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Classic Project

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- Construction drawings and related photos.
- Tips to help you complete the project and become a better woodworker.

Magazine Slipcases



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WJC182

MAGAZINE SLIPCASES

STORE YOUR JOURNALS IN STYLE

Some magazines are purchased with the full knowledge that within a month or two they'll find their way to the local landfill, or perhaps more appropriately, the recycling bin. But a few very special magazines—like *The Woodworker's Journal*—are information sources that you buy and save. After all, with the cost of good plans today, throwing away your copies of *The Woodworker's Journal* is like throwing money in the trash.

Here, finally, is an elegant and functional way to store your magazines. Obviously, the slipcases shown are sized to fit *The Woodworker's Journal*. However, you could easily alter the overall dimensions to fit other publications that you'd like to keep. Our step-by-step illustrations show the Super Box Joint Jig (page 44) being used to cut the box joints.

Don't Count Pins!

In a perfect world, if you're cutting a $\frac{1}{4}$ in. pin, over the $11\frac{3}{4}$ in. width of stock (which translates into the slip cases $11\frac{3}{4}$ in. height), you'll end up with exactly 47 pins. But, as we all know, this is hardly a perfect world. Even a slight deviation in your pin size, compounded over a width as large as $11\frac{3}{4}$ in., can add up to a substantial difference. The important thing to keep in

mind is not to count the pins, but to start out with stock that's the designated $11\frac{3}{4}$ in. width, and cut as many pins as needed to cover the entire width.

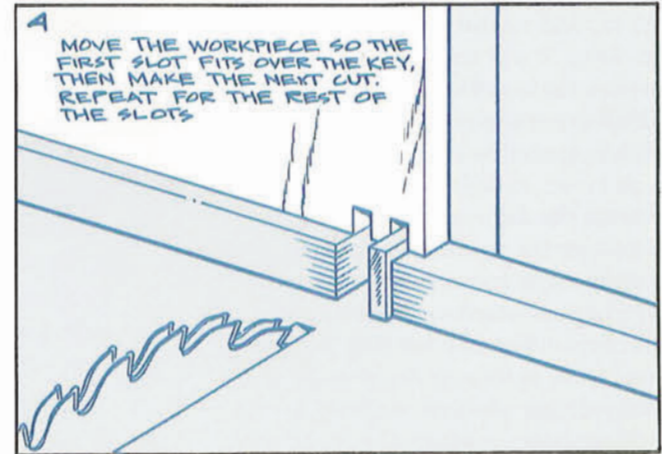
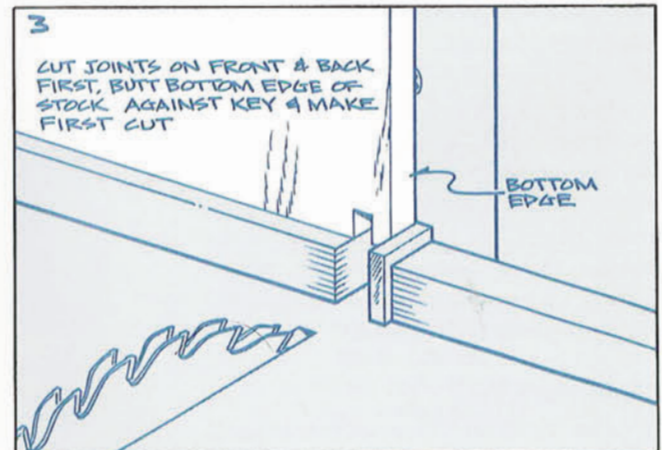
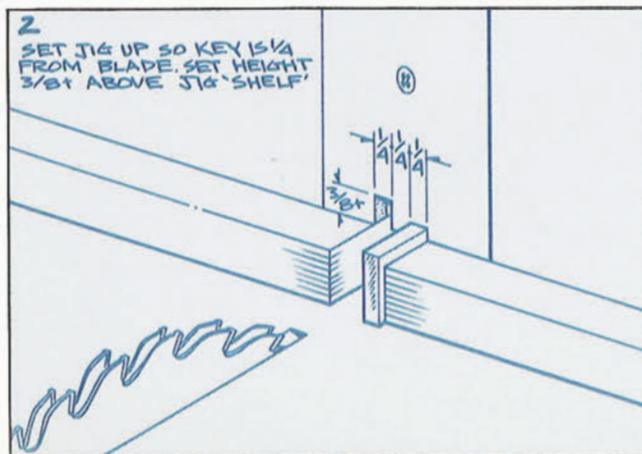
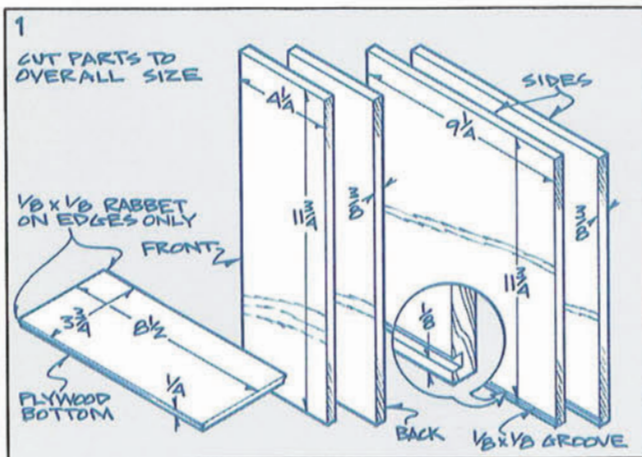
Start Right

