

# Perfect dovetails on a curve

NESTING BLOCKS  
EASE LAYOUT,  
CLAMPING, AND CUTTING

BY BRIAN ROY

Most woodworkers have cut dovetails to join two straight boards. Some have even used the joint to bring together a curved drawer front and a straight side. But confronted with two parts that are curved across their width—perhaps for the sides of a jewelry box—many would hesitate.

Because both parts are curved across their width, the ends are also curved. So, there are no straight edges for your square and bevel gauge to register against, which makes layout very difficult. There's also no obvious way to clamp the bowed parts securely when you saw and chop the dovetails. And how do you keep the shoulders properly curved while cleaning out waste?

The answer is a pair of hardwood blocks that sandwich the

workpiece. Each block has a straight edge that lets you lay out the dovetails. Nested around the workpiece, they can be clamped in a vise, so you can saw the pins and tails. Also, they can be used as a chisel guide when you're cleaning out the waste. I'll show you how to make and use the blocks, including some tips on laying out and cutting dovetails on curved parts.

## Make the blocks

The blocks are used in pairs. One goes on the inside curve of the workpiece and has a convex face and edge to match its curved face and end. The other goes on the outside and has one convex side and one concave side. To make the blocks, you need two templates (opposite page), made from 1/2-in.-thick



A pair of these blocks gives you a straight edge for layout and clamping, and a curved one that helps you chop perfect shoulders.

## Curved blocks are the key



LAYOUT



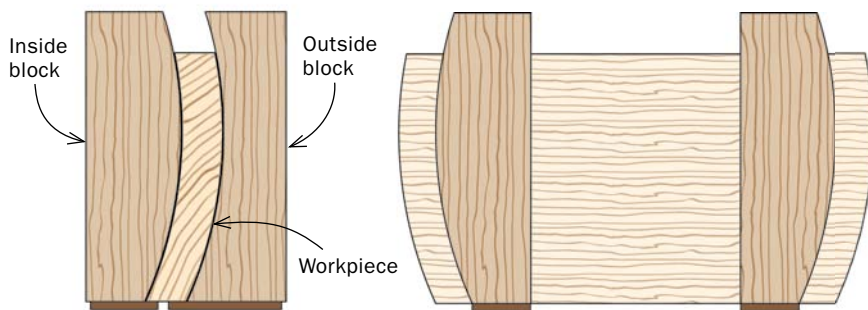
CLAMPING



CHOPPING

## Start by making the blocks

Because the sides of this box have an irregular curve, you can't just flip one pair of blocks over and use it at the other end. So, you'll need a second pair that is a mirror image of the first pair. For sides with a regular curve, one pair is all you need.

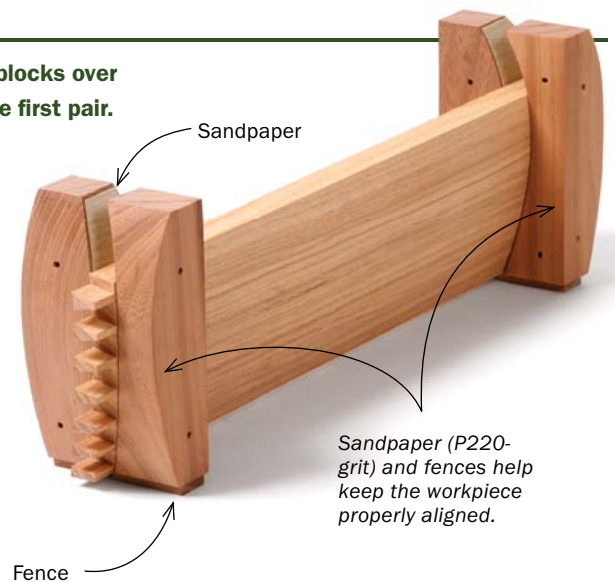


**END VIEW**

The mating faces of the blocks match the profile of the workpiece.

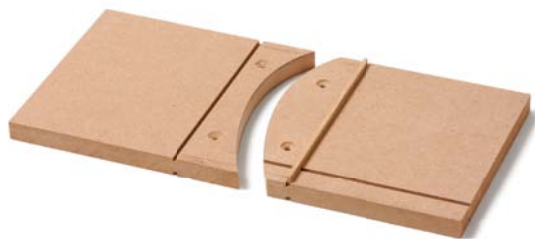
**SIDE VIEW**

The outside faces of the blocks match the ends of the workpiece.



