Woodsmith PLANS

RIBBON HANDLE BOX

FEATURE PROJECT

RIBBON HANDLE BOX

This imaginative design not only makes a wonderful gift, it's also a great way to build your woodworking skills.

I think of building boxes as a fundamental woodworking skill. After all, the techniques used are also key to many larger furniture projects. And when you consider the smaller scale of a box and the added scrutiny a small project receives from the viewer, your woodworking skills, and attention to detail, will be put to the test.

Boxes are also perfect projects for using up small pieces of special or exotic wood. You probably have plenty of these cutoffs left over from larger projects.

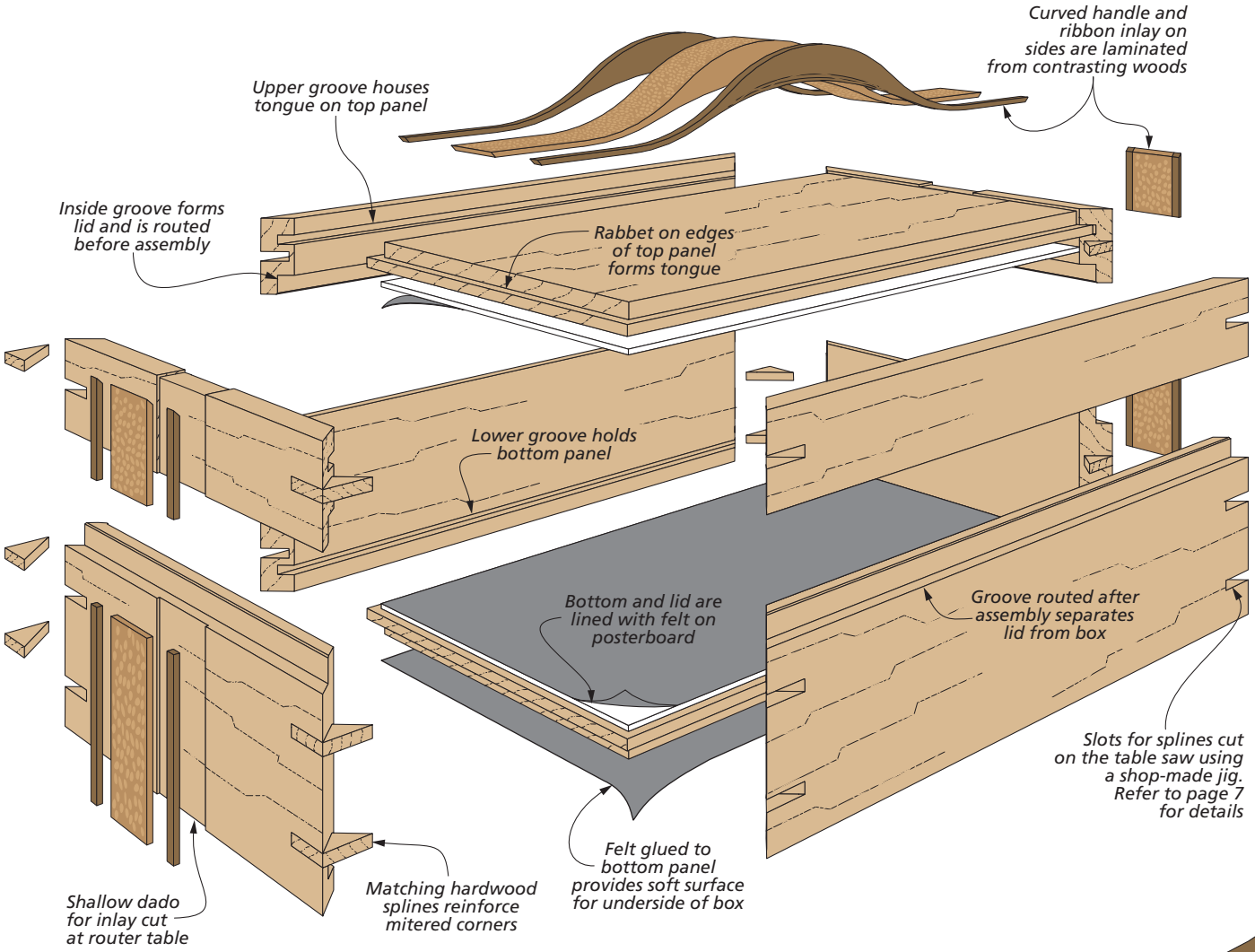
The ribbon handle box shown here is an excellent skill builder. The basic box is built using splined miters, and a special technique helps you create a lipped, fitted lid. But the most eye-catching characteristic of the box is its interesting inlay and handle.