As you'll note, the slip cases are made from $\frac{3}{8}$ in. thick, $11\frac{3}{4}$ in. wide oak. You'll probably need to edge-glue several narrower boards to obtain the required $11\frac{3}{4}$ in. width (we did) although you can use a single width if you have that wide a board available.

If you don't own a thickness planer, or don't want to bother with edge gluing, a kit is available that includes the $\frac{3}{8}$ in. thick by $11\frac{3}{4}$ in. wide oak for the sides and ends, plus a $\frac{1}{4}$ in. thick piece of $3\frac{3}{4}$ in. wide by $8\frac{1}{2}$ in. long plywood for the bottom (see Kit Source). If you'd like to order kits for three or more slip cases, there's a significant price break.

Step 1: Cut your parts to size, and establish a $\frac{1}{8}$ in. by $\frac{1}{8}$ in. groove in the sides and $\frac{1}{8}$ in. by $\frac{1}{8}$ in. rabbet on the edges of the bottom. Note that the groove in the sides is $\frac{1}{8}$ in. up from the bottom edge.

Step 2: It's important to set your box joint jig up right. Mount the $\frac{1}{4}$ in. brass key, and adjust the jig so the key is $\frac{1}{4}$

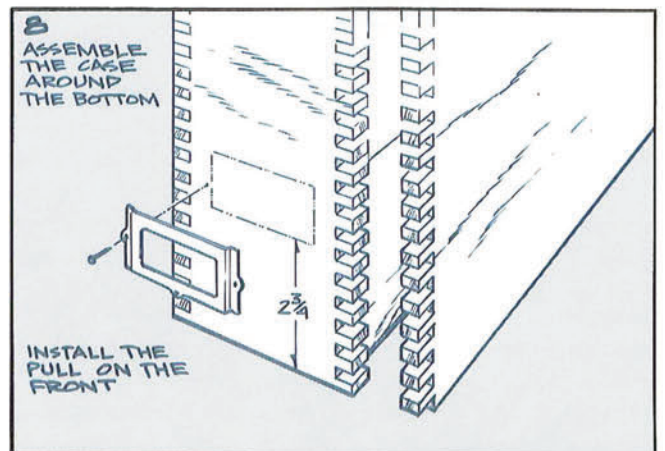
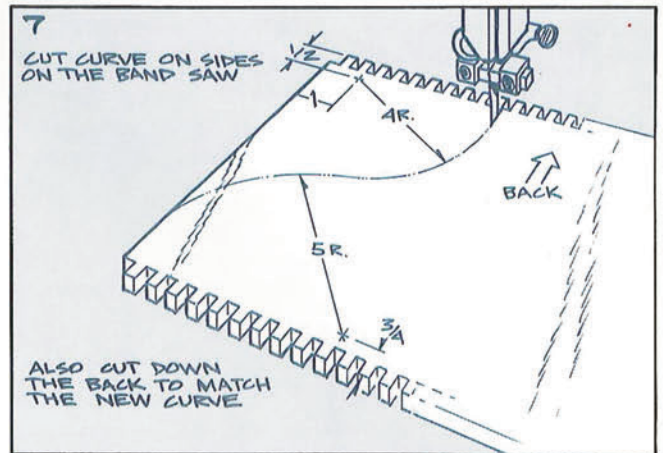
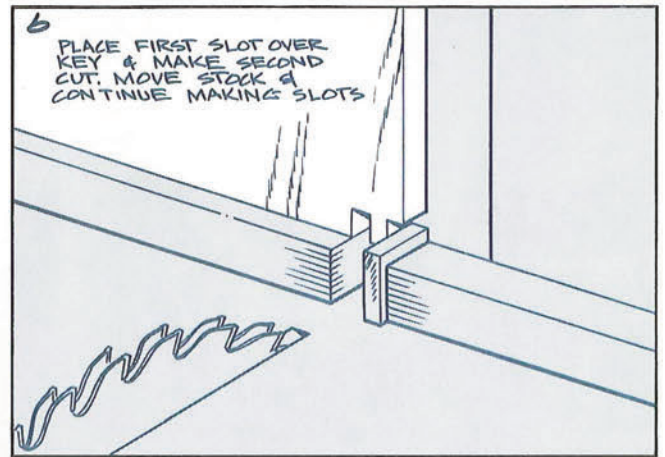
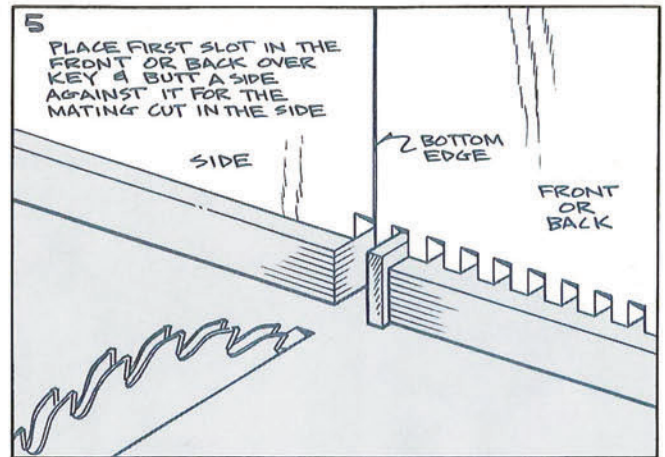




in. from the blade. Note that the blade height should be set to make a cut just a hair deeper than the $\frac{3}{8}$ in. stock thickness.

Steps 3 & 4: In order to insure that the groove you cut in the sides for the bottom doesn't show, you'll need to start the joint on the bottom edge of the front and back. Make the first cut with the stock butted against the key, then move the stock so the first cut is over the