

These are the five charitable trusts which have given us grants for our new building

# Woodworking tips



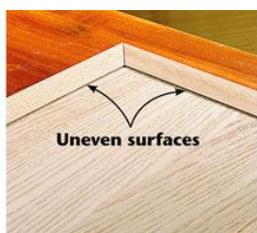
## Break free from biscuit blunders

Thinking ahead pays off when joining workpieces with biscuits. By properly positioning your slots you'll enjoy perfect-fitting joints every time. Regardless, remember the best tip for all biscuit applications: Make test cuts on scrap pieces before cutting the real thing.

### Mistake #1: Exposed biscuit slots

Cutting through the face of a workpieces beveled end, as shown at top *left*, cause's damage nearly impossible to repair. This goof happens when you cut a slot for a large (#20) biscuit at the midpoint of the bevel in 3/4"-thick stock.

**Solution:** Avoid this mistake by cutting the slot closer to the inside corner of the beveled end. To do this, adjust your joiner's fence, as shown middle and below. This allows you to still use a #20 biscuit without cutting through the face. (You should always use the largest biscuit possible for maximum holding power.)



### Mistake #2: Mating surfaces misaligned

If the mating biscuit slots you cut don't match up perfectly, the work-piece surfaces will not be flush, as shown at top *left*.

**Solution:** First, reference your cuts from the same workpiece surface (the top face). Second, don't use your joiner's base and fence together for alignment when cutting the slots; both might not make parallel contact, resulting in uneven slots. Instead, reference your cuts either with the base resting on the benchtop or work surface, as shown at bottom *left*, or with the fence resting on the face of the workpiece.

### Mistake #3: Crooked or unsquared slots

The start-up torque of a joiner can cause it to lurch when powered up. Resulting slots might be unsquared, as shown at *left*.

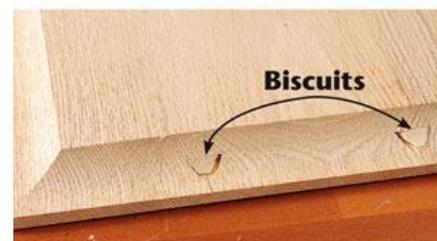
**Solution:** Never make field cuts (in the interior of a workpiece) freehand. Instead, clamp a stop to your workpiece-right on the line for the bottom of the mating board-and use that as a reference point for the joiner, as shown at *bottom left*. To counteract the lurching, start the motor and then line up the joiner with the mark before plunging to make the cut.



### Mistake #4: Exposed biscuits

It's easy to forget where you positioned the biscuits in an edge-glued workpiece. This can lead to cutting into them when machining a profile, as shown at *left*.

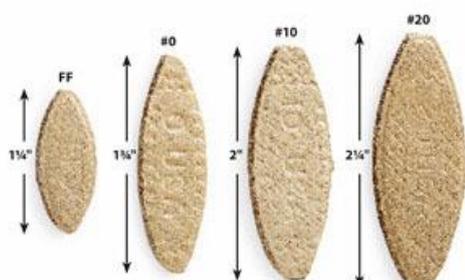
**Solution:** Simply put, plan ahead. If you know you're going to machine the edges and ends of a panel, be sure to locate the biscuits far enough from the edges and ends so they won't be exposed.



### Mistake #5: Glue-line depressions

Even though biscuit joints are strong enough to unclamp after a couple of hours, planing or sanding these workpieces right away could result in scooped recesses over the biscuits. Why? The glue around the biscuit causes the wood to swell slightly. Machining off these temporary "humps" results in shallow depressions once the glue fully dries, as shown at *left*.

**Solution:** Allow your glued-up workpieces to dry for 24 hours before machining. The humps will have shrunk back to normal size by then.



### Biscuit Joinery Basics

A biscuit joiner (also known as a plate joiner) cuts half-oval slots in mating workpieces; then you glue in a football-shaped "biscuit" and clamp the joint tightly. (Common biscuit sizes are shown at *left*.) Biscuits add strength to joints and assist you in aligning workpieces. Here's how to set up a joiner to cut a typical joint. Click on link below for our Biscuit Joinery Basics slide show.



### Step 1

Mark biscuit-slot locations across the joint between two boards you want to join. Mark the first board, then transfer to the second.

1

### Step 2

Set the plunge-depth adjuster to match the biscuit size. For maximum strength, use the largest biscuit that fits your joint.



