



Bandsaw Your Own Veneer

Tips for smooth
slicing in any kind
of wood

BY TIMOTHY
COLEMAN

It is a wonder to me that I can take a piece of solid wood, with its unforgiving properties of seasonal movement, resaw it into veneer and glue it to a stable substrate, and it will suddenly behave quite demurely. Much of my work consists of decorative cabinets and tables, and on the broad surfaces of these pieces veneer really shines. Most often, I cut my own veneer. Shop-sawn veneer gives me the stability of commercial veneer and a measure of flexibility that is missing from its commercial cousin. It lets me mix solid wood and veneer from the same stock, offers more integrity on an exposed edge and has enough thickness that I can work the surface as if it were solid wood. I can hand-plane the material or do shallow carving or sculpting on the surface. Building with solid wood may be faster than using bandsaw veneer, but I can seldom resist the

Photos, except where noted: Jonathan Binzen

magic of sawing a board into thin slices and spreading it out over the surfaces of a piece of furniture.

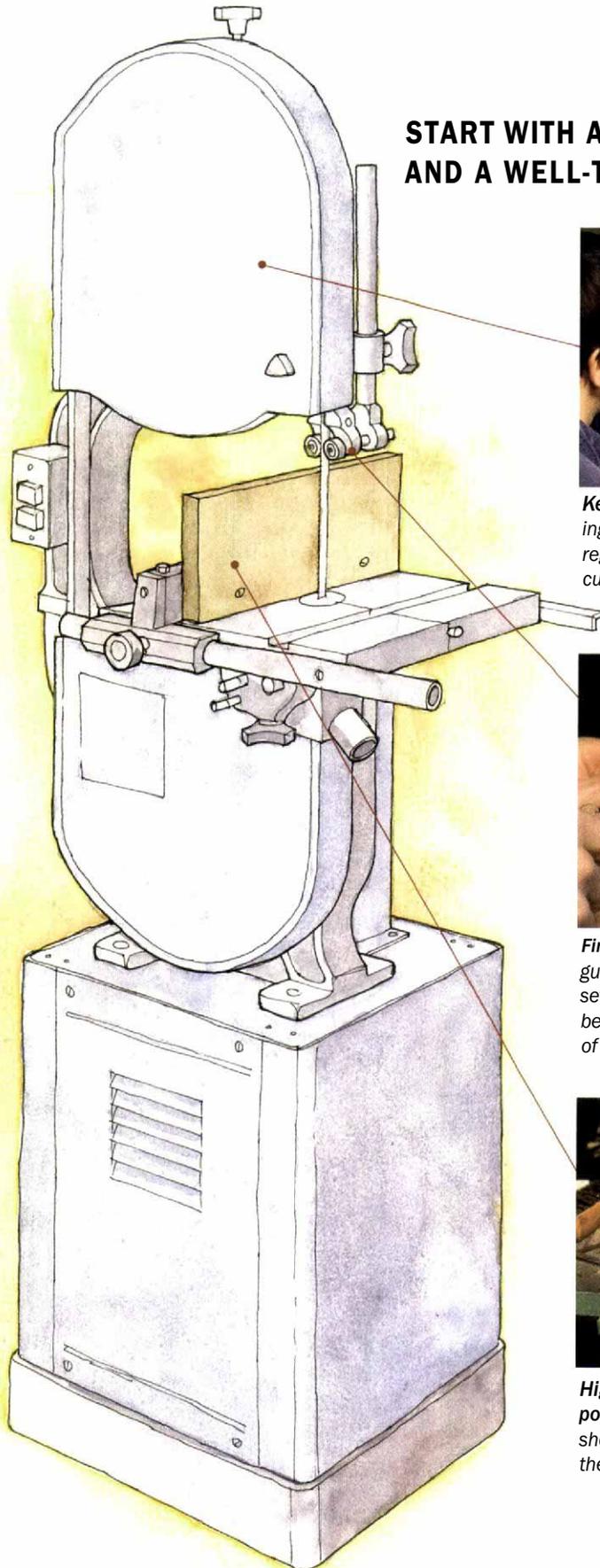
There are times when I use commercial veneer. The exotic figure and wide dimensions of the material can be an advantage. In recent years, however, the standard thickness of commercial veneer has gotten thinner and thinner. There is no margin for error when working with this material, and I am on pins and needles until the piece has a finish on it. When I saw solid stock into veneer myself, I have no such worries.