key and repeat. Once the box joint is cut on one end, flip the stock and do the same on the opposite end. **Steps 5 & 6:** To start the mating joint on the side, locate the front or back so the first cut is over the key, butt the side against the bottom edge, and make the initial slot in the side. Move the workpiece so the slot is over the key to make the next cut, and so on. Flip the workpiece and repeat the procedure on the opposite end.

Steps 7 & 8: Lay out and cut the profile on the sides. You can do this before assembling the slip cases or after, but the important thing is to lay out the profile so the cut doesn't split one of the pins. Assemble the front, back and sides around the bottom (a small brush is a handy way to spread the glue on the box joints). Once the glue has dried, sand to flush the joint on all four sides, stain and finish to suit (we used an oak stain and a water-based polyurethane), and add the combination pull/card holder.





Super Box Joint Jig

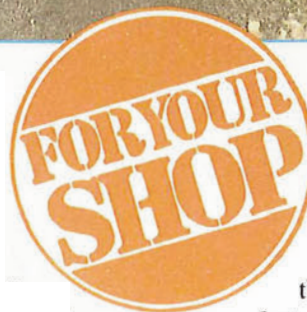
Accuracy and
versatility in one
compact package



Box joints—also called finger-joints—are a wonderfully strong and versatile joint. Often called the machine equivalent of the dovetail joint, the box joint is used for everything from pencil boxes to drawers and case construction. Once your table saw is set up properly, the actual work of cutting the joint goes very quickly.

Our Super Box Joint Jig combines versatility with accuracy and ease of use. Using a system of either single or multiple brass keys, the jig will cut box joints in $\frac{1}{16}$ in. increments from $\frac{1}{8}$ in. all the way up to $1\frac{5}{16}$ in.—a range that encompasses nearly every possible use.