2

Plunge-depth adjuster



### Step 3

Line up the slot-centering marks with your layout line. (Similar markings are on the base's bottom for using it vertically.)

3

Slot-centering mark

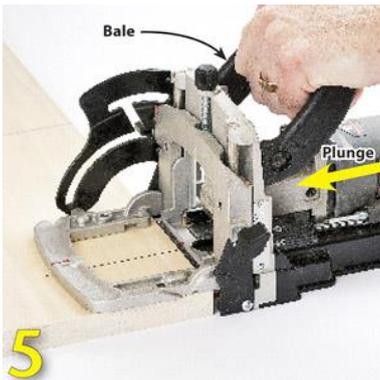
### Step 4

Typically, you'll center the slot in the wood. The joiner's base, when sitting on a flat surface, is preset to center the cut in 3/4"-thick stock.



4

Slot-centering marks



### Step 5

Finally, grip the joiner by the bale and the barrel (or handle), engage the power switch, and plunge the blade into the wood

5

### Step 6

After you've cut mating slots in your workpieces, add glue and biscuits and clamp the joint.



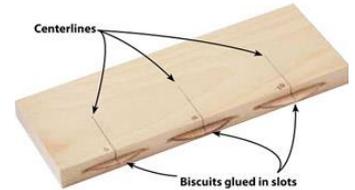
6



## 12 ways to get the best from your biscuit joiner

For quick, reliable alignment and joining of project parts, nothing beats a biscuit joiner. At its most basic, you simply cut slots in mating pieces, add glue, insert a biscuit, and clamp. These 12 tips help your machine work harder. Click on link below for the slide show.

1. **Save time with a biscuit gauge** #10, or #20 biscuits and the slots that hold them. Simply mill a slot for each size, glue in a biscuit -- making sure you push it in only halfway -- and mark a centerline for each. Then line up the centerline on your gauge with the layout line on your workpiece for a quick reference on which to use. (Use the largest biscuit possible for maximum strength.)



### 2. Trap bevel cuts even when your fence can't

A few biscuit-joiner fences tilt to 135° to capture the end of a mitered workpiece. That keeps the tool stable when cutting the slot. If your joiner's fence maxes out at 90°, you can get the same stability with this trick. Simply clamp your mating mitered workpieces back-to-back so the bevels form a 90° angle, as shown, and cut slots on each miter.

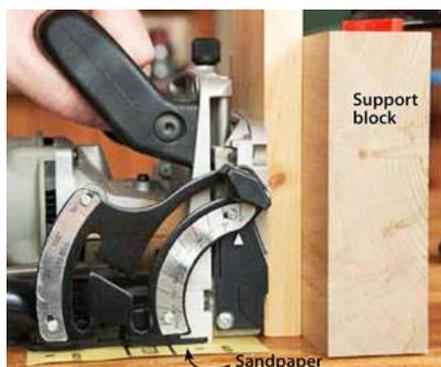


### 3. Reinforce too-narrow joints with back-side biscuits

The slot for a #0 biscuit measures about 2 1/8" wide, so you can't hide a biscuit joint in stock narrower than this. If you're making face frames -- which are typically narrower than that -- you won't be able to join them with any of the three standard biscuits. Here's a way to reinforce a joint with full-size biscuits on the back side -- provided they won't be seen. Glue and clamp the mating boards together. When dry, cut slots across the joint line no deeper than 2/3 the boards' thickness, and then glue in biscuits (top photo). After the glue dries, cut the biscuits off and sand them flush.



If you make a lot of narrow face frames, consider purchasing Porter-Cable's biscuit joiner, which includes an extra blade to cut smaller face-frame slots for special 1 1/4"-long biscuits.



### 4. Make perfect flush-fitting joints with a little lift

Even a well-tuned biscuit joiner can sometimes cut slots that result in a non-flush-fitting joint. To avoid this, elevate the biscuit joiner with a sheet of sandpaper before cutting the face-grain slot. Then, after assembly, use your router to flush-trim the end grain of that piece for a perfect flush fit.

## 5. Upgrade the blade

As with any cutting tool, a poor blade results in subpar cut quality. If you're seeing tear-out or hanging strands at the right-hand (exit) side of the slot, consider replacing the factory-supplied blade with a quality aftermarket one. We recommend Freud's six-tooth biscuit-joiner blade because its carbide teeth cut cleanly and last longer than the teeth on most stock blades.