Bandsaw: the essential veneer tool

At the heart of sawing your own veneer is the bandsaw. If yours is running correctly, cutting veneer will be a pleasure. If not, prepare for pain. I have spent many hours fine-tuning my bandsaw. I have replaced the tires on the wheels, replaced the original guides with Carter roller-bearing guides and modified the factory-supplied fence so that it can pivot a few degrees, which allows me to adjust for the drift of the blade. Just about any bandsaw carefully tuned can be used for sawing veneer. I use a 24-in. European saw, and it works very well. A smaller saw will work, but its limitation will be in the width of the stock it will cut. If needed, you can always rip the plank into narrower pieces, resaw it and rejoin the veneers edge to edge.

I typically use silicon-carbide hook-tooth blades, ½ in. or ¾ in. wide. The teeth are set in a raker-5 pattern, which means they alternate left, right, left, right and then have an unset raker tooth. Bimetal blades reportedly work well on abrasive woods. However, because they are designed for cutting metal at slower speeds and are more than twice the price of standard blades, I do not use them.

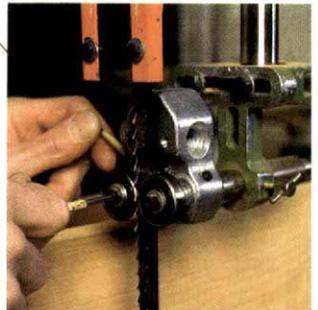
Bandsaw tune-up and setup—Always go over the bandsaw from top to bottom before starting. Use a fresh blade and clean the tires with a stiff nylon brush. Screw an auxiliary fence of medium-density fiberboard (MDF) or melamine to the factory fence. The auxiliary fence provides the



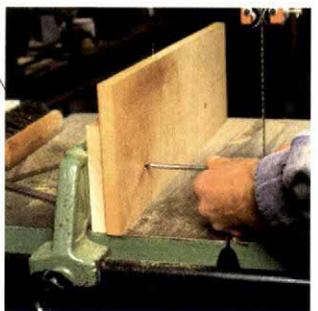
START WITH A FRESH BLADE AND A WELL-TUNED BANDSAW



Keep it clean. For best tracking, brush the bandsaw's tires regularly and start a veneer-cutting job with a fresh blade.



Fine-tuning. Raise the upper guides to cutting height before setting the bearings. The roller bearings should be set just aft of the blade's gullets.



High fence provides full support. The auxiliary fence should be at least as high as the veneer will be wide.

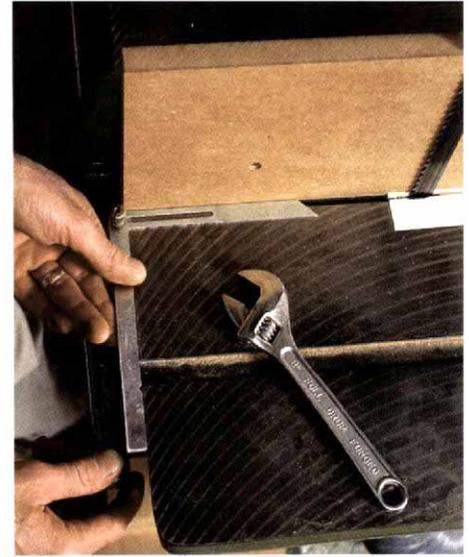
ALIGN THE FENCE TO THE BLADE'S DRIFT



Get the drift? To cut veneer accurately, the fence must be set to the natural cutting angle, or drift, of the blade. Find the drift angle by cutting freehand along a line drawn parallel to the edge of a scrap. Stop cutting after 8 in. or so.



Bevel records the drift angle. With one hand, keep the scrap from shifting. With the other, use a bevel gauge to measure the angle between the scrap and the front of the saw table.



Angle the fence. Use the bevel gauge to set the auxiliary fence to the scrap's cutting angle.

height necessary to support veneer stock, which can be up to 10 in. wide. It is critical that this fence be smooth and flat.

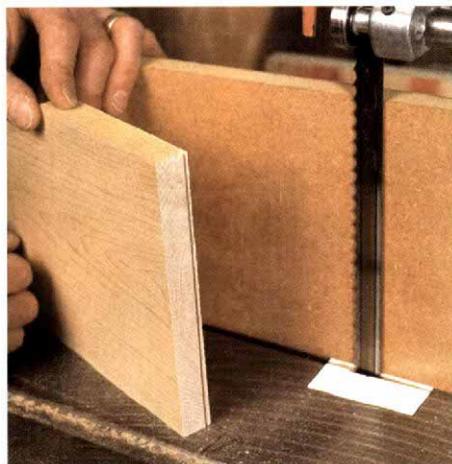
I readjust the guides every time I cut veneer. Begin by loosening and backing off all of the guides. Then raise the post for the upper set of guides, locking it in at the correct height for cutting the veneer. Set the bearing guides to within a dollar bill's thickness from the blade and pull them forward until they are just behind the blade's gullets. Then set the thrust bearing so there is no more than a small space between it and the back of the blade.

