





Don't Fear the Belt Sander

A fast, precise, and less strenuous method
of smoothing and shaping

BY CHRISTIAN BECKSVOORT

The plane vs. belt sander debate is likely to continue indefinitely. What it boils down to is process vs. product. Let's face it: Neither the wood, nor 99.9% of customers care which you use, as long as the results are the same. Personally, I much prefer to use a handplane, but I have a business to run, and it's all about efficiency, not personal gratification. In my experience, the belt sander, though noisy and dusty, is faster and less laborious. I can achieve results that are every bit as presentable in way less time.

Panel sanding

Slow and steady wins the belt-sanding race. Basic belt sanding is getting a feel for moving the machine and adjusting the belt on the sander.



No clamping necessary. Because the belt pulls the workpiece toward you, it isn't always necessary to clamp it down. Just butt the piece up to a stop on the near side. Position the stop slightly below the thickness of the workpiece. Sand with the grain, and move slowly and evenly forward and backward. Let the platen extend about halfway beyond the workpiece.



Switching out belts. Changing the belts is easy. Just flip the lever to release tension on the belt and swap it out. Use the arrows on the inside of the sanding belt to align it in the correct direction of travel. It is key to track the belt in line with the front and rear wheels. While the sander is running, use the tracking knob to adjust the placement of the belt on the wheels.



Sanders are workhorses in my business. When I start a new case piece, I glue up the panels and take them to a local cabinet shop to use their wide belt sander. In under a half hour, I have all my panels sanded to 150 grit, and at a consistent thickness. Back in the shop, I'll belt sand to 180 or 220 grit. Then I'll use an orbital sander to 320 and 500 grit, hand-sand with those grits, and finally buff with 0000 steel wool. But let's concentrate on the belt sander.

Like a handplane, the sander can smooth a surface, or do a lot of damage if you're not careful. Both tools require practice and experience to know their subtle nuances. Practice on scrapwood until you're comfortable. It's worth noting that even though I rarely use plywood, I will use a belt sander only on Baltic-birth plywood, with its thicker veneers. Regular plywood's outer veneer is too thin to risk belt sanding.

My sander is a Skil model 449. I bought it in 1980, and it's still going strong. Sadly, it was discontinued in the early to mid-'90s.

Start with flat panels and edges

Most often, I use the sander for flattening and smoothing solid stock. Bumps and twists can be taken out with a 40-, 60-, or 80-grit belt, depending on the severity of the problem. The belt sander is also great

After the belt sander

Becksvort belt-sands to 180 grit. Then he moves to the random-orbit sander, hand sanding, and finally steel wool for a finished surface.



Three steps to a fine finish. After belt sanding to 180 grit, move to the random-orbit sander (1). Becksvort moves through the grits from 220 to 320 to 500. Follow up the random-orbit sanding by hand sanding at 320 and 500 grit (2). A final rub with 0000 steel wool polishes the surface to a beautiful sheen (3).

at getting rid of handplane tearout on both panels and edges.

Be sure that the belt tracks well. A belt that's out of alignment will either hit the rub plate inside and throw sparks, or wander to the outside and leave gouges.

Take long, smooth strokes, and let the sander's weight do the work. No need to bear down. Sand with the grain, and slowly work your way from one side of the surface to the other, overlapping the passes. The platen of the sander should extend about halfway off the stock at the ends of the stroke. Forward and backward passes should be at about the same speed. Start with 120 grit, move to 150, and then 180.

Once you've mastered flat panels, it's time to practice edge sanding. Like planing, it's a matter of balance, keeping the machine flat, centered, and parallel to the edge being sanded. Again, long, smooth

A BELT SANDER TACKLES EDGES AS WELL



For edge work, hold the workpiece in a vise, and move the sander forward and backward on the edge. Let the weight of the machine do the work. If you push down you'll risk tipping the sander over the edges. Again, slow, methodical movement is the key.

