

ASK ANY WOODWORKER WHAT THE MOST versatile tool in the shop is and you're guaranteed to create a heated discussion. For me, the question has always been an easy one: It's the band saw. A band saw's abilities are limited to cutting, of course, but it can make just about any kind of cut any other saw can. You can both rip and do crosscuts, like on a table saw. Also like a table saw you can resaw stock, but in much wider capacities and with a smaller kerf for less waste. For quick cutoff chores, I find my band

saw faster and less trouble than setting up either my miter saw or table saw.

But its real value is cutting curves. Sure, a jigsaw can do that, but a band saw handles thicker stock, and makes cleaner cuts no jigsaw can match. And when it comes to making intricate curves that can be reassembled with almost no hint of a cut line, you won't find another cutting tool that does a better job.

I've used a band saw several times throughout this book, but mostly for its basic cutting ability. But

for this project, the band saw can create every bit of stock needed for a beautiful box from a single block of wood as well as create the curved interior. Once assembled, the box will have almost-invisible joints, and the grain will flow smoothly across the entire surface.

You've probably seen band saw boxes that are intricately shaped with continuous grain, and flowing curves as the dominant feature. I like those and have made them before, but for this project I wanted to create something with very straight lines but still with that

continuous grain. And since the wood I'd selected for this project — a slab of spalted maple burl — I wanted the grain to be dominant, not the curves.



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Construction

I love working with burl. It's a very stable material when well seasoned that's adaptable to oddly shaped work, and its no-two-are-like uniqueness can't be beat. Add the contrasting swirls of spalting and the beauty is unmatched even before you start working with it. However, spalting (which is created by a wood fungus) can lead to softness in areas of even the hardest wood — it can give the wood a “punk” consistency — so chose carefully. In Fig. 1, you can see how I've cut my workpiece from an area of the burl near the edges of the spalting. The wood is strongest here, plus I like how the spalting is delineated in the center of the workpiece as it blends into the non-spalted portions.