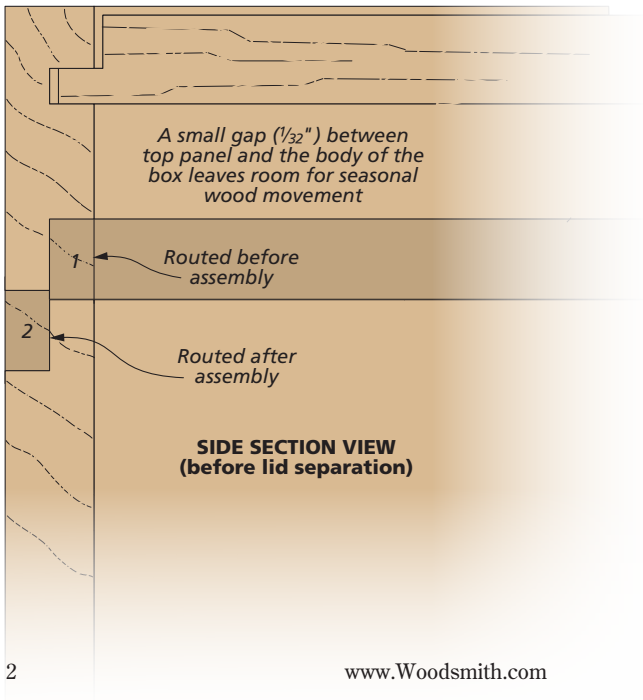
This box makes a great gift in and of itself. Or if you're really feeling generous, you could use it as the "wrapping" for an even more special present.

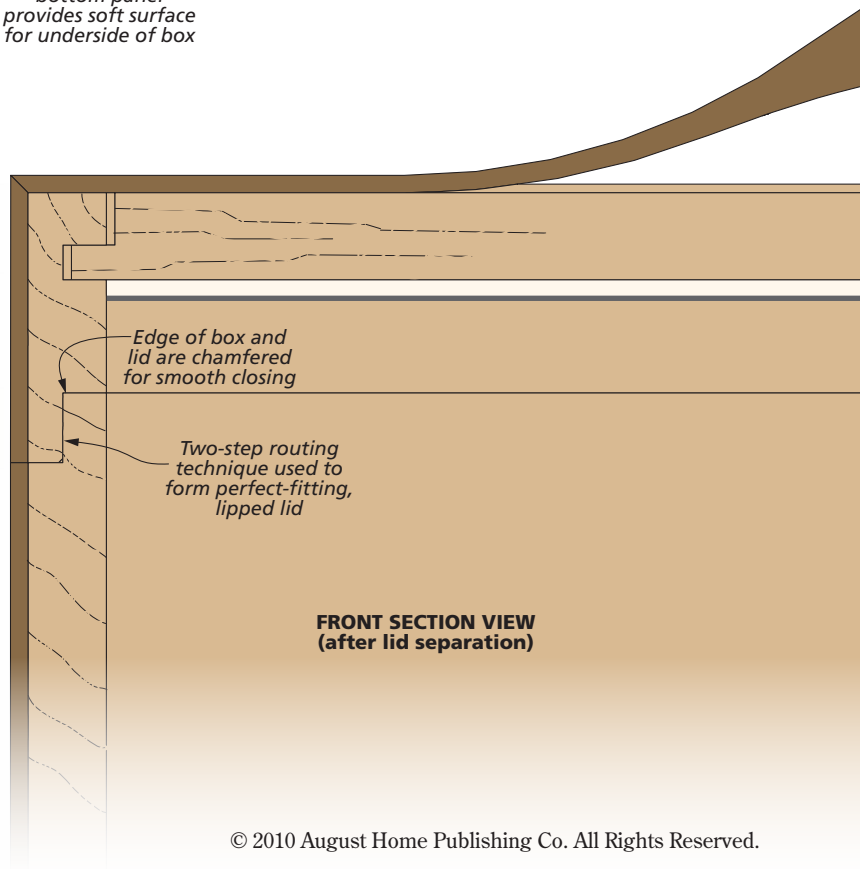
The "ribbon handle" box, named for the distinctive handle and inlay on the sides, is made from ash with lacewood and wenge used for the details.

