods and leave the burr on for our domestic hard and soft woods. Alan Lacer recommends honing the grinder burr off and replacing it with a fresh burr after honing the top of the scraper, as the burr straight off the grinder is very rough and similar to a weld, as the burr has been melted in place.

The following grinding angles are the most popular; however, you may want to experiment and adjust the angles to find the one that is most appropriate for a particular project. I have listed the bevel angles by tool type and have included the most common range for the bevel angles on the tools listed.

Popular Grinding Bevel Angles

(Bevel angles are listed in degrees)

My preferred bevel angles are listed in blue

Bowl Gouge (55) 40 to 65 plus

Parting Tool (25) 25

Spindle Roughing Gouge (40) 40 to 45

Spindle Gouge (35) 25 to 45

Scrapers (75) 70 to 80

Skew Chisel (30) 25 to 55

(Skew Bevel Length 1 ½ to 2 x the thickness of the steel)

Sharpen your tools frequently. Dull tools are often the cause of many of our turning problems. A variety of sharpening jigs and aids are available through woodturning suppliers and catalogs. One jig that I recommend is the Wolverine system by Oneway Manufacturing. The jigs make it easy to maintain a constant bevel angle with a continuous facet, thus leaving more time for turning now and for turning in the future.