Our super jig is a quantum leap away from the typical shop-made single-purpose box joint jig, where you made a wooden key for a specific size finger, glued it into a board, and then screwed the board to the miter gauge. With this old-fashioned jig, it was critical to locate



the board so the key was exactly one key width away from the blade. There was no built-in adjustability in the jig, and if the initial set-up wasn't perfect, your only option was removing the screws and relocating the jig. Given the problems this can entail, plus the difficulties that arise when the wooden key begins to fray or wear, it's not hard to understand why so many hobby woodworkers seem to shy away from the box joint.

The Super Box Joint Jig takes much of the fuss out of the set up process. But even more important, by including a

bottom surface on which to rest the stock, it eliminates the common problem of uneven cuts that can result if your saw's throat plate isn't perfectly flat and level with the saw table. Whether you're familiar with box joints, and have always wished for a do-it-all jig, or if you've never cut a box joint before, but would like to, this jig is for you.

Before You Start

If you've never cut box joints before, we've included a step-by-step illustrated instruction in the Magazine Slipcases project, on page 48. Before you start building your jig, however, you'll need to take a close look at your table saw. The jig shown in the exploded view and in the elevations is for use on a table saw

where the stack dado blades mount on the arbor from the left, such as on the Delta Unisaw. For saws that mount blades from the right, such as many Sears saws, you'll probably want to build the jig as a mirror reverse, as shown in the Fig. 1 illustration. This way, when using a stack dado, the blades will stack in the right direction relative

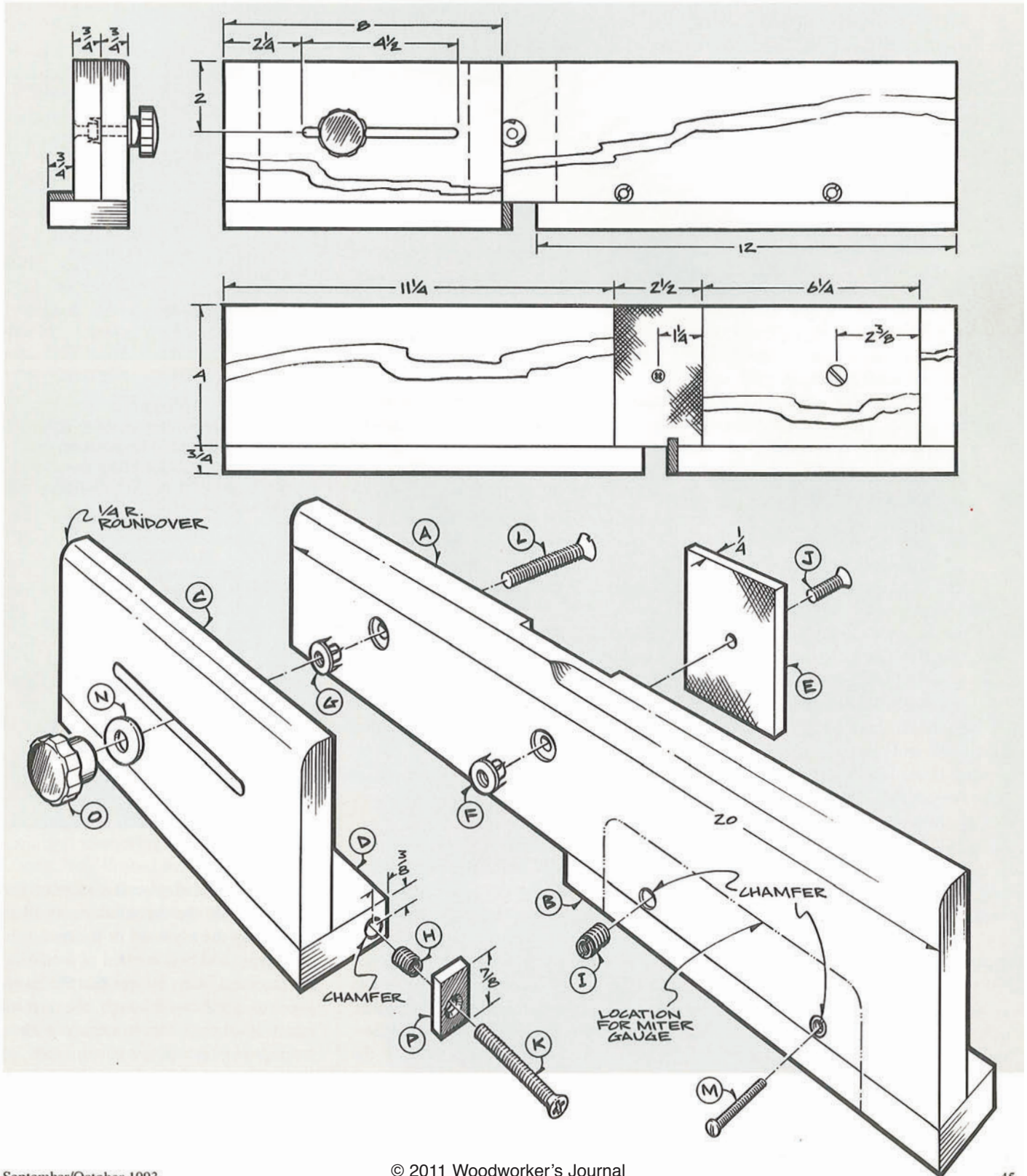
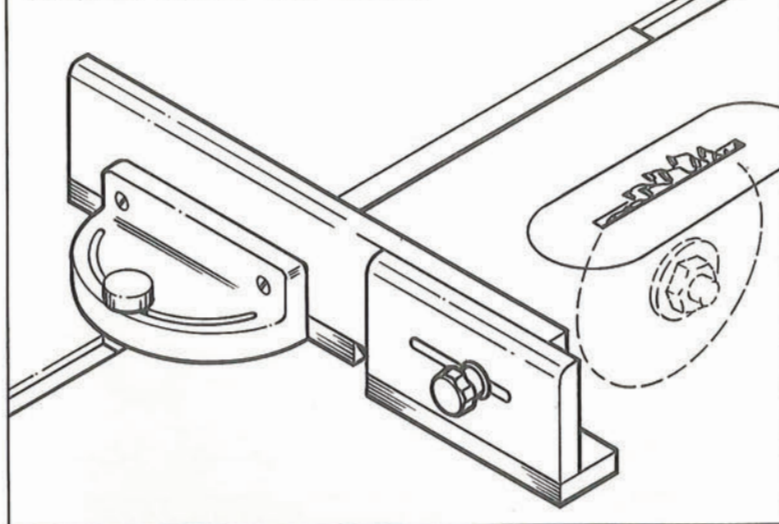