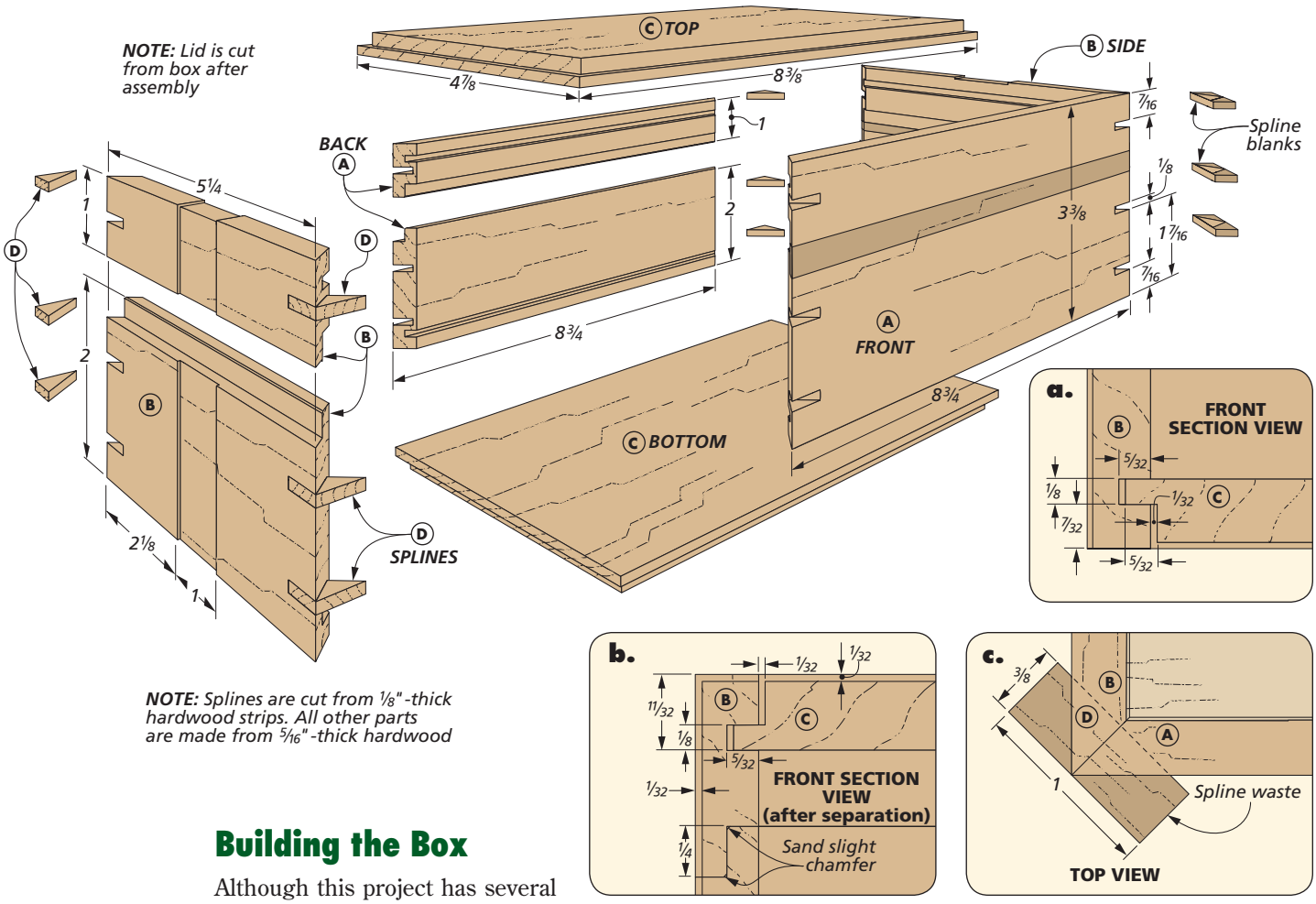
Construction Details

Overall Dimensions: $8^{13}/_{16}$" x $5^{1}/_{4}$" x $4^{1}/_{32}$"









NOTE: Splines are cut from 1/8"-thick hardwood strips. All other parts are made from 5/16"-thick hardwood

Building the Box

Although this project has several unique details, building the box itself is fairly straightforward. You'll assemble the basic box, add splines across the mitered corners, and then rout a channel in the sides for the inlay. Then I'll show you the technique for separating the lid portion from the box.

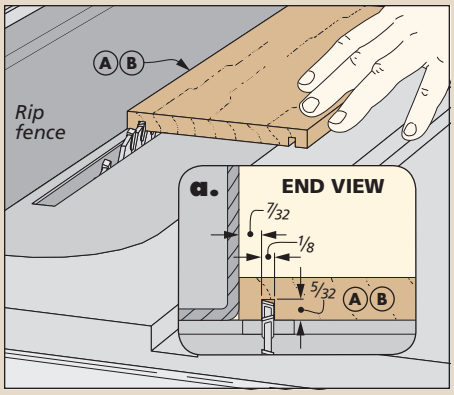
FRONT, BACK & SIDES. As I just mentioned, you'll begin by assembling a box. The front, back, and sides all require 5/16"-thick hardwood. I started with 1/2"-thick stock and planed it to final thickness. After cutting the pieces to width and rough length, I cut the grooves for the top and bottom, as you can see in the box below.