Odd-shaped parts

Belt sanders can handle more than flat panels. You also can use them to sand the surface and edges of curved panels, shape concave surfaces, and turn facets into rounds. As with other types of sanding you have to figure out how to keep the shaped pieces in place while you sand.

ROUND TABLETOPS

Becksvort makes specialized benchdogs—dowels with a flat piece on top—to aid in holding curved pieces for sanding (right). Then he sands the surface just as he would a square panel (below).



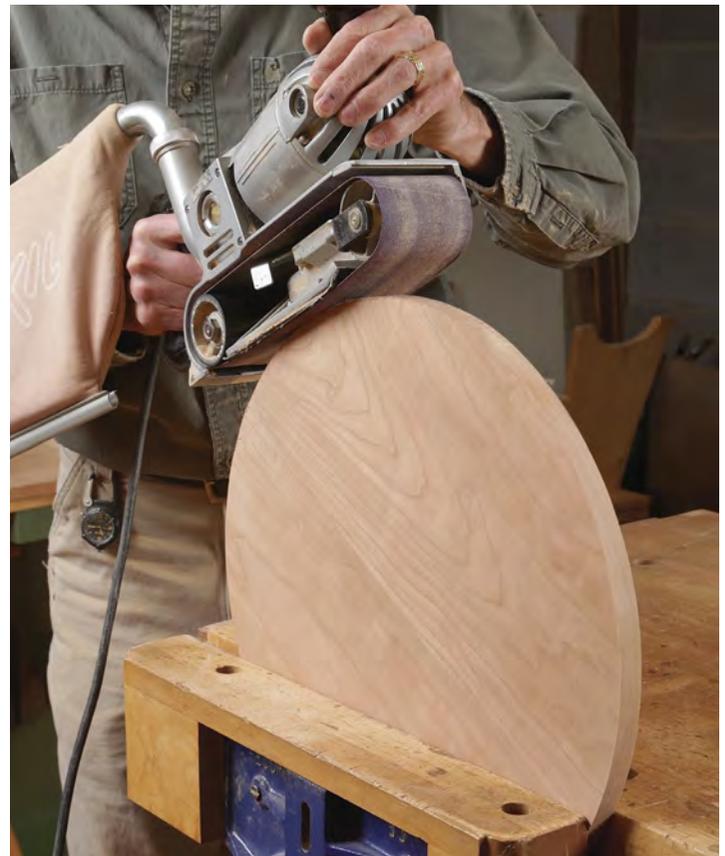
passes are what you're aiming for. Where the sander really excels is in sanding round or convex edges, like those on tables or headboards. You can go all the way around a table edge and never have to worry about grain direction. The trick is to consistently hold the sander parallel to the edges as you work your way around.

Shaping with the belt sander

The nose of the belt sander is useful for shaping. When I make pencil posts (see opposite page), the chamfers on the corners are done with a router, which leaves an odd shape. That's cleaned up and made to look symmetrical with the nose of the belt sander. Then I use the flat of the sander to clean up the facets of the octagon.

Sanding and fitting drawers

Most folks use a handplane to trim drawers with proud dovetails to fit into the case opening. That works most of the time with no problem. However, handplaning them when you have squirrely or angled grain



Edge sanding a circle. With the round panel in the vise, hold the sander as you would on the edge of a flat panel. Get into a rhythm moving the sander up and over the curve and back. Turn the panel in the vise and work on the next section.