## USE A PAIR OF TEMPLATES TO MAKE THE BLOCKS

Templates ensure that all of the convex curves—and the concave ones—are identical.



### YOU NEED TWO TEMPLATES

Cut the curves at the bandsaw and then sand them fair, backing up the sandpaper with posterboard so that it skims over the low spots while knocking down the high ones. The curves need to nest together tightly.



**One fence for both templates.** The fence sits in a number of grooves on both sides of the templates, to keep the blocks in the same orientation.



**Use the template to lay out the curve.** With the blank pressed against the fence, trace the curve onto it.



**Bandsaw the curve.** Leave about  $\frac{1}{32}$  in. of waste to remove at the router table. Before you do that, tape the offcut back on and then trace the second curve and cut it.



**Rout flush.** If your bit isn't long enough to trim the entire block, use a block plane to remove the remaining waste. Then flip the block onto the opposite template to rout the concave face.

## Shape the workpiece

Shape the end grain first, when the blank is still straight and square. Then you can register the curved side of the block against the curved end grain, making it easier to lay out the side's shape.



**Template for the end.** While the workpiece is still square, use the template's fence for alignment. It registers against the bottom edge, so the same section of curve is used for all eight ends. Lay out the curve and then cut it.



**Block for the curved faces.** A fence on the block aligns it with the bottom edge (left). The shim under the block is the same thickness as the workpiece's final thickness. Remove the shim to trace the inside face (right).



**Rough out the inside curve first.** Make a series of ripcuts. Keep the blade square to the table and adjust its height so that each cut is just shy of the layout line.



**Clean it up with plane.** You'll need one with a radiused bottom tighter than the tightest part of the curve. Roy made his, but you can buy new and used "round" molding planes from a variety of sources.

MDF. For an asymmetrical curve like the one shown, I rough-cut the curve at the bandsaw. Then I clean up and fair the curve with sandpaper attached to a flexible caul made from a few pieces of stacked posterboard. For symmetrical curves, I cut the templates with a router and a circle-cutting jig.

After the templates are made, make the blocks. Trace the template's curve onto the hardwood blank and rough it out at the bandsaw. Then trace and cut out the curve on the adjoining face (you may need to tape on the offcut to do so). To clean up the bandsaw cuts, screw the blank to the template and rout it flush.

### Lay out and cut the dovetails

After the blocks are made, you're ready to lay out the dovetails. Of course, first you need to make the sides. On a small box like this one, I start with thick sides and use the template and blocks to lay out the shaped ends and faces.

The dovetailing is no different from what you'd do to join two straight boards: Lay out the baseline and pins (or do tails first), cut the pins and chop out the waste, then transfer the pins to the tail board.

Of course, you do have to compensate for the curved parts. The blocks take care of that. One rests on the outside face and allows you to draw a baseline. Then sandwich the side between the pair and lay out the pins.

To cut the pins, cradle the side between the blocks and clamp it in a vise. The pins can be sawn like those on any other board. Chopping out the waste is a snap, too. Just align the block with the baseline and use it as a chisel guide. Finally, clamp the block to the baseline on the tail board, stand the pin board against it, and transfer the pins' location. Use the blocks to clamp the tail board for sawing and chopping out the waste.

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## Put the blocks to work for layout...

They provide a straight edge that's square to the finished box.



**1 Mark the curved baseline.** The fence on the block is too small to keep the block square and steady, so make a long plywood square to do the job.



**2 Resting place for the bevel gauge.** The second pair of blocks holds up the other end of the workpiece.



**3 Extend the pin lines.** With the square against the block's straight side, extend the pin lines so they are parallel to the length of the sides.

## ... and for cutting

Get a solid grip for sawing, paring, and transferring the pins.



**Cradle for clamping.** Nestled between the two blocks, the workpiece won't flex under the vise's pressure, and you'll get a more secure grip.



**Curved chisel guide.** Aligned with the baseline, the block keeps your chisel perfectly plumb and prevents it from cutting beneath the baseline.



**Transfer the pins.** Align one block with the baseline and hold the pin board against it. The lower block cradles the bottom of the workpiece.