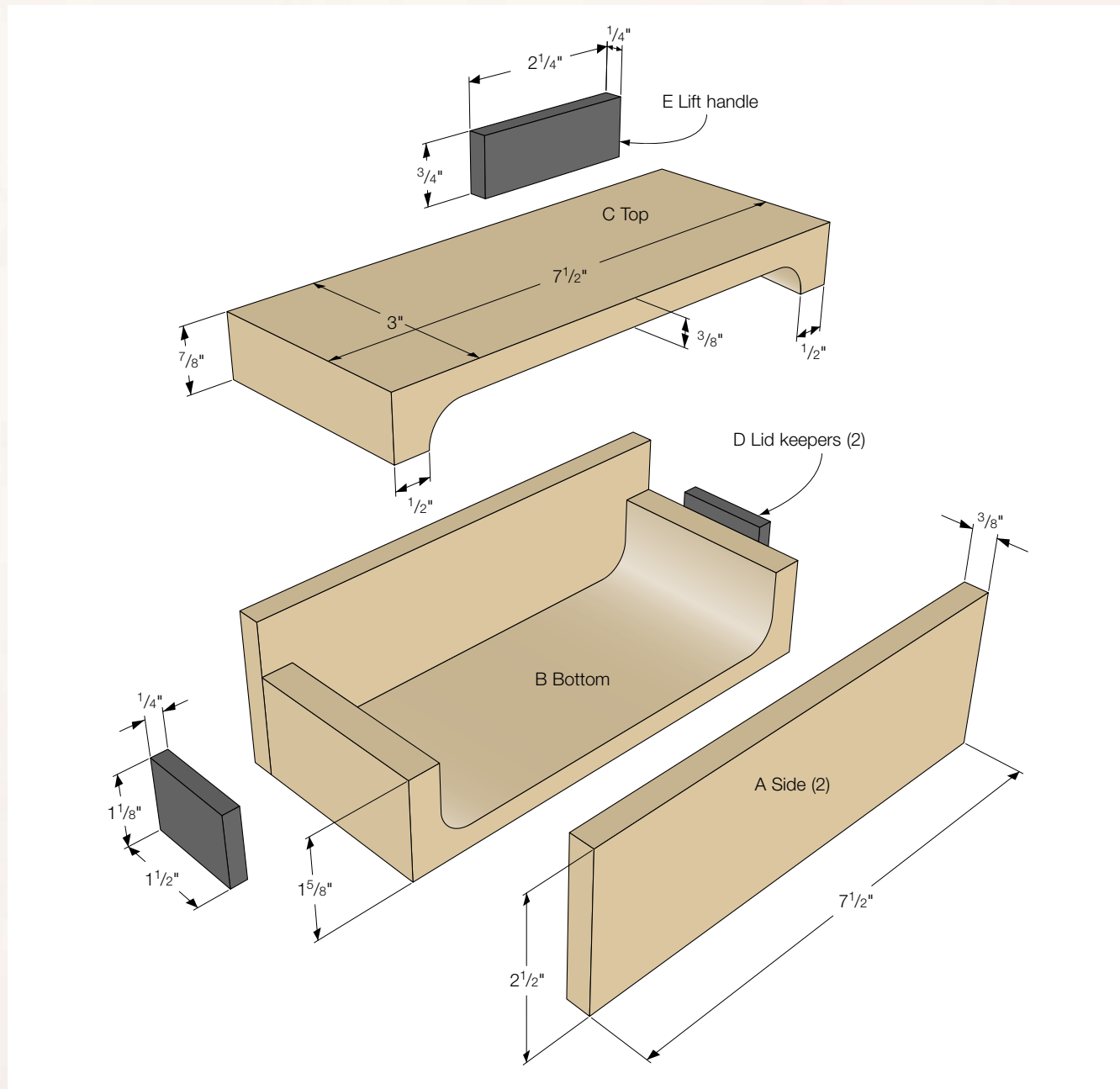
When you've cut out your workpiece, thoroughly square it up. The jointer works well for this (Fig. 2). Once square and true, give the workpiece a good sanding — remember this is what your finished box will look like, so now's the time to make sure you're pleased with the overall workpiece itself before cutting it into your working components.

Building a band saw box is a process of first disassembling the main workpiece. Begin by slicing off the two box sides, as in Fig. 3. The



BAND SAW BOX • INCHES (MILLIMETERS)

REFERENCE	QUANTITY	PART	STOCK	THICKNESS (mm)	WIDTH (mm)	LENGTH (mm)	COMMENTS
A	2	sides	spalted maple burl	3/8 (10)	2 1/2 (64)	7 1/2 (191)	A, B & C are cut from single block
B	1	bottom	spalted maple burl	1 5/8 (41)	3 (76)	7 1/2 (191)	Thickness is overall height.
C	1	top	spalted maple burl	7/8 (22)	3 (76)	7 1/2 (191)	Thickness is overall height.
D	2	lid keepers	ebony	1/4 (6)	1 1/8 (29)	1 1/2 (38)	
E	1	lift handle	ebony	3/8 (10)	3/4 (19)	2 1/4 (57)	



value of the band saw becomes apparent immediately with these first cuts: The kerf is so thin, the grain and spalting patterns are largely uninterrupted. Make these cuts slowly and carefully — you want them as straight as possible so as not to enlarge the kerf when cleaning up the cut faces. I installed a new blade just before starting this project, so my cuts were already pretty clean, but it's still necessary to completely flatten and smooth the mating surfaces. Do this carefully and slowly, too; you want to remove only as much material as needed for a smooth face. For the flattest sanding possible, note that in Fig. 4 I'm sliding the pieces on

full sheet of sandpaper on the flattest spot in my shop, the cast iron wing of my table saw. With the inside faces of the sides smooth, do the same to exposed faces of the cutout center portion.

