

ASK THE EXPERT

Help! I've got a question for the expert.

Q What is optimum angle for using a scraper?

I am at the initial stages of my bowl turning experience and would like to know the optimum (if there is one) scraper angle for turning hardwoods, primarily Oak and Cherry. Any suggestions would be welcome.

~ Dick Quince, New Jersey

A Using a scraper with a burr



A scraper should be used with a burr raised on the cutting or scraping edge. If the angle between the top surface and the grind or what we will call the bevel is 90 degrees or greater, it won't raise a burr when grinding. Early on I ground all of my scrapers just a little less than 90 degrees.

Seemed to work for me but back then I did a lot of scraping, not much bevel rubbing cutting and I assumed you had to sand a lot because there was a lot of wood tearout. Over the years I started to look at scraping with a little more detail. People like Richard Raffan used scrapers to get very clean surfaces. What I found was raising the correct burr was more critical than the grind on the front of the scraper. I now use something like 70 degrees but anything from about 85 degrees to 45 degrees will work. I'm not 100% on this but it seems like the more acute the angle the weaker the burr. The burr on more acute angles seems to cut very clean but only lasts a few seconds. The more blunt angle produces a burr that is stronger, in my experience.



Raising the burr is more critical than the angle of the grind on the end. Use a light touch. Pushing hard raises a bigger burr but it doesn't cut as cleanly. Touch the bevel on the wheel and then raise the handle until you just touch the tip. Feel for the burr.

It should be slight but very noticeable. There are two other ways to raise a burr. Use a diamond hone to polish off the top of the scraper and remove the existing burr. Then push the diamond hone up the bevel from the bottom. Finer hones produce fine burrs; course hones produce course burrs. I find that some steels work better with medium diamond hones and some work better with fine. Apparently the hardness of the metal changes how the burr is formed. The third method is to polish off the burr and then raise a new burr using a piece of hardened steel. Slide the steel across the edge and feel for the burr. Again, too much pressure produces a large burr that may be too aggressive and not cut cleanly. A small precise burr will cut cleaner.

So far everything I've discussed is with reference to the scraper being used flat on the tool rest. All of the above is still true but there is another technique called shear scraping that will produce a cleaner surface than a scraper held flat on the tool rest. In this case the scraper is held at about 45 degrees or slightly steeper. Cut with the lower half of the scraper and pull it across the wood. This will produce very fine shavings and is usually my last technique before going to sandpaper. I have a video showing this technique which can be accessed through AAW Video Source.

~ John Lucas, a retired photographer, has been working in wood for about 35 years and also dabbles in metalworking. He also enjoys modifying machines, making tools, and sharing his knowledge through written articles and videos. He has taught classes at John C. Campbell Folk School, Arrowmont, and The Appalachian Center for Crafts.

VIDEO: Shear Scraping by John Lucas (TRT 8:44)



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