FIG. 1

JIG SET UP FOR USING
STACK DADO HEAD ON SAWS
WHERE BLADES MOUNT ON THE
ARBOR FROM THE RIGHT



to the jig. This distinction isn't critical if you use a wobble dado. Moreover, whether you use a stack or wobble dado, and no matter which version you build or how the blades mount on your saw arbor, the jig will still work fine. You may also want to build the mirror-reverse version if you prefer working with the miter gauge to the left, instead of to the right of the blade.

Cut The Plywood Parts

Use only a top quality plywood for this jig. Avoid using construction-grade plywoods, which often contain voids and may not be dimensionally consistent. Rip about 30 in. of $\frac{3}{4}$ in. thick plywood to a 4 in. width, then crosscut to yield the back (A) and adjustable back (C). Cut the bottom (B) and adjustable bottom (D) to size, and make as many Masonite backing plates (E) as you'll likely need.

Using multiple passes with the dado head, establish the $2\frac{1}{2}$ in. wide recess in the back for the replaceable backing plates. Be sure to set your dado head to a cut depth that's equal to the thickness of the Masonite (although the Bill of Materials shows the Masonite as $\frac{1}{4}$ in. thick, actual thickness is a little under $\frac{1}{4}$ in.). Test-fit the backing plates to make certain they are flush with the face of the back. If your recess is cut a little too deep, add a paper or thin cardboard shim under the backing plate to bring it up flush.

Locate the $4\frac{1}{2}$ in. long slot in the adjustable back, drill a pair of $\frac{5}{16}$ in. diameter holes to establish the slot ends, then use multiple passes on the router table with a $\frac{5}{16}$ in. diameter straight cutter to establish this slot. Set up stops on the router table and make the slot by raising the router bit about $\frac{1}{8}$ in. for each subsequent pass.

Next, glue the bottom to the back, and the adjustable bottom to the adjustable back. No mechanical fasteners are needed, but you may want to add several countersunk screws up through the respective bottoms and into the backs, to prevent slippage as the glue dries. Once the glue has dried, use the router table and a $\frac{1}{4}$ in. radius round-over bit to apply the radius to the top edges of the back and the adjustable back. Note that the radius on the back is about 12 in. long. These roundovers just make the jig a little easier to handle.