Now move to the router table and install a 3/8"-dia. straight bit. If you rout the lid groove with a straight bit, you'll get a smoother finished cut than you'd get with a dado blade. Later, you'll rout a groove on the outside of the box to form the mating bottom half. But for now, miter all four workpieces to final length.

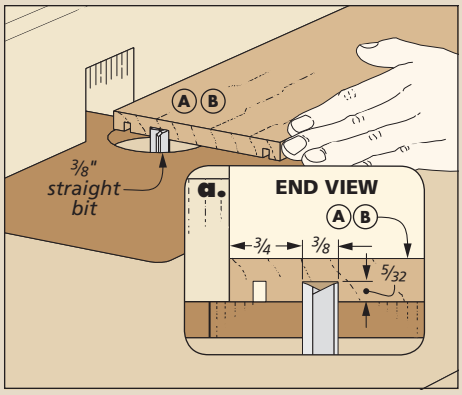
TOP & BOTTOM. The top and bottom are rabbeted to fit into the grooves you cut earlier. You can start by cutting them to final size. Then, cut the rabbets for a snug fit in the grooves. As you test the fit, note that the top and bottom are slightly recessed and that there is a small gap to allow for wood movement. You can see what I mean in details 'a' and 'b' above.

ASSEMBLY. The step-by-step drawings on the following page walk you through the process of assembling the box and completing the details. As you see in Step 1, I taped the miter

HOW-TO: CUT & ROUT GROOVES



Upper & Lower Grooves. *Cut the grooves for the top and bottom panels using a standard blade in the table saw.*



Inside Lid Groove. *At the router table, install a straight bit and rout the groove that will form the shoulder of the lid.*

joints to keep things in place while I added clamping pressure. A band clamp is perfect for this application, but regular clamps will work fine as well. It's also a good idea to label the top edge of the box so you'll be able to orient it properly later.

To reinforce the miter joints, all you'll need to do is add splines in each corner. With a simple spline cutting jig, like the one shown in Step 2, you can make short work of cutting these slots. Just cut the top and bottom slot by flipping the workpiece in the jig — keeping the spacing even. The middle slot is not centered on the sides as you might expect. Instead, it's offset to allow for the groove you'll rout later when you separate the lid.

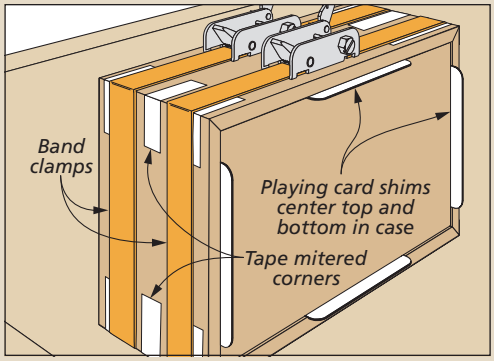
After gluing the splines in the slots, trim the "ears" off the ends. A flush-cut saw is the ideal tool for this task, as you see in Step 4. Then plane or sand the surface smooth.

ROUT THE CHANNEL. Now it's time to head over to the router table and rout the channel for the handle and inlays, as shown in Step 5. I started with the sides first, and then I routed the top edge of the sides.

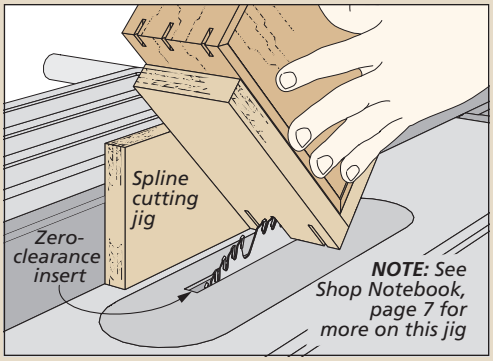
It's a good idea to make a couple of test cuts with a straight bit to dial in the 1/32" bit height. Then, set the fence and make your first cut. Next, flip the box side-for-side and make another cut. This technique will ensure the channel is perfectly centered on the box. Move the fence and rout away the remaining waste until you end up with a 1"-wide channel in both sides, including the top edges of the sides.

