



## Cutting a double bass f-hole

A personalised method for carrying out this delicate task

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**IN THE YEARS** since I completed my apprenticeship, I have modified the method I use to cut double bass f-holes. I used to cut them in two stages – rough cutting and cleaning up – but I was never pleased with the way they looked when finished. So I began to experiment with different techniques, and now

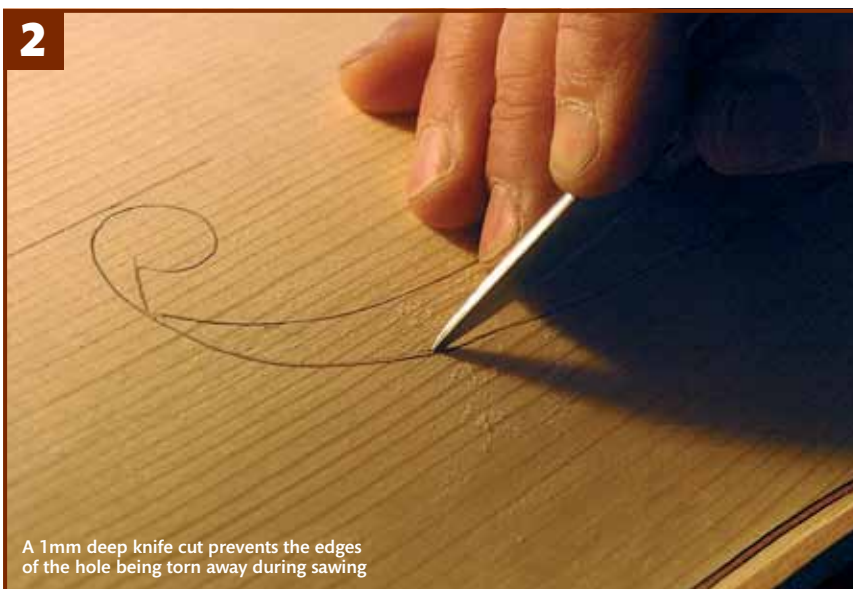
my method combines different approaches from various schools. In this article I will explain how I cut the f-holes of my five-string 'B-model' double basses. The inspiration for these f-holes came from a c.1790 Santagiuliana bass that I have restored, although I have changed the design to my own tastes.



**1**

Two small clamps hold the plastic template in place

**1** I make the template out of a 1mm-thick sheet of soft white plastic, which is easy to work with and flexible enough to be clamped on to the table of the bass. Having fixed the template with two small clamps, I draw the f-hole on the wood with a sharp B pencil.

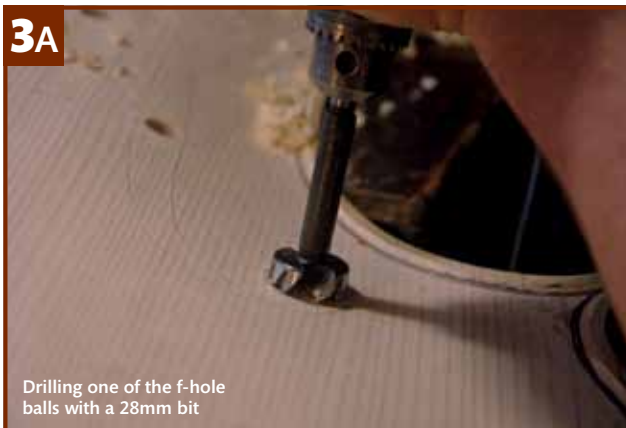


**2**

A 1mm deep knife cut prevents the edges of the hole being torn away during sawing

**2** Next I make a knife-cut, about 1mm deep, to prevent the edges of the f-hole from being ripped off when I saw the rough hole.

**3A**

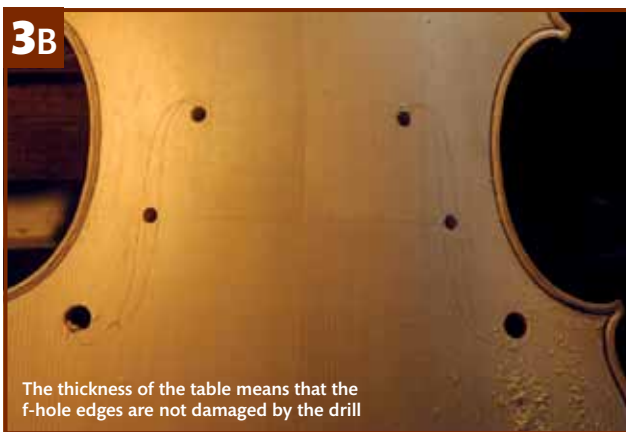


Drilling one of the f-hole balls with a 28mm bit

**3A**

I use an electric drill fitted with two bits of different sizes – 16mm and 28mm – to drill the f-hole balls.