Drill for Hardware

Using either the drill press, or a hand-held drill, equipped with a $\frac{1}{4}$ in. diameter bit, drill a $1\frac{1}{2}$ in. deep hole for the 8-32 threaded insert (H) that accepts the flat head (Phillips) machine screw (K) that mounts the brass keys (P). Note that this hole is located on-center $\frac{3}{8}$ in. from the edge of the adjustable bottom. Use a countersink bit to chamfer the edge of the hole, then mount the insert using a ratchet and an 8-32 bolt. The extra depth of the hole is needed to allow for the length of the key mounting

Bill of Materials

(all dimensions actual)

Part	Description	Size	No. Req'd.
Plywood/Masonite □			
A	Back	$\frac{3}{4}$ x 4 x 20	1
B	Bottom	$\frac{3}{4}$ x $1\frac{1}{2}$ x 12	1
C	Adj. Back	$\frac{3}{4}$ x 4 x 8	1
D	Adj. Bottom	$\frac{3}{4}$ x $2\frac{1}{4}$ x 8	1
E	Backing Plate	$\frac{1}{4}$ x $2\frac{1}{2}$ x 4 as req'd	
Hardware □			
F	T-Nut	8-32	1
G	T-Nut	$\frac{1}{4}$ -20	1
H	Threaded Insert	8-32	1
I	Threaded Insert	10-32	2
J	F.H. Machine Screw	8-32 x $\frac{5}{8}$ (Phillips)	1
K	F.H. Machine Screw	8-32 x $1\frac{1}{2}$ (Phillips)	1
L	F.H. Machine Screw	$\frac{1}{4}$ -20 x $1\frac{3}{4}$	1
M	R.H. Machine Screw	10-32 x $1\frac{1}{2}$	2
N	Washer	$\frac{3}{4}$ dia.	1
O	Plastic Knob	$1\frac{3}{8}$ dia.	1
P	Brass Key Set	$\frac{1}{16}$ x $\frac{3}{4}$ x $\frac{7}{8}$ $\frac{1}{8}$ x $\frac{3}{4}$ x $\frac{7}{8}$ $\frac{1}{4}$ x $\frac{3}{4}$ x $\frac{7}{8}$ $\frac{3}{8}$ x $\frac{3}{4}$ x $\frac{7}{8}$ $\frac{1}{2}$ x $\frac{3}{4}$ x $\frac{7}{8}$	1 of each

screw. The chamfer on the edge of the hole prevents the threaded insert from splintering the plywood as it enters, and the ratchet and bolt method of mounting the threaded insert insures that the insert goes in square. Although the typical insert is slotted for mounting with a screwdriver, the screwdriver tends to slip easily out of the slot, and it doesn't help hold the insert square.

Next, locate and drill for the T-nuts (F, G). Both T-nuts should be located

on-center on the 4 in. wide back, but check the location of the 1/4-20 T-nut for the flathead machine screw (L) that mounts the knob (O) by holding the adjustable back/bottom assembly in position on the back. Note that you'll need to counterbore for the T-nuts so they don't protrude from the back. Mount the T-nuts, drill and countersink the backing plates for the 8-32 by 5/8 in. flathead (Phillips) machine screw (J) that holds them in place, and add the washer (N) and knob to mount the adjustable back/bottom assembly.

No finish is needed for the jig, although you could apply a penetrating oil if desired.

Mount the Jig to the Miter Gauge

To locate the jig on the miter gauge, mount a blade on the saw arbor, position the jig so the end of the bottom is flush against the blade, and mark through the holes in the miter gauge to locate the threaded inserts (I) that accept the round-head machine screws (M). Use a 3/8 in. diameter bit to drill the holes for these threaded inserts, chamfer the hole perimeters with a countersink, then use the bolt and ratchet method described earlier to thread the inserts in place. We don't show a precise location on the illustration for these inserts, since this will vary depending on your saw. If you are using a wobble dado, set the dado to maximum width, then locate the jig so the end of the bottom just touches the blade, before mounting the jig to the miter gauge. By locating the jig with respect to the minimum dado head setting, all lesser settings on the wobble dado are easily accomplished.

Make the Keys

Your hardware kit will include five brass keys, ranging in thickness from 1/16 in. to 1/2 in., and measuring 3/4 in. wide by 7/8 in. long. You'll need to drill and countersink the keys for the 8-32 in. flathead (Phillips) machine screw. No countersink is applied to the 1/16 in. thick key.