Now set the fence to accommodate the drift of the blade (see the photos above). If this step is skipped or done improperly, you can be certain to have a bad day at the veneer-cutting shop. Begin with a piece of scrap about 2 ft. long. Mark a pencil line parallel to one long edge. Then feed the scrap into the blade freehand, cutting right on the line for about 6 in. or 8 in. Stop cutting and hold the scrap in place. Then place the body of a bevel gauge against the front edge of the bandsaw table and push the gauge's blade against the scrap. Lock the bevel gauge to record the angle at which this blade wants to cut—the drift of the blade.

Now bring the fence over to within a veneer's thickness of the blade, using the

bevel gauge to establish the proper fence angle. At this point, I adjust the bar my fence rides on until the fence is at the drift angle. If you don't have a sliding fence or one that can be modified to pivot, you can cut veneer just as well with a shopmade, clamped-on fence.

To check the drift angle, run a scrap through the saw while holding it against the fence. If the scrap pulls away from the fence or requires excessive force to feed, check the drift setting again.



Kerf test. To cut uniform sheets of veneer, the fence must be parallel with the blade. If the two are not parallel (as in the text), tilt the table until they are.

Finally, check that the blade is parallel to the fence. Using your veneer plank or a wide piece of scrap, cut a kerf about 1/16 in. deep (see the photo below). If the cut is off from top to bottom, adjust the tilt of the table to correct it. Don't worry about whether or not the blade is square to the table. When the blade and fence are parallel, it won't matter if the table is slightly out of square with the blade.

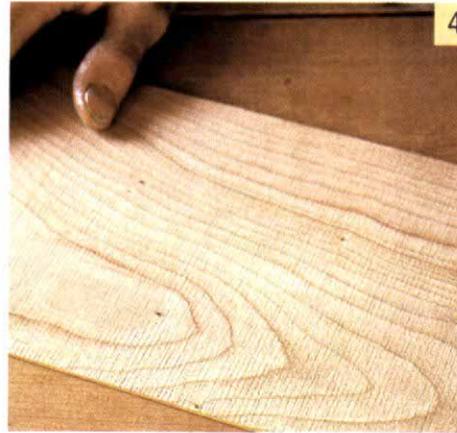
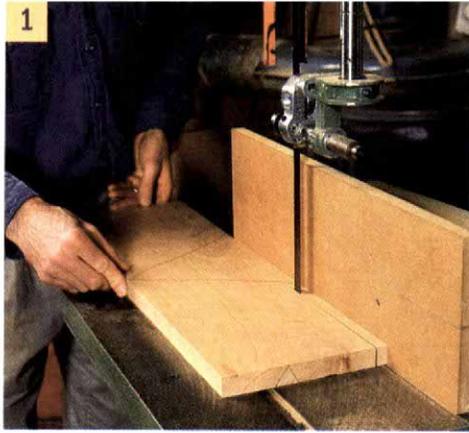
Preparing the plank

To prepare a plank for being sawn into veneer, mill both faces and both edges. When you cut the plank to length, add at least several inches to the longest veneers that you'll need. You may need the extra length later, if you put the veneers through the planer. When you cut the plank to width, however, stay as close as possible to the finished width of the veneer. If you plan to make lipping or molding or other solid wood parts to match the veneer, cut them from the plank before you rip the plank to the veneer width. When you are ready to cut the veneers, mark a triangle on the end or edge of the plank so that the sliced veneers can easily be restacked in order.

At the same time you are machining your plank for the show veneer, prepare material to use as a backer on the veneered panels. To keep the panels balanced, it is

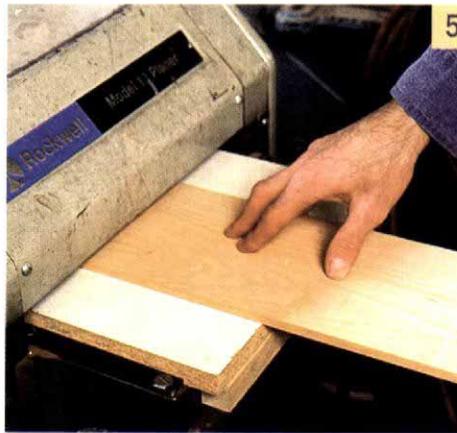
SLOW AND STEADY RESAWING

A little off the sides. To make veneered panels with perfectly matched edge-banding, rip strips off each side of the plank before slicing it into veneer.



