

Steel

Carbon Steel – Not best for gouges. Some prefer for scrapers & skewers. May quench after turning blue. If it does turn blue, it may still be sharp. Turn until it gets dull. Then re-sharpen. Hones well.

Chrome vanadium is a type of high carbon steel. Molybdenum is usually added to the mix, too. These metals are added to enhance the properties of the tool, but it is carbon alone that permits the steel to be hardened.

HSS Steel – Current Standard. Been around since the '30's. More brittle than Carbon Steel. Don't quench HSS steel after it has turned blue.

Powder Metallurgy (PM) – 3 to 4 times harder & more brittle than standard HSS Steel. Does not hone well.

Powder metallurgy is a sintering process where metal is placed in a die under pressure and heated in a controlled atmosphere at high temperatures. The metal coalesces and becomes a solid. A lot of secondary machining can be eliminated. ... Powder Metallurgy.

Powder Metallurgy(PM) - is a highly developed method of manufacturing reliable ferrous and nonferrous parts. Made by mixing elemental or alloy powders and compacting the mixture in a die, the resultant shapes are then sintered or heated in a controlled-atmosphere furnace to bond the particles metallurgically.

The Powders included can be carbide, harden alloys, & Carbide.

Tools over heating During Sharpening

If it does turn blue, it still can be sharpened. Turn until it gets dull. Then resharpen. The main reason for tool turning blue is not keeping the tool moving or applying too much pressure.

Don't quench HSS steel after it has turned blue.

Bevel Grinds

- Flat Ground Bevel – From a sander or a stone (I prefer for skewers)
- Hollow Ground Bevel – More Aggressive – Generally stays sharper longer, Easier to hand Hone because you are not remove as much metal. Created with a wheeled surface instead of a flat surface.

Bowl Gouge Profiles

- Finger nail/Side Grind
- Traditional

Show how a flat ground bowl gouge & finger nail grind bowl gouge can both cut flatly across the bottom.

Spindle Gouge Profiles

- Spindle Gouge
- Detail Gouge

Grinders

Standard Speed – 3450 – Removes material faster, sharpens faster, allows you to screw things up & allows you fix things faster. Better when you have more control when sharpening. Suggested by MFG for wolverine. Better for production.

Low Speed –1725 Removes material slower, sharpens slower, takes longer to screw things up, and takes longer to fix things.

6" Wheels – More Aggressive Hollow grind, Easier to hand hone.

8" Wheels – Less Aggressive Hollow grind, Requires you to remove more metal to hand hone.

Grinding Wheels

Size – Smaller diameter wheel will have a more aggressive grind. (preferable).

The harder the steel, the softer the grinding wheel should be.

Sharpening:

Main reason for tool turning blue is not keeping the tool moving or applying too much pressure.

After your edge has a serrated edge with serrate the size of the grit of your sharpening surface.

If you hone, your honing surface should be smaller grit(abrasive) then the grit of your grinder. If you only sharpen/hone with a leather strop, over time your serrated edge will become a straight edge, requiring less time to re-sharpen.

Repeatability
friable

3. Producing the least heat possible when removing metal
4. Producing the most consistent (sharpest) edge appropriate to the work the tool will perform.

Use a drawing of a gouge,

The harder of the steel use a softer grinding wheel.
The Softer of the Steel use a harder grinding wheel.

1. Show the fresh the arch of a hollow grind on a gouge.

Grinding Wheel

The harder of the steel use a softer grinding wheel.
The Softer of the Steel use a harder grinding wheel.

Shelvfield Steel VS every thing else

Disapted the heat - aluminum oxide wheels

"J" softness - slightly softer than the "H" grade

friable wheels brake away faster, dispating the heat.

I too was unable to duplicate that wonderful edge I got one day because I had nothing to compare it to. So the next time I got a fabulous edge I got some modeling clay and plunged the end of the gouge into the clay. Then I filled the depression with Permastone, a casting plaster. Now I have a mdl to follow when grinding my gouges. ;{) Lorne

Perhaps. But properly honed, the edge *will* last longer. When you use abrasives to sharpen, you have lots of small cutting "points." These points actually form a serrated edge (very small...the smaller the grit, the finer the serrations). At coarser grits, the serrations protrude more, giving longer unsupported metal "teeth." These break off more quickly than a more finely ground edge. There are several variables in how long an edge will last: hardness of steel, fineness of grind, silica content of

the wood (ie, how abrasive the wood is), speed, etc. Everything else being equal, the finer the grit an edge was sharpened with, the longer it will last.

Honing – Don't round your edges

Things that affect turning related to sharpening – Repeatability

Grinding a gouge or skew leaves a serrated edge, with the serrates the size of the grit of grinding wheel

Honing a gouge or skew after you grind will turn the serrated edge from grinder to a straight edge. (The serrate are reduced to the size of the grit of your hone).

A honed edge is a stronger edge compare to a freshly ground egde.

If you hone you should use a grit much finer than or grinding wheel.