**3B**

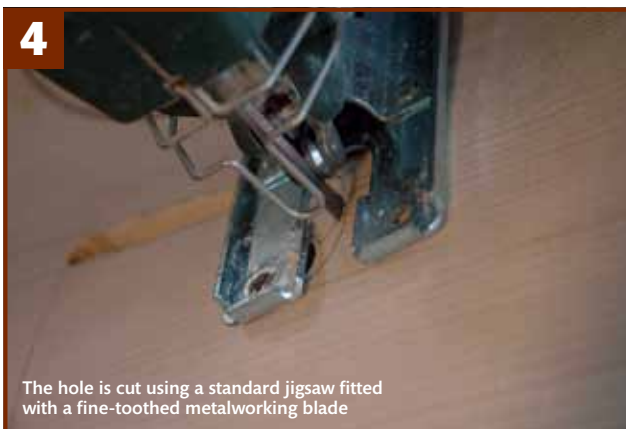


The thickness of the table means that the f-hole edges are not damaged by the drill

**3B**

There is still plenty of wood left – the table is 15mm thick at this stage – because I have only thickened it roughly. This way I don't have to worry about the drill bit bursting out the other side and tearing off the wood fibres around the internal edge of the f-hole.

**4**



The hole is cut using a standard jigsaw fitted with a fine-toothed metalworking blade

**4**

Before I start cutting the f-hole, I size the surface of the wood with very thin glue and let it dry. I cut the hole using a light, inexpensive electric jigsaw fitted with a fine-toothed blade that is intended for cutting metal. When I cut my first bass f-hole 20 years ago, I used a normal fretsaw, but the blades kept breaking. The jigsaw does the job nicely, and it only takes five minutes to cut each f-hole. It is fairly straightforward as long as I stay within the marked knife-cut.

**5**



Taking down the lower f-hole wings with a large flat gouge

**5**

I don't like the lower f-hole wings to be at the same depth as the lower level of the arching. I therefore take the thickness down to about 2mm beneath the lower wing, before cutting the f-hole with a knife. I use a large flat gouge, a small arching plane and a fairly flat scraper in order to finish the surface. Then I take the thickness of the table down to a depth of 7.5mm around the edges of the f-hole. >



Finishing the balls with an improvised sandpaper file

**6** Because the pencil marks are lost when taking down the wings, before beginning the final cut, I clamp the template on to the table again and redraw the f-hole. I cut the balls with a knife and then I finish them with a sandpaper file, which I make by wrapping some 150-grid sandpaper around a tapered peg bushing. With this tool I can ensure that the ball is circular, and I can make the diameter of the internal edge of the ball slightly larger than the external one, thus improving its appearance. The corner of the ball nevertheless remains sharp.



Shaping the f-hole shaft with a straight-ground Japanese knife

**7A** There are three steps involved in the final cut of the shaft. First, I make a rough cut close to the pencil mark. Then I turn the table over and cut the internal edge of the f-hole (this is slightly wider than the external edge of the f-hole). Cutting in the opposite direction gives me a clean surface for the final external cut. Thirdly, I turn the table over again and finish the f-hole. I use an 18mm-wide, double-sided, straight-ground Japanese knife to shape the shaft. I like the wings to be quite flatly angled so that there is enough distance between the narrow openings at the top and bottom of the f-hole, and so that the nicks are not too large.



The finished f-hole with its smooth, chamfer-like edges

**7B** Finally, I round off the sharp f-hole edges with 600-grid sandpaper. This gives it a softer, warmer look – it is like a chamfer but quite smooth. There is also less chance of a sharp edge being chipped off by soundpost setters and other tools I have to insert into the f-hole later. ■

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To read Andrew Ryan's Trade Secrets article on positioning and cutting f-holes from the January 2006 issue of *The Strad*, subscribe to the The Strad Archive at [www.thestrad.com/StradArchive.asp](http://www.thestrad.com/StradArchive.asp)



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