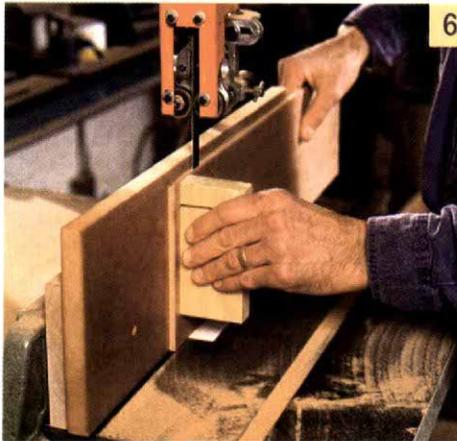
Keep an eye on the saw marks. If the marks from the band-saw are even across the width of the piece, the cutting is going well. If the marks are heavier or lighter at the middle, the blade is bowing in the cut. Try a slower feed rate or a sharper blade.

Support ahead of the cut. Use a slow, steady feed rate when slicing veneer, keeping the plank tight to the fence with pressure applied just ahead of the cut.



Smoothing between slices. Joint or plane the sawn face of the plank after every slice. Use the jointer when the plank is still thick, switch to the planer for safety when the plank approaches $\frac{1}{2}$ in. or so. A piece of melamine laid across the planer's bed rollers keeps the thin material from getting chewed.

Go to the back of the bandsaw. It is safest to move around to the outfeed side of the saw and pull the plank through the end of the cut.



Slicing it fine. It is dangerous to have your fingers near the blade when slicing the last sheets of veneer. Use a block to support the cut.

important that this backer material be the same thickness as the face veneer and of a compatible species.

Slicing the veneer

Set the fence for the desired veneer thickness. I shoot for $\frac{1}{16}$ in., and I can usually get six leaves of veneer from a $\frac{4}{4}$ board. Feed the wood slowly and continuously, supporting the work just in front of the cut. Develop the habit of pushing the stock through the end of the cut with your hand

on the face of the board rather than behind it. And try to develop a feel for the rate that the blade wants to take the stock. When the blade is cutting just what it can handle, it will barely touch the guide bearings. And when the blade is tracking properly in the cut, the back edge of the blade will be centered in the kerf. If you are cutting a lot of material, it is likely that the feed rate will slow as the blade begins to dull.

When the plank gets thin, be extra careful not to run your hand beside the blade. If

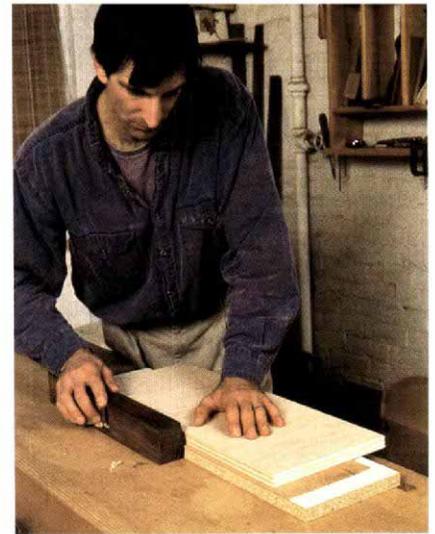
the stock tapers in its thickness at all, there is potential for the blade to run out the side of the board. For safety, when I'm cutting the last few slices of veneer in a plank, I keep my hands well away from the blade by moving to the outfeed side of the table and pulling the material through the end of the cut. I use a block of scrap to keep the workpiece tight to the fence.

After cutting each slice of veneer, make a trip to the jointer and smooth the sawn face of the plank. I have my jointer set up just to

THICK VENEER PLANES EASILY



Smoothing after sawing. Double-stick tape keeps a sheet of veneer still for a quick smoothing with handplanes. At $\frac{1}{16}$ in. thick, the veneer can be planed and worked like solid wood.



Shoot the edges. A stroke or two with a jointer plane prepares the veneers to be joined edge to edge.



Taping under way. Short pieces of veneer tape are moistened and stretched across the joint; when they dry, they pull the joint tight. A lengthwise strip of tape reinforces the temporary joint.

the right of the bandsaw to make this procedure easy. Don't worry about removing all traces of the bandsaw. Jointing enough to remove most of the bandsaw marks will be more than sufficient for a good glue joint. And the bandsaw marks that remain will tell you how you are cutting. Too fast a feed rate will often show up as bandsaw marks that are deeper or shallower in the middle of the board than at the edges, because the blade is distorting during the cut. As the plank becomes thinner, it will not be practical to joint the face. Instead I run it through the planer between slices.