SEPARATING THE LID. At this point, you're ready to rout the groove that will separate the lid. As you can see in Step 6, you'll need to set the bit just a hair below final depth to avoid cutting all the way through. Then, simply place the top against the fence to rout all four sides. This technique will leave the lid attached to the box while you complete the cut. I used a utility knife to cut through the thin membrane and separate the lid (Step 7). Finally, use a sanding block to fine-tune the fit of the lid, as shown in Step 8.

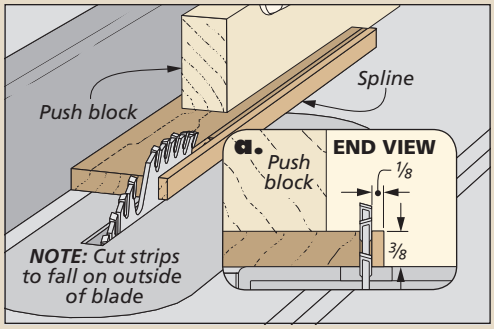
HOW-TO: ASSEMBLE THE BOX



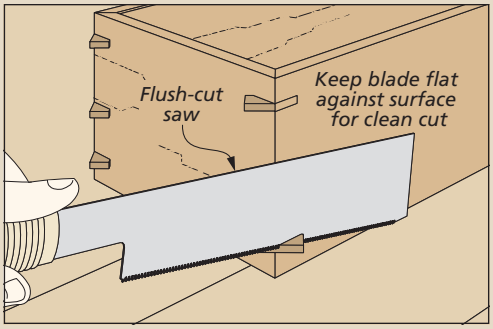
1 *Assemble the miter joints with glue, tape, and band clamps. Use playing cards as shims to maintain an even gap.*



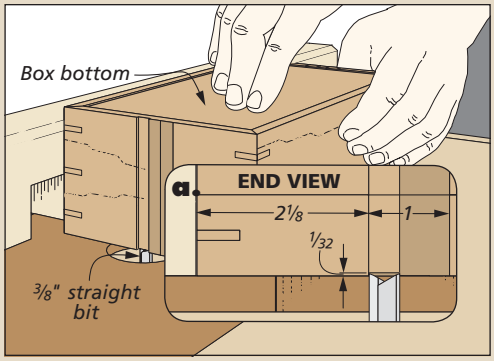
2 *I used a simple, shop-made jig to hold the box at a 45° angle while cutting the slots for the splines.*



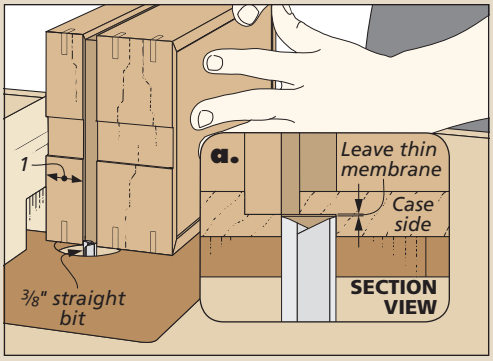
3 *Using a push block to safely hold the blank, rip several 1/8"-thick strips to use for splines. Then slip them into place.*



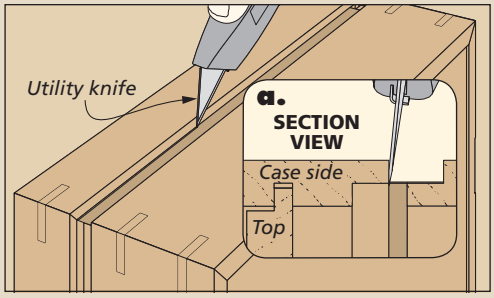
4 *A Japanese flush-cut saw works great for trimming the waste from the splines. Then plane or sand the surface.*



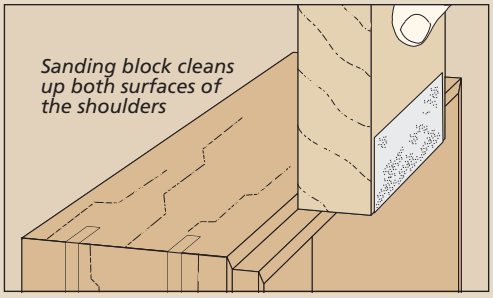
5 *Rout the channel for the inlay on the sides first, and then rout the top edge of the sides to hold the end of the handle.*



