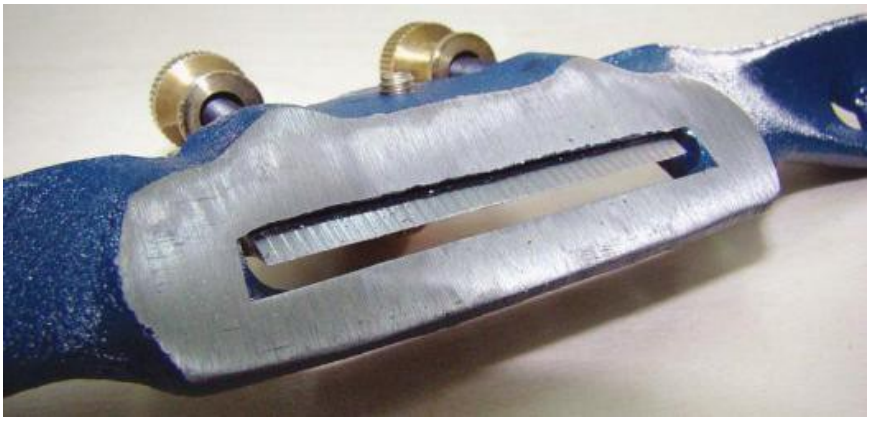
Tuning and Using a Spokeshave



Bad Sole – Partly concave, partly convex and rough all over. It looks like the sole of this shave was ground freehand. If you don't buy it then you won't have to fix it.

Spokeshave tune-up – give this neglected tool a new lease on life
Now let's have a look at this tool and what it takes to make it sing. A spokeshave is really a small plane. Like other planes, it may have its blade set bevel-up or bevel-down. Unlike them, it has handles sticking out the sides and a very short sole. This makes it an agile plane that can shape and smooth curved surfaces.

Since bevel-up and bevel-down spokeshaves behave differently, I'll deal with them separately, starting with the beveldown type.

Bevel-down or standard-angle shaves
Like most metal spokeshaves sold today, the one I bought is based on the ubiquitous Stanley No. 151 design. Its blade is installed bevel-down at a 45˚ angle. Versions from Record Tools and several other makers are all but identical. Since it's so common, it's the perfect example of how to improve the tool's performance. These are the steps to follow:

1. Replace the blade
This step is simple. Lee Valley/Veritas (leevalley.com) and Hock Tools (hocktools.com) both make replacement blades to fit the Stanley No. 51 and the Stanley/Record 151 series shaves. (The No. 51 is the same as the 151 but a bit smaller and without the adjustment knobs.) All you have to do is hone the blade and install it. You're already half way to having a new spokeshave.

2. Flatten the spokeshave's bed and clean up the mouth
You won't reap the benefits of a premium blade if the casting on which it rests is uneven. That's just asking for blade vibration and chatter. Unfortunately, instead of machining castings flat, many manufacturers just take the rough casting and cover up the bumps with a thick coat of paint. Scrape the paint off. Use an old file ground to a sharp edge or another small, sharp object to get into tight spaces. Either way, don't ever consider reaching for one of your newly honed chisels. With the paint gone, continue scraping the metal in different directions until you achieve a flat and evenly cross-hatched surface. This should all but eliminate blade chatter.

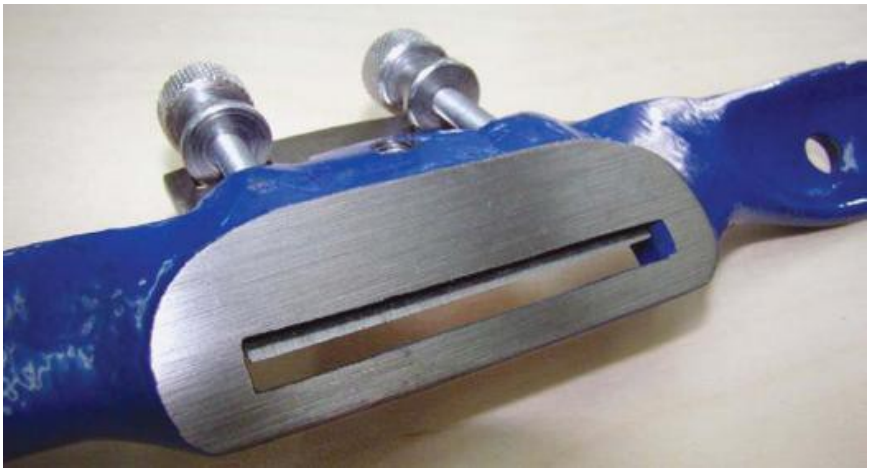
To improve the bed one step further, you can resurface it using either epoxy or auto-body compound (Bondo). Apply a thin, even coating to the spokeshave's bed. Wax the back of the blade so it doesn't stick, then lay it onto the new bed of epoxy or compound and assemble the shave. Extend the blade far enough that the bevel doesn't leave a ridge in the epoxy. Then apply gentle pressure using the center cap screw – just enough to flatten the epoxy and hold everything together while it cures.