Transfer the cutout pattern to the sides of the center portion. This cutout forms the box interior, and when separated will create both the box lid and bottom. Begin the cut by slicing straight through the center on the lid lines on each end to make two easier-to-handle workpieces, and then cut out the waste (Fig. 5). In Fig. 6 you can see how these cuts compare when complete. You can see a bit of burning on





the wood surface in this photo. Maple is very hard, and making slow cuts through it — especially curved cuts — can do this. Not to worry, we'll remove this shortly. I should note here, too, that I referred to this center cut-out portion earlier as "waste." I misspoke. There's really no such thing as waste or scrap in my shop. That thin cutout portion will eventually adorn a small drawer front on a future project, while that thicker portion is the perfect size for a set of spalted-burl wine stoppers.

Now, let's clean up the rough inner surface created when cutting out the center. Temporarily reassemble the two pieces with packing tape, probably the second most-useful tool in the shop after the band saw. (Fig. 7) With the pieces connected, head to the spindle sander to smooth out what will be the inside surfaces of the box as in Fig. 8. When done, separate the two pieces and give each a thorough sanding on the inside curved surface by hand with increasingly finer grits of sandpaper. Remember that this is the box interior and it's now essentially complete, so this step is actually finish sanding.



Here comes the fun part, reassembling the box. Apply glue to the edges of the lower portion of the inner piece, and glue the sides back on. Line everything up carefully and clamp up the assembly till dry. (Fig. 9) It's important when clamping that you watch the workpieces carefully to be sure they don't slide out of alignment. Although slight movement could easily be fixed when we sand the exterior of the box later, any slipping will ruin the continuous flow of the grain and spaltling. If you notice any slipping at all, correct it now and reseat the clamps.

When the box is dry, put on the lid and secure it with packing tape. No matter how well the glue-up went, you'll still need to smooth those glue joints to help them disappear. This is easily done by sanding the ends of the box on the disc sander as I'm doing in Fig. 10, or with hand sanding. Do the same on the underside of the box, although I recommend doing this the same way we did the sides earlier, with a sheet of sandpaper on the table saw wing to ensure a perfectly flat bottom. Finally, do a thorough hand sanding of the entire



outside of the box with increasing grits. Maple burl sands very smooth, and when done carefully you can achieve a glasslike surface even before applying any kind of finish.

To make the lid keepers and handle, cut a few rectangles of ebony to the dimensions on the Cut List, and give them a thorough sanding. (Fig. 11) Ebony shines up beautifully when sanded to high grits, and in this photo I've started with 400-grit, moved up to 600 and finished with 800. Even before assembly, those pieces gleam.

Ebony sometimes doesn't take regular woodworking glues well, so we'll attach these pieces with epoxy. Score the gluing surface on both the ebony and the box itself before applying the glue, which will add some mechanical strength to the glue bond. In Fig. 12, I'm using the tip of a small utility knife to scratch grid lines into the glue surface. Glue the pieces in place until the epoxy cures, securing them with clamps as needed. (Fig. 13)

Those lid keepers won't experience much stress, plus they have a fairly large gluing area for their size



so those won't need any reinforcement. That's just the opposite for the lift handle, though, which has only a narrow edge for gluing. Strengthen it by drilling a pair of 1/8" holes up into the handle from the underside of the lid. Epoxy short lengths of hardwood dowel into the holes, then trim them flush on the underside when the glue cures, as in Fig. 14. Sand the dowels smooth.

The hardness of maple burl means that it doesn't need a lot of protection when it comes to a final finish, plus sand-

ing to high grits already gave it a bit of sheen, so a plain boiled linseed oil finish might be a good choice. I wanted just a bit more shine, so I've chosen a tung oil finish. As you can see in Fig. 15, when the oil hits the surface the exquisite burl figuring almost literally explodes out of the wood. It's easy to see why burl is a favorite choice to use for my best boxes.