Keep the veneer pieces in order as they come off the saw and cover them with a board to keep them from cupping. On the last cut I am sometimes splitting the board

into two equal veneer slices. This is a very satisfying way to complete the cutting.

Surfacing the sheets of veneer

A well-bandsawn surface is quite acceptable to glue down, but if the thickness of the veneer varies much, it will have to be surfaced. There are several ways to do this.

If the pieces are manageable in size and number, they can be smoothed with a handplane. To hold the veneer still while you are planing, use a piece of MDF with a lip at the end to serve as a stop, or hold the veneer down with very thin, double-sided tape. Don't use too much tape—just a few small pieces—or it will be impossible to get up. A scraper or scraper plane can also be used for this type of surfacing.

Often I will surface the veneer by running it through the planer. But this procedure is not for the fainthearted. I have seen beautiful leaves of veneer go in one end of the planer and come out as crumbs. Check and make adjustments on the planer as carefully as you did on the bandsaw. Pay particular attention to the setting of the pressure bar. I use a piece of melamine to cover the bed rollers to keep the veneer from bending up into the cutterhead. Do not wax this surface because it will transfer to the surface of the veneer.

Use a slow feed rate and sneak up on the thickness very slowly. Feed the pieces one at a time, and be sure that one piece comes out before the next goes in to prevent one from riding up on another. If a piece begins

to chip, stop immediately. Sometimes the failure is a result of feed rate or feed direction and can be solved by reversing the pieces. Sometimes the ends of a slice are damaged in the planer, but the rest of the piece is fine. Hence the need for extra length. It is difficult to predict how a batch of veneer will fare in the planer, so it is always good to cut a couple of extra leaves of veneer so that one can be a test piece.

A third alternative for surfacing shop-sawn veneer is an abrasive planer or wide-belt sander. These work very well on veneer, and it is often possible to rent time on one of these machines as more shops are using them. Before committing your precious veneer to be sanded, however, make sure that the operator knows what you are after and that the machine can handle the job. I'd rather ruin the material myself than pay someone to ruin it for me.

Working with shop-sawn veneer

Now the anxious moments are behind, and the fun begins. If you are laying up broad surfaces from two or more leaves of veneer, play around with different combinations. You might try slip-matches, book-matches or reverse matches.

I edge-joint the veneer by lifting it off the surface of the bench on a piece of plywood and shooting the edges with a hand-plane. I make sure the joint is tight along its entire length.

Some people edge-glue adjacent pieces of shop-sawn veneer before gluing them to the substrate. This works fine, but I don't think it is necessary. I simply hold the unglued joint together with veneer tape the way I would with commercial veneer. I use a heavy-weight tape, running it across the joint in several places, then down the entire length of the joint. The veneer tape goes on wet and shrinks slightly as it dries, pulling the joint tight.

On a typical panel, I glue the face veneer and backing veneer at the same time. I roll yellow glue onto the substrate, put the veneers in place and slide the whole package into the vacuum press. Before I had a vacuum press, I used cauls and deep-reach clamps to accomplish the glue-up, and that worked perfectly well, too. The veneer tape comes off easily with a hand scraper after the panel comes out of the press. □

Timothy Coleman makes custom furniture in Greenfield, Mass.

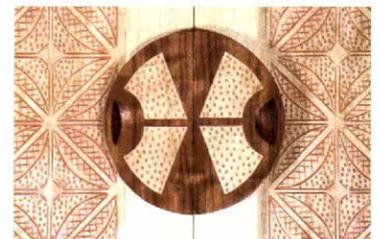


THE VERSATILITY OF VENEER

Marquetry. The drawer fronts and the upper cabinet face frame of this hutch are marquetry compositions in shop-cut maple and mahogany veneer. The rest of the hutch is solid mahogany.



Parquetry. The design on this cabinet is composed with pieces of cherry and morado sliced $\frac{1}{16}$ in. thick and fitted together on a plywood substrate like tiles. On the upper doors, the edges of the tiles were chamfered, creating a handsome reveal.



Low-relief carving. Shop-sawn veneer is thick enough to accept light carved decoration, as on this cabinet in maple and bubinga. The design on the veneered door panels is a combination of lines carved with a V-tool and a background punched with steel stamps. The relieved areas were dyed with tinted shellac.