Painted Bed – The small dark spots to either side of the cap screw and around the mouth are the only points where the blade makes contact with the body. The paint needs to be removed and the bed scraped flat.

Scraping the Bed – An old file ground square makes a pseudo-engineer's scraper to clean up the spokeshave's bed. Remove the paint then work across all contact areas with a cross-hatch pattern until the entire work surface is level and smooth.

Epoxy to the Rescue – To level the spokeshave's bed, apply a thin layer of epoxy or auto-body compound to it. Level this by placing the (waxed) blade onto the compound and then gently tightening the cap screw onto the blade to apply even pressure. Any squeeze-out can be removed with a file and sharp knife.

3. Smooth the sole and clean up the mouth.
A spokeshave's sole needs to be flat and level, just like a handplane's. Highquality shaves come with a properly machined sole. A sole that has been ground flat and smooth by the manufacturer just requires a bit of final smoothing. Smooth the sole using emery paper on glass, working from 120 through 400 grit. It won't take long – it's a small sole. Round-sole spokeshaves can also be smoothed this way, using a strip of emery paper without the glass. Clean up irregularities around the shave's mouth with a fine file and then use emery paper to remove sharp edges.



Decent Sole – This spokeshave's sole has been ground flat and smooth by the manufacturer. A quick polishing with fine emery paper is all that's needed.

A Clean Mouth is Important – Use a fine file to clean up any nicks or rough edges once the spokeshave's sole is flattened and smoothed.

4. Smooth and refine the cap iron
A spokeshave's cap iron should be perfectly flat, just like the bed. What you can expect to find, however, is a rough sand casting. This needs to be ground flat.

Hone the bottom of the cap iron using either a diamond stone or emery paper on glass until it mates perfectly with the blade. Refine its curve down to a sharp edge contacting the blade across its entire width. This prevents shavings from jamming underneath. Now polish the cap iron's surface and it will perform just like a bench plane's chipbreaker.

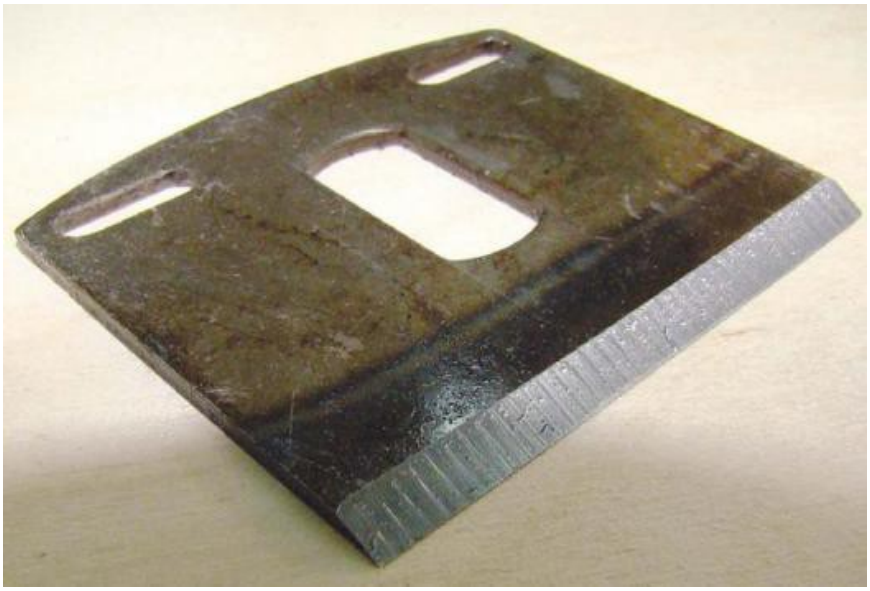
Flattening the Cap Iron – To ensure good contact between the cap iron and blade, lap the cap iron flat using emery paper on glass. A coarse diamond stone also works well.

5. Hone the blade
Many people still believe that a new blade is sharp and ready to go. It isn't.

Plane blades, chisels, carving tools and the like come to you with edges that range from almost sharp to really dull. Even premium blades come sharp, but still not as sharp as they need to be. Hone the back and micro-bevel of a premium blade

on an 8,000-grit waterstone. Finish on a leather strop charged with honing compound.

That's for a premium blade. The blade from a cheap spokeshave will need the Full Monty. Just replace it.



Don't Waste Your Time – This is what passes for a blade in some shaves: a flimsy wafer of cheap steel with a serrated edge that was impulse hardened instead of being tempered. Straight to the trash.

Wood Shave and Blade – Threaded posts have made blade adjustment much more precise. The brass strip inset in front of the blade prevents wear to the body, something to which wooden shaves are prone.

Low-angle Spokeshaves

Low-angle spokeshaves have their blades set bevel up like low-angle planes, with an effective cutting angle of between 20–35˚. Like low-angle planes, they're the tool to use on end grain, yet are equally proficient making delicate shavings in seasoned wood or heavy cuts in green wood. This makes them a favorite of chairmakers for shaping spindles and with the blade set to take a heavier cut on one side than the other it's almost like having two tools in one.