BED POSTS

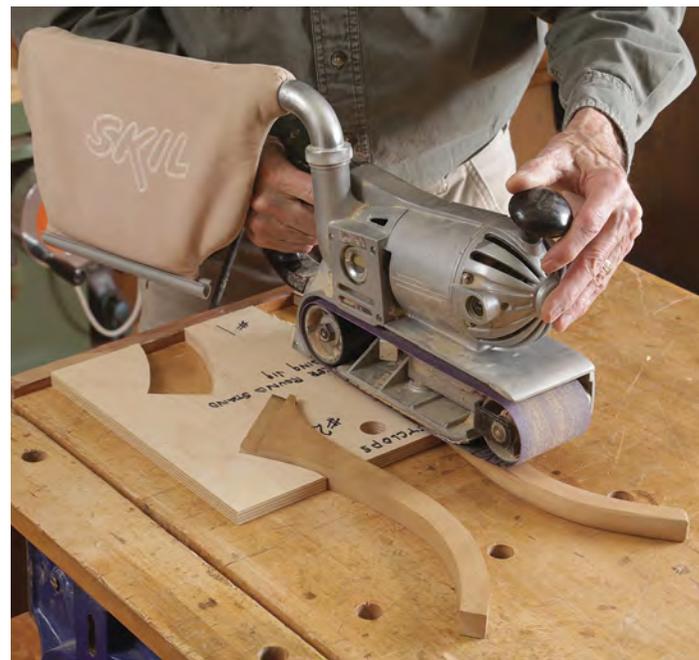
Again, keeping the workpiece stationary while sanding is important. To do this Becksvoort uses a block at the back, V-blocks to cradle the post, and a shopmade benchdog with a dowel that fits into a hole in the top end of the post.



Taking shape. The nose of the belt sander is perfect for smoothing and shaping the router marks left at the end of a stopped chamfer. After that, use the base of the sander to clean up the facets of the octagon.

SHAKER TABLE LEGS

Because he frequently makes the same table with shaped legs, Becksvoort made a fixture to hold the legs while sanding them. Back the plywood fixture to a stop on the bench and insert the legs in the cutouts. The sander will pull the assembly into the stop, keeping it stationary while you sand.



Sanding drawers

The belt sander is a workhorse for smoothing drawer sides and for flattening the fronts of drawers to cases.



DRAWER SIDES

This fingered fixture is held in place by a cleat underneath inserted into the face vise. Slot the drawer box over the fingers and sand the face that's up. Rotate the drawer until all the faces are sanded and the dovetails are flush.



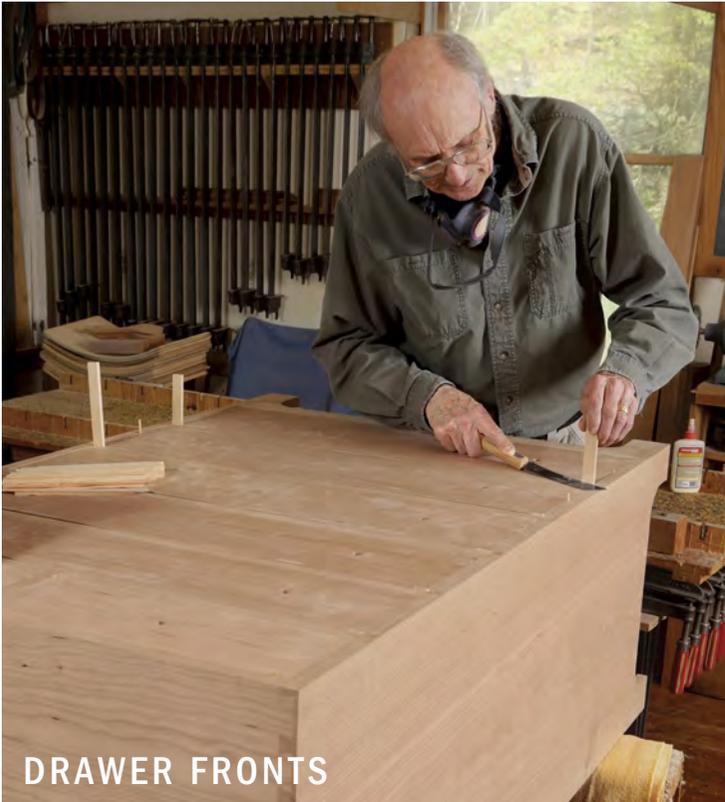
A stop at the back. There's a stop at the back of this fixture that Becksvoort uses for sanding the top and bottom edges of the drawer boxes.



behind the dovetail can be a major problem. A block plane works great on the end grain of the dovetails, but will do nothing but tear wild grain going downhill. On the other hand, a high-angle plane will work wonders on recalcitrant grain but will shred end grain. The belt sander doesn't care which way the grain runs.

