

Oscillating Spindle Sanders

For smoothing inside curves, these machines give long abrasive life and a better finish

BY BERNIE MAAS



Smoothing concave surfaces can be a chore. If you've tried sanding these areas by hand, you know what I mean. A belt sander works well on outside curves, but it can't follow a concave surface. However, a spindle-mounted drum sander will take the pain out of cleaning up after the bandsaw and jigsaw.

Maybe you've made do with a sanding drum mounted on a drill press or a radial-arm saw. Though inexpensive, this type of drum-sander attachment has several disadvantages. First, the size of the work is limit-

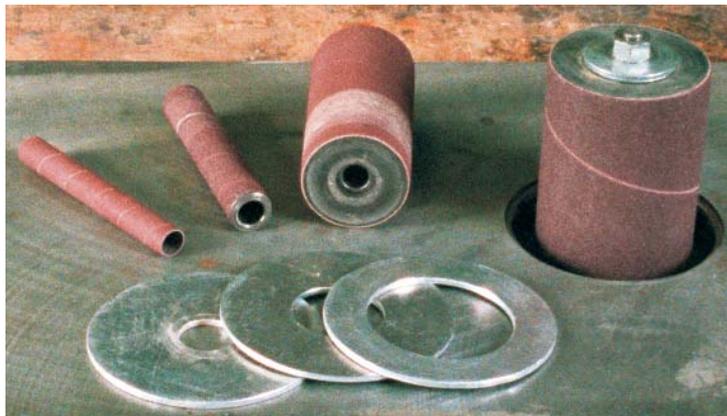
ed by the distance between the spindle and the machine's support column. Second, stock removal is slow. With the sanding drum always buried in the work, the abrasive is quickly clogged and glazed. Finally, high spindle speed accelerates the heat buildup and glazing. If you have to sand a lot of interior curves, you'll want a benchtop oscillating spindle sander.

Pick drums to fit the work

An oscillating spindle sander is an ingenious marriage of a drill-press-like quill

and cam or crank that allows the sanding drum to move up and down and spin simultaneously. This cyclic motion speeds stock removal by bringing more abrasive into play and allowing some of the abrasive to exit the work briefly for cooling. With a rate of about 60 to 75 oscillations per minute, the reciprocating action minimizes deep scratching. And because the spindle sticks out of the machine's table, like a shaper, there's no structure above the table to limit your work.

All oscillating spindle sanders accept sev-



That's a big drum. Use the largest drum that fits the work and the correct-size insert for stock support. Large drums produce the best finish in the least amount of time. Some work may require using several drums of different diameters.

eral different diameter drums. When I lay out interior curves, I try to size each radius to fit one of my array of sanding drums. Usually, I aim for the largest drum that fits. The bigger the drum, the smoother the finished curve. Larger-diameter sanding sleeves, with greater abrasive area, also last longer. Sanding drums are available in standard diameters, from 1/2 in. to 3 in. Because the sleeves fit over the drums, the actual sleeve outside diameter is about 1/8 in. larger than the nominal diameter.

To mount a sanding drum, simply slip the

abrasive sleeve over the drum and then slide the drum over the spindle. The retaining nut should be tightened just enough that the sleeve doesn't slip. Overtightening the retaining nut can distort the sleeve.

There are many sizes of table inserts available to close the gap between the drum outside diameter and the table opening. A table insert is critical for stock support and helps vacuum draw for under-the-table dust collection.

A few tips on using the sander

There's no steep learning curve to this machine, but here are a few tips. For the best control, feed against the spindle rotation. Feed pressure should be tangent to the drum, not radial. What's that mean? As you feed, don't push heavily toward the center of the spindle; instead, feed with even pressure both against the drum and in line with the edge of the drum. Pushing toward the center of the spindle produces a washboard surface that is difficult to remove. To reduce heat buildup, work the entire piece from one end to the other, back and forth, allowing one area to cool down while sanding another.

Also, take care in approaching inside corners, where the drum can catch and whip the work out of your hands. Snagging the edge of holes or interior cutouts is possible if the work is cocked. Pick a drum that gives sufficient clearance with the opening.

Take the usual safety precautions for rotating machinery. Stop the machine before placing the work over the spindle. Keep your hair back and avoid dangling clothing and jewelry. Wear eye protection and keep your hands away from the drum. □

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ANATOMY OF A SPINDLE SANDER



A drill-press column limits access to interior cutouts. And with the drum constantly buried in the work, the abrasive will quickly clog, heat up and glaze over.

