

Let's make tools!

The Negative Rake Scraper

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"The negative rake (which refers to the scraper having both a top and bottom bevel) makes the scraper less "grabby". It is more controllable, less aggressive, and less likely to tear out the grain of the wood."
Cindy Drozda, Woodturning tool expert

Project list

1. High Speed Steel (HSS) blank
 - a. I am using 1/8" x 2.5"
 - b. Any size can be turned into a tool!
2. Vice grips
3. Slow speed grinder
4. Wood blank for handle (can be any size but the diameter must exceed the width of the steel to ensure safely seating the metal into the wood)
5. Drive bit
 - a. I am using 11/64
 - b. Any size that will produce a hole large enough to insert the hss blank snugly
6. Lathe to turn handle
7. Glue
 - a. I suggest epoxy but CA glue is another option



Slow speed grinder is best for sharpening HSS tools

USE CAUTION!

Always wear safety glasses in the shop, and when using the lathe, wear a face shield



High speed steel

M2, M25, what's the difference?

There are many different kinds of steel. High speed steel gains its strength from alloys. We are using M2, the most common HSS. Some drill bits and allen wrenches can be made from lesser quality steel. It won't hold a sharpened edge as long as HSS.

1. Using vice grips, clamp tightly on the HSS.
2. Mark the middle of the top with a thin marker
3. Grind down each side to the mark
4. Because the shape is a curve, sharpen each side, curving the metal edge as you sharpen

Making the handle

There are a lot of ways to make the handle. Essentially, turn the wood round, drill a hole big enough to insert the HSS, glue in place.

1. Center the wood blank on the lathe between a drive spur and a live center
2. Turn the blank round
3. Embellish to make it yours - in this photo, I've used a burn wire to mark the end
4. Insert one end in a chuck, being careful not to mar the wood
5. Using a drill chuck or a drill, drill a hole the appropriate size for the HSS.



Drilling a hole for the HSS

1. Use the next size up drill bit
 - a. For the 1/8, use 11/64
 - b. For the 3/16 use 1/4
2. Clamp the handle to use a drill or place in a chuck and use a Jacob's chuck
3. Mark the depth on the drill bit. Drill a third of the length of the HSS, or approximately 4/5", into the handle.

Glue HSS into handle

1. Use epoxy or CA glue to set the HSS into the handle.
2. Let cure for 24 hours before using.