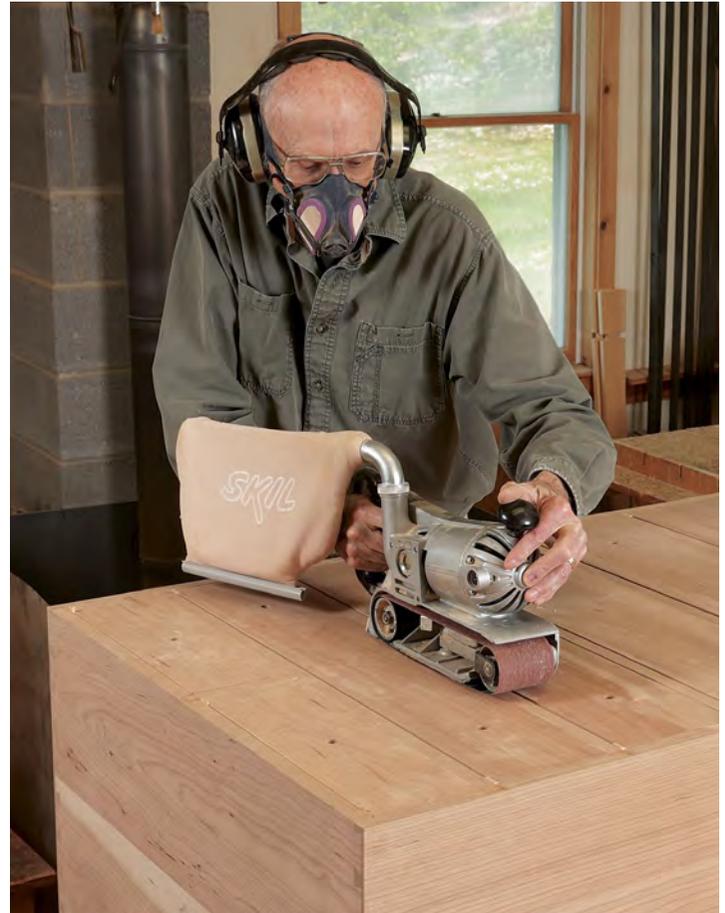
Flattening and sanding a chest of drawers

Some operations are extremely difficult to perform with a handplane. For example, my seven-drawer chest has closely spaced $\frac{3}{4}$ -in. dividers that intersect at 90° to each other. Planing those flat, and changing direction without knocking off edges, is next



DRAWER FRONTS

Wedge the drawers. To ensure that the drawers don't move around in the case while you're sanding, insert wedges between the dividers and drawers and cut them flush. Sand through the grits, starting at the top and moving side to side from frame to drawer until you reach the bottom.



to impossible. Not only that, but all seven drawer fronts have to be flat and in one plane. I do both operations with the belt sander. The drawers have stops and I use pine shims to wedge each one in its opening. Then, with the case on its back, I sand all the dividers and drawers in one operation: 80, 100, 150, and 180 grit with the belt sander, finer grits with the orbital sander, hand sanding, and finally 0000 steel wool.

With practice, this tool will save you time and effort. And before you wrinkle your nose at a "power tool," remember the words of the British craftsman and professor, David Pye: "...workmanship (is) using any kind of technique or apparatus, in which the quality of the result is not pre-determined, but depends on the judgment, dexterity, and care which the maker exercises as he works." In other words, it matters little if the tool is powered by elbow grease or electricity. In this case, both constitute the "workmanship of risk." □



Christian Becksvoort is a professional furniture maker in New Gloucester, Maine.

Sand, check, sand again. Becksvoort stops between grits 80, 120, and 150 to check for flatness with a straightedge. He marks the high spots with a pencil before sanding again.