

# The Negative Rake Scraper (NRS)

by Andrew Hilton - Hilton Handcraft of the Ozarks ([www.HiltonHandcraft.com](http://www.HiltonHandcraft.com))

You may have seen a new tool being used and discussed lately by some professional woodturners. This isn't too surprising as many pros will create or adapt tools to their particular turning needs. But, this one has actually been used for many years in one form or another by both the professional and the beginner. Instrument makers (flutes, etc.) have used these tools for centuries! The beginner just hasn't likely realized what they've been using and how best to exploit this tools' best features.

A turner will take their skew, parting tool or bedan and use it as a scraper. We've all done it at one time or another. Some of us do it far more than we'd like to admit as well. Ha! They've actually been using a NRS tool. They need some minor modifications to really rank as a NRS though. See these three pictures for 2 versions. The basic design of a NRS is a scraper with an additional bevel on top of the tool where it's normally flat. This gives that negative rake. The burr is still necessary and it's formed at the juncture of the two bevels as you'd expect.



So, what's the big deal? The idea of NRS's is to slightly ride the bevel (the lower, smaller bevel) just as in a gouge but the "flute" of these tools is extremely small.... the height of the burr you raise on the end. With a reduced "flute" size as compared to a gouge, you get only so much bite or cut into the wood at any one time thus reducing (not eliminating!) huge catches. Of course, you only get so much bite or cut into the wood and can't really hog out wood like you can on a gouge either.

So, you can adjust the flute size by simply adjusting the burr you form on it. Of course, the burr (your cutting edge and resulting flute) doesn't last long at all and has to be refreshed frequently. Why does this leave a good surface? I think that we all know that we can get an exceptional surface from a scraper as long as we can control it and have an even burr all around the edge. Well, unlike a regular scraper, you're suppose to be riding that bevel under the raised burr of these negative rake scrapers. This gives you control that you don't normally get with a normal scraper. It's more of a gouge in that regard. It's less "catchy" when you have that support under you and doesn't want to "bite" into the wood as quickly.

Another reason is that negative rake or the upper bevel on this tool. It allows you to position the cutting end of the tool level or even a little above the handle end while still getting a cutting action on that burr. See the below, left picture. You can't do that with a normal scraper unless you turn it over on it's side to get a "shear scrape". But then you run into problems of controlling that angle and tool position.

Give this tool a try. You can make this tool yourself if you can't find one in a catalog. As seen below, right, you can just take a regular scraper and grind a (hollow-ground) bevel on the top of it to make a NRS tool. A slight curve along the top of the tool is usually better than a flat front. It's a nice finishing tool, especially for those very hard, dense exotics!

