



Circular Sunburst Veneer Top

This adaptable method relies on fundamental veneering

BY BRUCE EATON

The few pieces of furniture I've made for our home have been relatively simple and quick to build. A couple of years ago, we moved into a new home and after a year or so without a coffee table, I made one based loosely on Art Deco tables with radially matched veneer and raised edging (I describe how to make the edging in this issue's Master Class, pp. 74–80). Since making that first table in black limba wood, I've made a couple more versions, refining my process while testing out the look in cherry and in oak, which I'm using here.

Adaptability is one of the strengths of this sunburst design. You can vary the num-

ber of segments in the burst, the type of wood, and the diameter of the top, while still applying the methods I describe in this article. Even if you change the type of burst pattern—I use a radial burst—your approach will need only a slight tweak.

Drawing helps with angles

The veneer pattern is built up from a bunch of wedge-shaped segments that make a circle, which means angles—but don't let that scare you. A tried-and-true method for tackling angles without guesswork is to use a drawing. With one in hand, there's no math involved since you can just set a bevel gauge to the drawing.

To start, draw the tabletop on MDF or paper and use a compass to step off the segments around the perimeter. The top veneer comes together in two half circles, so you're shooting for an even number of segments. To make them narrow enough to fit within the width of my quartersawn veneer, I ended up with 26 segments. You may require a different number of them.

Start with the segments

I like to use quartersawn veneer with a consistent grain. This lets me slip-match my segments for a radial burst. If you book-match your veneer with matching grain at each joint, purchase enough sheets (plus

Create the segments



Trace the segment pattern onto a short stack of veneer. Eaton makes a template of the pattern, a wedge cut to the correct angle. He uses it for fast, repetitive marking on three to four pieces of veneer at a time.



Saw through the stack using a straightedge and backer board. The straightedge is a piece of MDF that Eaton holds in place by hand. The backer board protects both his bench and the bottom face of the veneer.

13.9°
for 26
segments



General rule:
 $360^\circ \div \text{number of segments}$



Joint the edges using a shooting board with an angled fence. This quick-to-make jig holds the segments at the appropriate angle for truing up their edges so they're glue-ready later. To hold the segments flat to the jig, Eaton tops them with a wedge of $\frac{3}{4}$ -in. MDF.



a couple extra) so you can use the same part of each sheet for each segment. With my table's slip-match and straight grain, matching is almost guaranteed.

My tool kit for creating the segments is minimal. To lay them out, I use a wedge of plywood trimmed to their size. To cut them out, I grab a veneer saw and a couple of important helpers. First is a straightedge that keeps my saw in line and the veneer flat. Second is a backer board, which helps protect the bottom face of the veneer.

Tape the veneer twice

With the pieces cut out, joint their edges and assemble them into half circles. I joint



Mark mating edges. Eaton's table ended up with 26 segments, all of which need to get glued together. To keep the parts in order, he labeled each edge.

Masking tape in back for now

Tape the backs of the segments to make a half circle. Stretch masking tape across each joint to keep it closed. Add segments until you have two halves. Add extra tape at the middle of the semicircle to stabilize the segments' fragile tips.



Clamp the halves together, then joint them simultaneously. Clamp the halves between strips of MDF to keep them rigid. You may need to plane from both ends because the grain reverses at the center.



them using a handplane and a dedicated shooting board that has a fence screwed down at the angle of the segments.

To create the half circles, first use masking tape to attach the segments on their back faces. Later you'll add proper veneer tape to the front, but the masking tape holds the assembly together until then. Stretch the masking tape over the joints to keep the seams closed. Before taping the two half circles together, saw off any extra from each semicircle and joint their mating edges. Add masking tape to the back when you're finished to complete the circle.

With the backside of the veneer taped, flip the circle over and apply veneer tape to the front. Avoid layering the tape more than two or three high or you risk denting the veneer when you glue it to the substrate. Afterward, remove the masking tape from the back.

You'll need a balancing veneer on the top's underside to prevent warping. In this case, I used the same veneer, and the same jointing and taping techniques that I used for the top layer. But for simplicity's sake I joined the pieces in rectangular strips rather than a sunburst and created a square rather than a circle.

Glue to the substrate

For the top's core, I used a square of $\frac{3}{4}$ -in. MDF sized slightly larger than the circular veneer layout. You can press both layers of veneer at the same time or you can do

Veneer tape in front for glue-up



Tape the halves in back to hold the circle together. Now jointed, the halves are ready for masking tape on their back faces. As before, pull the tape taut across the seam.

one side for an hour or so, remove the assembly from the press, and then veneer the other side.

I use a vacuum bag for adhering the veneer; if you don't have a vacuum bag, consider using clamps, platens, and cauls. It's important to stay organized and follow a set of rehearsed steps to minimize mistakes. When I put the whole assembly—the substrate and two layers of veneer—in the press, the top veneer is facedown against the melamine platen. The bottom veneer is faceup under a mesh or caul, which also distributes the load from the bag; without one, you're more likely to get wrinkles or bubbles because the bag did not solidly contact the entire veneer.