Antique low-angle shaves were difficult to sharpen since their blades were forged with two upturned tangs that held the blade in place with a friction fit. Modern shaves have removable threaded posts held in position with thumbscrews or wheels. This makes for more precise blade adjustment while simplifying sharpening.

One design exception is the Veritas® Low-Angle Spokeshave made of cast aluminum. This shave has a flat blade without tangs, making sharpening a breeze.

Lee Valley also offers a kit to make wooden low-angle shaves for about half the price of buying one. It includes an A2 blade, brass wear strip to fit in front of the blade, a tap to cut threads, and all hardware and instructions needed to build a fine quality shave with precision depth adjustment.

Using a spokeshave properly

Spokeshaves – whether standardangle or low-angle – can be pushed or pulled. The Stanley 151's design lends itself much more to pulling than pushing, however, and this has unfortunately shaped how generations of amateur woodworkers have used the tool.

Their technique is to set the blade for an impossibly heavy cut, grasp both handles as if they were handlebars on a bike, and then use a pull stroke to muscle off a shaving so thick that it jams solid in the tool's throat. After clearing the jam, the technique shifts to a series of short, hacking pull strokes to force the blade through the wood. It's pretty ugly; an axe has more finesse.

Contrast that with a woodworker using a well-tuned shave properly: the blade is scalpel-sharp and is set to take a thin shaving. The spokeshave is held between the thumbs and fingers in a light grip. It is pushed or pulled, dictated by the grain direction and the most comfortable working position.

Paying attention to the grain direction means that on a concave surface you'll want to shave "downhill" with the grain – in other words, you'll start at either end of the concave shape and will shave downwards toward the middle. On a convex surface, you'll start at the middle and work toward the ends – again so that you're cutting "downhill."

The round handles on the Veritas and Lie-Nielsen shaves make them comfortable to work with using either a push or pull stroke. As mentioned, the Stanley 151 design used by most standard-angle shaves favors the pull stroke. You can use a push stroke but the ergonomics feel a bit odd.

When pushing the shave, place your thumbs on its back behind the blade's tangs with a low-angle shave or behind and below the blade with a standardangle shave. Place your middle fingers on the front of the shave in front of your thumbs. This provides your grip. You're effectively pinching the tool between middle fingers and thumbs. The power comes from your thumbs with control provided by your fingers. Your index fingers should rest on the shave's body just inside your middle fingers. Push down on the shave with them to control chatter.

A pull cut is similar. Your middle fingers on the back of the shave now provide the force while the thumbs help control direction. Pressure from the index fingers helps control chatter. Note that whether you're using a push or pull cut, you use fingers and thumbs to hold the shave. You don't wrap both hands around the handles and put your back into it.

Spokeshaves are prone to chatter because of their short sole. Skewing the tool helps minimize chatter by reducing the blade's effective cutting angle, which in turn reduces resistance. In fact, a sharp low-angle shave will take shavings of end

grain from a Windsor chair seat. Not chips – long, continuous shavings.

Perhaps more important, skewing the spokeshave increases the length of the sole in contact with the wood which helps to fair curves from very gentle (spokeshave skewed to lengthen sole contact) to very tight (spokeshave at right angles to work). Stay aware of the grain direction. If the grain reverses, the shave – especially a low-angle one – will lift and tear out the wood fibres. There's another good reason to use a light touch.

You'll get a feel for a spokeshave a lot faster by using one than by reading about it. Your fingers and thumbs will provide all the feedback you need.

Just remember a few things:
• A well-tuned spokeshave is a precision tool.
• It's okay to buy a spokeshave that will take a bit of work to tune up, but don't buy a piece of junk. It will never work well. You will always hate it.
• No matter how good the tool, you still have to sharpen the blade.
• Practice. Whether it's golf or woodworking, practice is everything.

If you're not using spokeshaves in your shop, it's worth giving them a try. And if you've relegated one to the bottom of the toolbox because it never worked, maybe some of the tuneup tips here will help bring it back to life.

The spokeshave is my "go-to" tool for any number of jobs, whether it's shaping chair spindles or putting a shimmering finish on curved components. The proof is in my tool rack: 14 spokeshaves, and the number keeps on growing.

Push Stroke – A proper grip for a push stroke is a little awkward with a No. 151 style shave. It's easy enough to use a thumbs-and-middle-fingers grip with the index fingers pressing down to prevent chatter, but the ring and little fingers are left out in the breeze due to the sweep of the handles. It's something you get used to.

Sharpening A Concave Spokeshave

Spokeshaves with concave blades for use on chair spindles or paddles are tuned the same way as bevel-down shaves except for sharpening the concave edge of the blade. You will need some slip stones or a round object of the correct diameter to wrap a piece of very fine abrasive paper around so you can hone the bevel edge of a concave blade.