

ASK THE EXPERT

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

Q: How to make and use a negative rake scraper?

I hear a lot about negative-rake scrapers and it gets confusing how to make one and when to use it.

~John Berger, California

A: Using Negative-Rake Scrapers

Being such a proponent of negative-rake scrapers, this is a question I am asked quite often. I started using negative-rake scrapers when I first began turning after meeting Stuart Batty and seeing the work he was doing on his wing bowls and deep vases. I do a lot of thin wing type pieces and platters and found they worked superbly and safely. I feel it is a very worthwhile change to make on a scraper, but first there are some things you should be aware of regarding negative-rake scrapers.

A negative-rake scraper is not meant to be a wood removal tool, but more of a finishing tool for smoothing out ridges or transition marks and small uneven areas left by a gouge or hollowing tool.

Negative-rake scrapers were designed primarily for and work best on hard, dense, dry woods.

Some turners say that they do not work on softer woods or green wood. I personally have tried them on all types of woods and I have often been surprised how well they worked. Regarding green wood, negative-rake scrapers most often will “fuzz up” the surface, but if you do not get a smooth finish with your bowl gouge, I believe it is easier to sand out fuzz on an even surface than tool marks or ridges on an uneven surface.

Negative-rake scrapers cut with the burr, which is produced during the grinding process. Since the burr is produced on the opposite side from the one that is being ground, it is important to grind the bottom bevel last. The burr does not last very long, only about 30 – 60 seconds for M2 high speed steel and maybe 2-3 times longer with the harder “10V powdered metal” tools such as provided by Thompson Tools and others.

It is essential that a burr can be felt on the cutting edge for it to work. Once the burr is worn away, the scraper will not cut efficiently, which causes you to apply more pressure and this will begin tearing grain and causing thin walled pieces to flex. Neither is good.



Negative-rake scrapers should be used in a level, horizontal position on the centerline and not tilted downward in a trailing position or on edge at an angle in a shear scraping position. Used correctly, I find them to be virtually catch-free.

So if you are currently using your scrapers to hollow end grain boxes and such, you should probably preserve those as they are and purchase others to be ground as negative-rake scrapers.

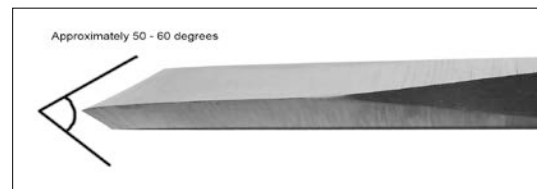
The recommended included angle (as measured across both bevels) is generally between 45° to 75°. A negative-rake scraper with a 45° angle will cut a bit quicker, but the burr will not last as long as one at 60°. I have always ground mine with equilateral angles on both sides and have settled on the included angle measuring about 55° (it's really not that critical). Some people refer to these angles as being 30°/30°. That would be 30° down from both sides giving an included angle of 60°. By grinding the scraper in this manner it can be used in either a right hand or left hand position on different curves of a bowl or on either side of a wing or platter by simply flipping it over and regrinding the scraper to raise the burr on the top side.

There are many different methods of setting the platform angle to the grinding wheel. I am of the opinion of keeping it simple.

Having said that, rather than try to explain how to set the angles, I have come up with a jig that makes it quick, simple and easily repeatable.

I have a handout on my website (<http://www.rudolphlopez.com/>) that has information on the negative-rake scraper and includes a full-sized template for making a small jig to set the angle of the grinder platform. This will get you very close to 50° or 60°. You can then vary the angle if you wish.

Just remember when re-sharpening the scraper, if you have changed the platform angle for sharpening something else, it is of utmost importance that you re-set the platform precisely back to the correct angle to ensure that you are grinding the entire bevel to produce a burr on the scraper edge. You must be able to feel a rough burr on the top of the scraper edge. Without a burr, the negative-rake scraper will not function properly.





~Rudolph Lopez, Tampa Florida
Woodturning has given me another way to bring out the sometimes hidden beauty of wood for others to enjoy and the opportunity to share my enthusiasm for turning through demonstrating and teaching at many clubs across the country, regional symposiums, and the John C. Campbell Folk School. My travels have allowed me to meet an endless number of wonderful people and many outstanding woodturners.



MARK YOUR CALENDAR

31th Annual International Symposium
June 22-25, 2017 in Kansas City, MO