I first apply glue to the top of the substrate, spreading it with a roller. You want



Apply veneer tape to the front. Stretch multiple short pieces across each joint and then one long piece along its length. To minimize denting, don't stack more than two or three strips of tape. Shorten or stagger the tape toward the center. Finally, remove the masking tape from the back.

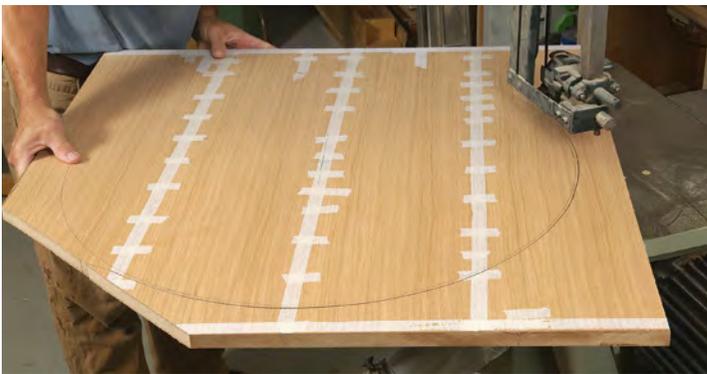


Glue the veneer to the substrate. Eaton uses a square of $\frac{3}{4}$ -in. MDF a couple inches larger than the diameter of the veneer circle. He applies glue evenly to the substrate only, not the veneer.

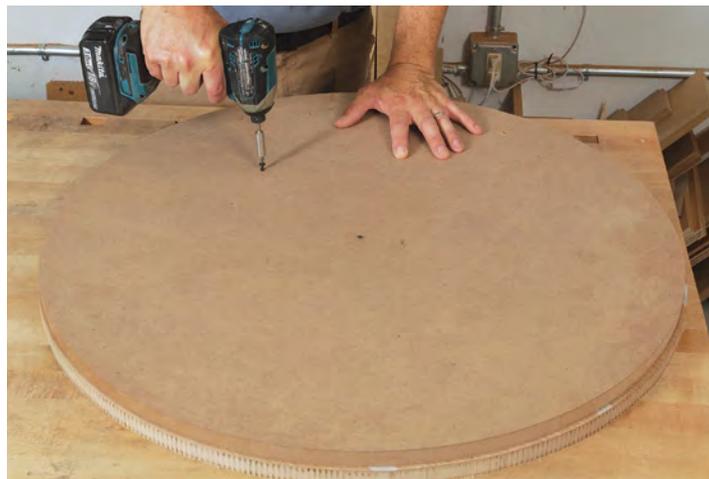


Painter's tape keeps the veneer from slipping in the vacuum press. The tape holds the layers in place as you slide the panel into the press and also secures the package as the press tightens.

Shape the circular top



Bandsaw the circle. Stay $\frac{1}{16}$ in. from your line. Eaton traces the circle on the bottom balancing veneer, where he can use a trammel point without fear of the centerpoint showing on the final table.



Secure a circle template in two places. Screwing it to the top's underside in two places keeps the MDF from spinning, which could spoil the top if the center screw wasn't in the exact center.



Pattern-route the top to shape. To keep the piece secure, Eaton uses beefy clamps and hangs only a bit of the top off the bench. This means he can rout only a little before having to rotate the top, but it keeps the setup vibration-free.



to spread the glue so it's just opaque and even across the entire panel. If it pools or you're getting big ridges, push or roll some glue off the panel to thin it out. Too much glue can bleed through, wrinkle, or bubble the veneer. After spreading the glue, position the veneer. Then repeat for the bottom face.

Before placing the assembly in the vacuum press, I use gentle painter's tape to keep the veneer from sliding around on the MDF. It comes off easily after glue-up. The same goes for any glue that gets on the bag or platen.

Cut the top to shape

After the glue dries, you can cut and rout the top into a circle. I rough in the shape at the bandsaw before finishing with a circular MDF template. To make the template, I used a router on a trammel.

To shape the panel, I first transfer the sunburst's center to the panel's underside. Then I use a compass or trammel to draw the circle on the underside to keep from marring the sunburst. After rough cutting the top, center and screw the MDF pattern to the underside and flush-cut with a router.

Finally, you can remove the veneer tape. I spray the tape to remove it, working in small areas to avoid dampening the panel more than necessary. You may need to spray each area more than once.

Now you can prep the panel for your preferred finish. □

Remove the veneer tape. Spritz it with water, letting it soak in for a minute or so, and then use a card scraper to gently lift the tape off. Typically the long piece will come off with the first spritz and then a second spritz is needed to get the smaller pieces. Sand the top, being careful not to sand through the veneer.

Bruce Eaton is a furniture maker in Boxford, Mass.