## 6. Right-size your biscuits

If you live in a humid climate, you know how biscuits can swell -- sometimes even despite storing them in sealed containers -- resulting in biscuits that won't fit in the slots. That's a problem when your glue begins to set up and you've got a lot of biscuits to install. Sure, you can shrink biscuits in a microwave oven, but they'll likely come out different thicknesses. So run your biscuits through the Biscuit Press, an aluminum hand-cranked tool that compresses them to uniform thickness.

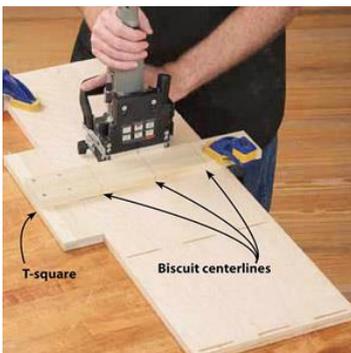


## 7. Add a third hand with this clamp

Referencing biscuit slots using the machine's base rather than the fence usually works great, provided your workpieces sit perfectly flat against the benchtop. Because it takes both hands to operate the joiner, you need a helping hand to secure the workpiece. Kreg's Bench Klamp System provides quick clamping, particularly with slightly bowed stock. To install this clamp, rout a recess into your benchtop and mount the flush-fitting plate with screws. When not in use, remove the clamp via the keyhole slot in the plate.

## 8. Add stability when you're on the edge

Sometimes, cutting slots into workpiece edges can be tricky because the short fence fails to provide enough reference surface to prevent tipping. That's when you need this base extension. Build it from plywood or any scrap stock that's flat.



## 9. Tee up a self-squaring story stick

If you're cutting multiple biscuit slots in wide side panels, such as for shelves in a bookcase or cabinet, make a T-square for repeatable accuracy. Glue and screw the parts together at exactly 90°. After the glue dries, mark biscuit centerlines on the arm. Now use the T-square to line up your biscuit joiner for cutting slots in the case sides and mating shelves, referencing the T-square

from the same edges.



## 10. Enjoy lots of options with this all-purpose biscuit jig

If you do a lot of biscuit joinery, you'll appreciate this versatile jig, with fences and guides that make cutting slots easy and accurate, including on beveled and mitered workpieces. Build it according to the plan in issue 161 (February/March 2005) or download it for free at [woodmagazine.com/biscuit-jig](http://woodmagazine.com/biscuit-jig). Mount your biscuit joiner in the jig, clamp the jig to your workbench, and you have a rock-solid workstation

## 11. Jazz up mitered corners with splines



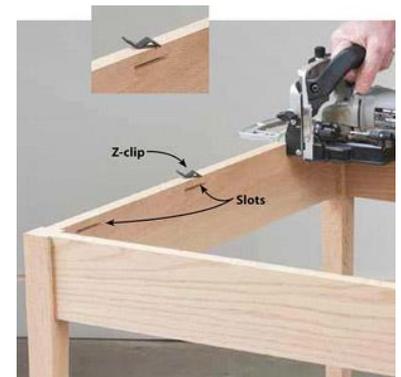
Splines add both strength and visual appeal to normally weak miter joints, especially when you make the spline from a contrasting wood species. Cutting the spline slots on your tablesaw requires a tall jig, but you can cut them easily and quickly with your biscuit joiner and the attached fence jig, see PDF file below.



Here's how to do it. First, assemble your mitered project and allow the glue to dry. Cut two mirror-image triangles, as shown, mounting them to your joiner's fence with machine screws and nuts. Set your joiner's cutting depth as deep as you can. Trap the mitered corner in the fence jig and plunge a cut centered on the workpieces thickness. Then glue in the spline of your choice. When dry, trim it and sand flush.

## 12. Mount a tabletop... with your biscuit joiner

To use "Z-clip" fasteners to secure tops to tables, desks, and dressers, you typically saw a blade kerf along the rails or aprons. To avoid any potential weakening that might result from the full-length kerf, use your biscuit joiner to cut slots where the fasteners will mount. Set the joiner for the No. 10 depth slot, adjust the fence to cut the proper distance from the top of the rail (usually 1/2"), and plunge the blade. You can do this before or after assembly.



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