Using the Jig


To set up the jig for a specific cut, first mount the appropriate key or keys (the jig is not mounted to the miter gauge at this time). You may use only one of the keys (such as for a 1/4 in., 3/8 in. or 1/2 in. box joint) or you may stack the keys to achieve fingers greater than 1/2 in. or in

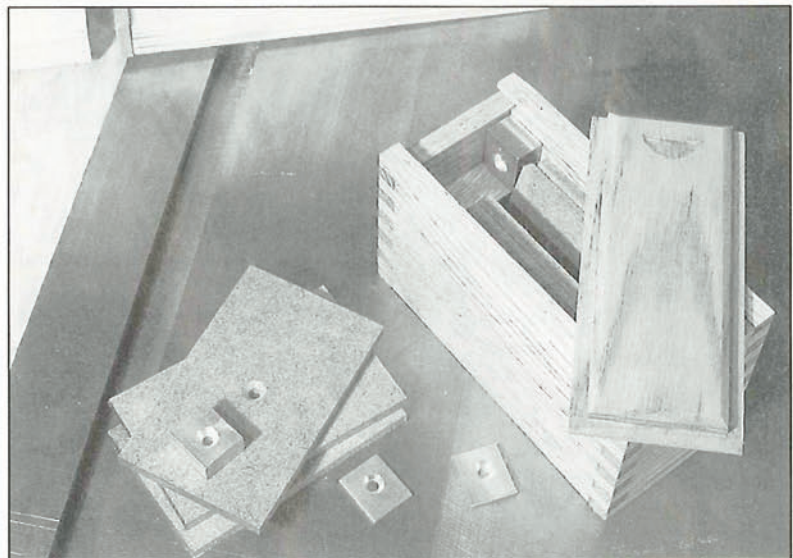
increments of 1/16 in. For example, for a 5/16 in. finger you'll combine the 1/4 in. key with the 1/16 in. key, or for a 3/4 in. finger you'll use the 1/4 in. and 1/2 in. keys together. For each different size joint, you'll want a fresh backing plate, to provide support and prevent tear-out as the blade exits.

Once your key(s) and backing plate are mounted, set the dado head to a width that equals the key total, and make a test cut through a piece of scrap to check that the setting is right. Check your test cut on the key(s) and adjust the dado head if necessary. The fit of the test slot over the key should be snug (no gaps) but not tight. Once your dado head setting is correct, mount the jig to the miter gauge using the two round head machine screws (you may need to shorten these screws if they're too long).

Next up is adjusting the sliding back/bottom so the blade is exactly one

key thickness from the key(s). You can measure the distance, but a better way is to use a piece of scrap that's been cut to equal the key(s) thickness. Tighten the plastic knob to lock the setting, raise the dado head to a height that's equal to 3/4 in. (the thickness of the jig bottom) plus the stock thickness, then take it just a hair higher. Remember, the idea is to make a slot that's just a little deeper than the stock is thick, which enables you to then sand the joint flush after assembly.

Now make a test joint on two sections of scrap stock that are at least 6 in. wide, and the same thickness as your project stock. The joint should fit easily—not tight, but without any slop either. If the fit is too tight, loosen the knob and adjust the sliding back/bottom assembly so the key(s) are a little closer to the dado head. If the fit is sloppy, increase the distance between the key(s) and the dado head. 



Accessory Box

A good way to gain familiarity with your box joint jig is to practice using it, and this little accessory box is the perfect way to get that practice. The box in the photo is sized to hold the brass key set and the eight Masonite backing plates. It's made of 3/8 in. thick stock (we used oak), with a 3/8 in. thick top and a 1/4 in. thick plywood bottom, and the finished size is 2 3/4 in. wide by 5 3/4 in. long by 3 in. high. The step-by-step instructions for making the box are nearly identical to the step-by-step instructions for building the slip cases (see page 48). The only differences are that the front is 1/4 in. (one pin) shorter than the sides and back, which include a 1/8 in. by 1/8 in. groove for the top. The top has a 1/4 in. by 1/4 in. rabbet cut on the sides and back, with a gentle chamfer added all around. A thumb notch provides a way to easily slide the top open. A 3/4 in. thick by 1 1/2 in. wide by 2 in. long block of wood glued inside the box serves as a shelf to hold the brass keys up near the top, where they're easily accessible.

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