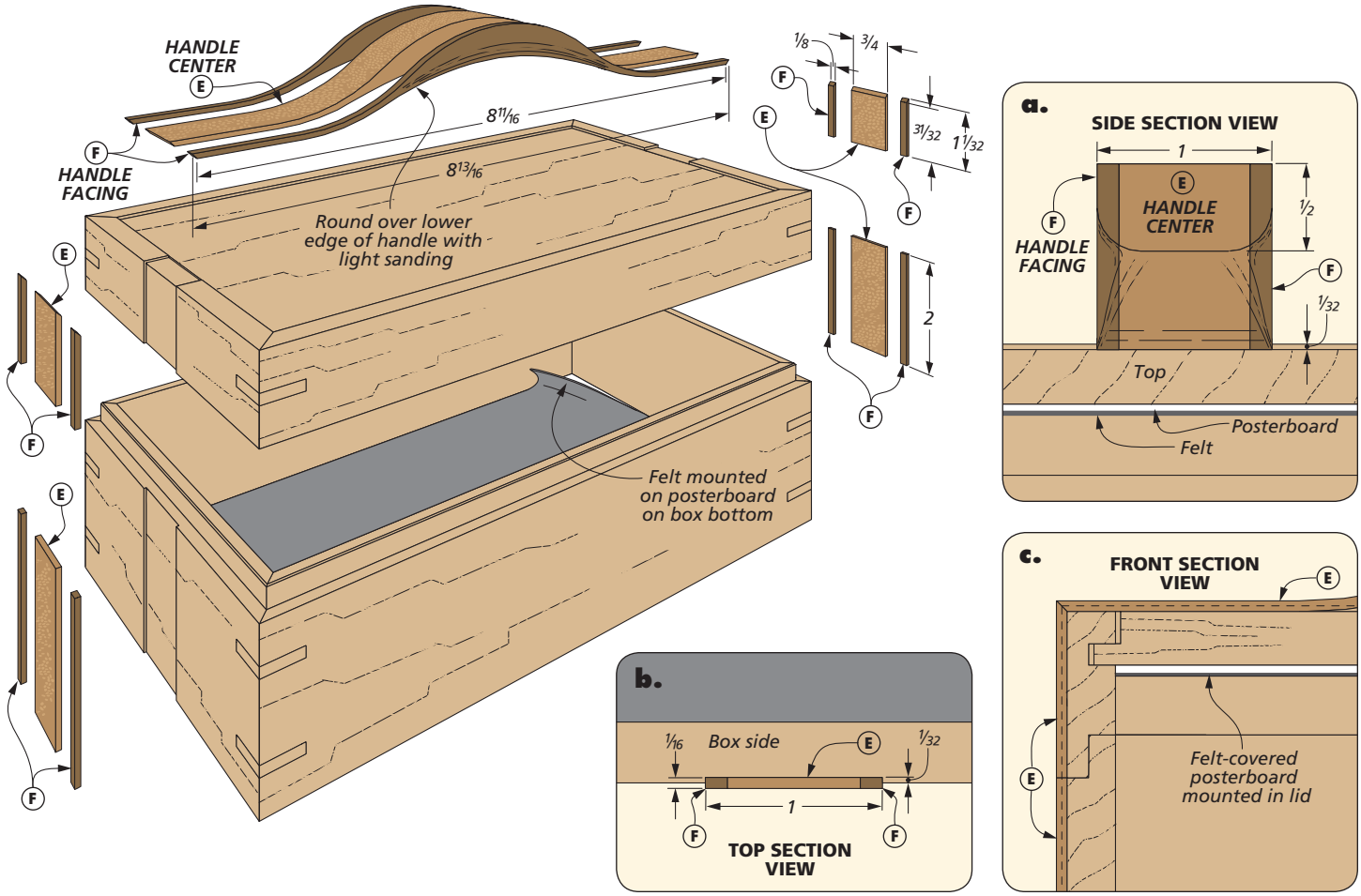
6 *To separate the lid from the body of the box, set the router bit height just a hair lower than half the stock thickness.*



7 *There should be a very thin strip remaining after routing the groove. Simply cut through it with a utility knife.*



8 *Wrap a piece of 220-grit sandpaper over a square-sided block to clean up the shoulders for a good fit.*



Adding the Ribbon Handle

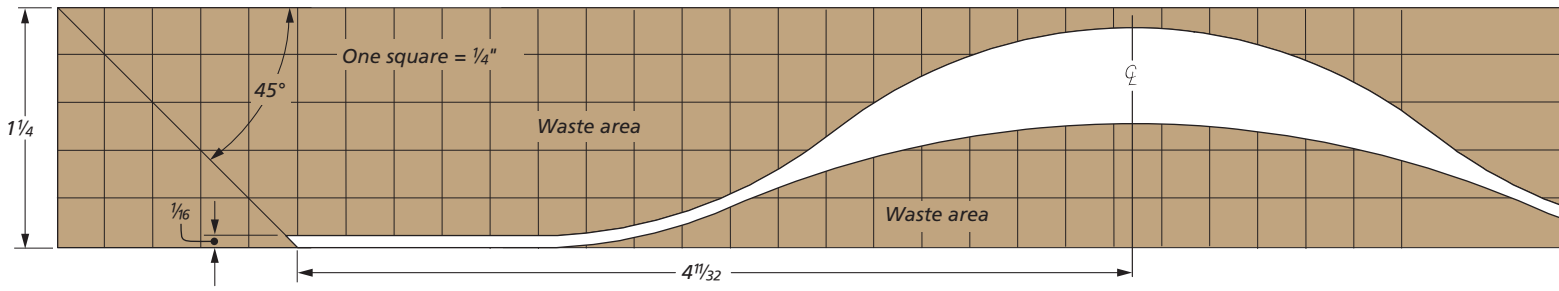
With the basic box assembled and sanded, it's time to turn your attention to the handle. The "ribbon" handle runs across the top with a matching inlay going down both sides. As you can see in the main drawing above, it's a lamination of two different hardwoods.

While the handle is glued directly to the top, the ends of the handle and the side ribbons fit into the channel on the sides. The thin strips that run down the sides might look difficult to laminate, but don't worry, you'll cut all the pieces from a single, larger laminated blank.

GLUE UP THE LAMINATED BLANK. The lacewood and wenge combined with the gentle curve in the handle really give the box a distinctive look. You may want to experiment with different woods from your own scrap pile to find a combination that complements the stock you used for the box. You'll need a ¾"-thick piece for the center and two ⅛"-thick pieces for the facing. Just keep in mind that the thickness of the finished blank needs to match the channel you routed earlier. It's a good idea to glue up an oversized blank (about 16" long) so you can trim it to final size after cleaning up the glue squeezeout.

I started by cutting the handle pieces to size. Then, I glued them together, adding a piece of tape along one edge. The tape helps prevent the pieces from shifting under

FULL-SIZE HANDLE PATTERN



clamping pressure. Another benefit is that it forces most of the glue to squeeze out on the opposite edge. That makes cleaning it up much easier. It's also a good idea to use a caul on both sides of the blank when you add the clamps.

CUTTING THE HANDLE. Once the glue has dried, you'll need to clean up the laminated blank. You can use a block plane to smooth the edge you taped earlier (Figure 1). Then, head to the table saw and trim the opposite edge square and parallel.

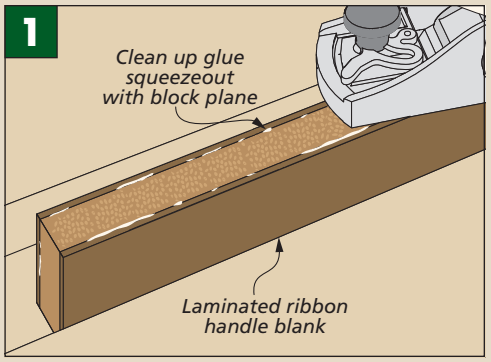
Next, make a copy of the pattern on the previous page and attach it to the blank with spray adhesive. The pattern makes it easy to cut the blank to shape and position the miter cuts on each end. I cut the miters first to guarantee a good fit for the joints where the handle will meet the side strips. It would be very difficult to accurately miter the thin pieces separately.

After mitering the ends, use the pattern to cut out the shape of the handle at the band saw. Clean up the surfaces with a sanding drum (Figures 3 and 4). Then, round over the sharp edges by hand sanding to provide a comfortable grip.

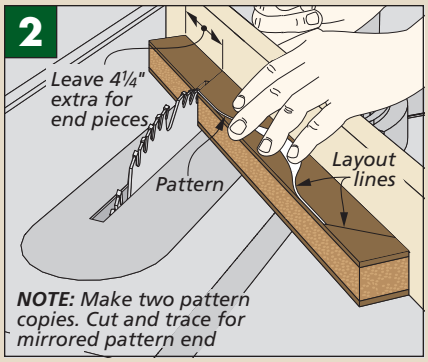
The cutoff from the handle blank is used to make the side ribbons. Figure 5 shows how you can get all four pieces from the blank, using the mitered ends to mate with the handle. After cutting them out, sand or scrape them to remove the saw marks and cut them to final length.

All that remains to complete the box is to glue the pieces in place (Figure 6). Then cover some posterboard with felt and line the box with it.

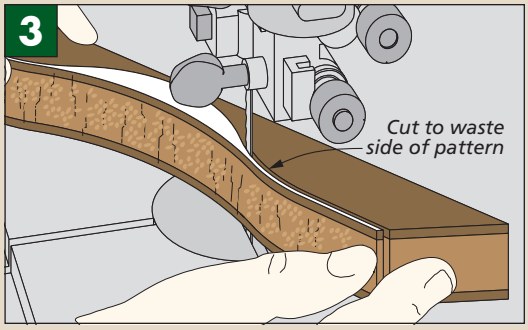
HOW-TO: MAKE THE LAMINATED HANDLE



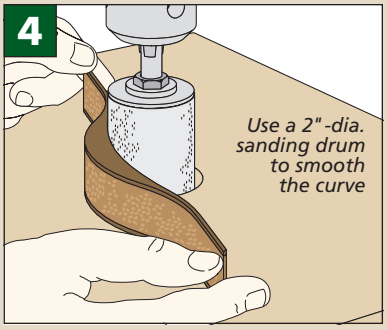
Cleaning up the Blank. *After removing the tape from the edge of the blank, a couple passes with a block plane will clean up the edge.*



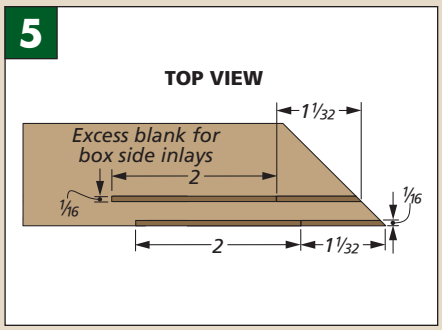
Cut the Miters. *With the pattern glued to the blank, you can easily line up the miter cuts on each end.*



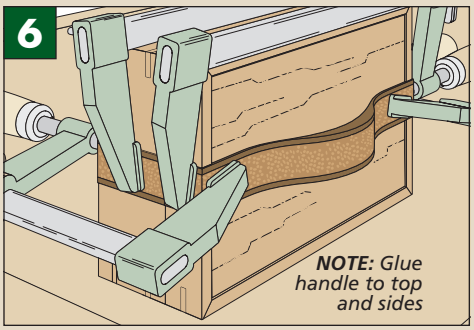
Cutting the Curved Handle. *Cut the handle to rough shape at the band saw, making sure to keep the cut on the waste side of the layout line.*



Drum Sanding. *A sanding drum makes short work of smoothing the saw marks and shaping the handle.*



Cutting Side Inlays*. Using the excess from the laminated blank, rip the thin strips for the side inlays at the band saw.*



Assembly. *Since the inlays fit in the channel you routed earlier, assembly is just a matter of adding glue and gentle clamping pressure.*

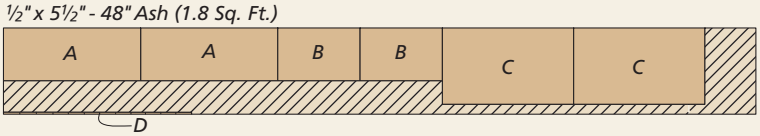
MATERIALS & HARDWARE

A	Front/Back (2)	5/16 x 3 3/8 - 8 3/4
B	Sides (2)	5/16 x 3 3/8 - 5 1/4
C	Top/Bottom (2)	5/16 x 4 7/8 - 8 3/8
D	Splines (12)	1/8 x 3/4 - 1
E	Handle Blank Center (1)	3/4 x 1 1/4 - 16 rgh.
F	Handle Blank Facing (2)	1/8 x 1 1/4 - 16 rgh.

(2) Posterboard Backing (Cut to Fit)
(3) Black Felt (Cut to Fit)

CUTTING DIAGRAM

½" x 5½" - 48" Ash (1.8 Sq. Ft.)



NOTE: *A, B, and C are planed to 5/16" thick*

Also needed: Stock for handle blank (parts E & F)

SHOP NOTEBOOK

Splined Miters

The ribbon handle box is assembled with miter joints. To strengthen these joints, I added splines. The splines create additional gluing surface and help prevent the miter joints from opening up over time.

The hardwood splines are glued into kerfs cut across the miter joints. Fortunately, these can be cut easily on the table saw using the simple jig shown here. The jig is nothing more than an auxiliary fence with a couple of supports that cradle the box at a 45° angle as you cut the kerfs.

The jig simply rides against the rip fence of your table saw, as shown in the drawing at right. This way, you can use the rip fence to position the kerfs on the box. You can cut the two outside kerfs using the same rip fence setup simply by flipping the box between cuts. To cut the middle kerf, you'll have to reposition the fence.