



Installing adjusters for a double bass bridge

Your guide to the careful, precise measurements that are needed for this delicate procedure

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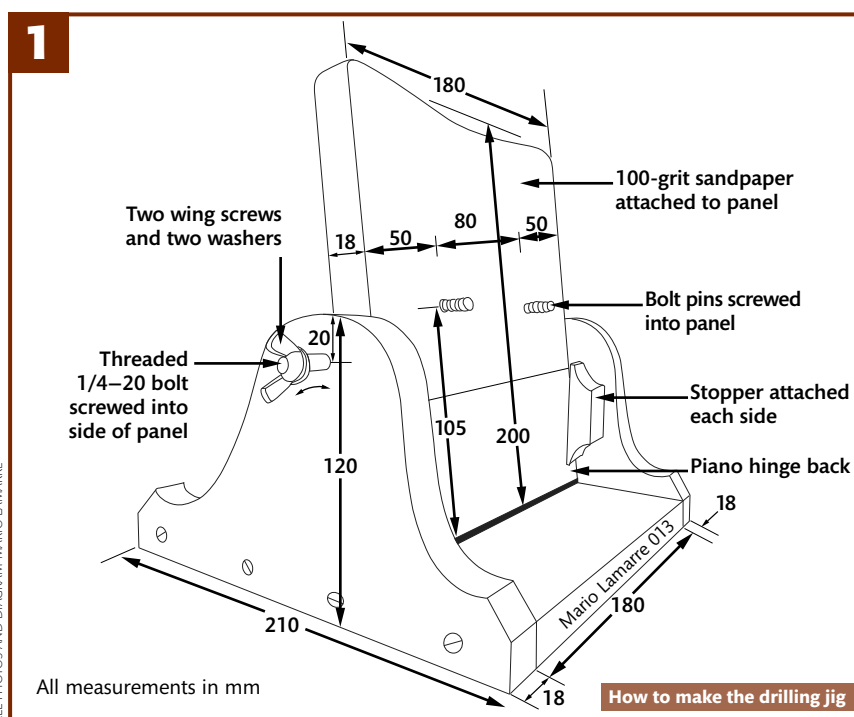
BEING SUCH LARGE INSTRUMENTS, double basses are particularly susceptible to changes in temperature and humidity. When on tour with their bass, players are likely to notice a change in the instrument table's height – and in many countries, the seasonal variation in atmospheric conditions is enough to create a sizeable difference. For these reasons, it is advisable to add adjusters to a double bass bridge, to make raising and lowering the strings' height a simple task.

In this article I describe my own preferred method for installing adjusters in the legs of a double bass bridge. I have used this method for more than two decades, and I've seen bridges that I worked on 20 years ago – I'm pleased to say that the screw threads have remained intact for all that time.

Specialist instrument shops and online outlets offer a wide range of adjusters in various materials and sizes: the picture to the right shows examples made from aluminium, brass and wood. On the extreme right is an adjuster that doubles as a pick-up, and in the centre are some examples of taps – bolt-like tools used for making threads. It is essential to use two models of tap: one with a tapered thread to start, and a second with a square thread to finish.



The size of the two taps on the right is 1/4–20. This means they are a quarter-inch in diameter, and make 20 threads per inch. The two to the left are 7/16–14: seven sixteenths of an inch thick, with 14 threads per inch. In the guide below, I explain how to install adjusters of both sizes.



1 For this process, I have made a small jig from medium-density fibreboard to hold a double bass bridge of any size (Belgian or French). It is important that the central vertical board is movable, and I have covered both its sides with 100-grit sandpaper to prevent any movement of the bridge and clamps during the work. The two threaded bolt pins will eventually help to support the bridge for perpendicular adjustments..



2

Balancing the bridge feet

2 Before starting to work on the bridge, I test it on the instrument. If the arching is deformed on one side, I add a small wooden wedge under one of the bridge's feet to balance it, and then adjust it on the work bench..



3

The arrows show the 3mm change in the ruler's width

3 I use a bespoke ruler to mark where I want to cut the bridge feet (in this instance, I've decided to fit the adjusters fairly high). I use a 34cm ruler with two widths: half is 23mm wide, the other half 26mm. I make pencil marks on both of the bridge's feet, at 23mm and 26mm. This is where I will cut out 3mm segments, and where the adjusters will be fitted.

Alternatively, the threads can be made in the bottom of the feet. To do this, I make a broader template rule of 30mm and 33mm for the cut lines in the legs.

4 Because many kinds of bridge have angled legs, finding the exact point to drill takes precision and care. I press the bridge feet against the side of the jig (if necessary, using the wooden wedge again to give balance). On each leg, I find the mid-point of the pencil mark where the adjusters are to be fitted. With this reference, I place a 30–60 set square on the leg and draw a line straight up and down, on the side of the bridge that will face the fingerboard. I then use an engineer's square to extend the line on to the base of each leg.

To find where to drill the hole through the bottom of each foot, I measure the thickness of the bridge at the height of the cut. I divide this figure by two, and mark this measurement on the bridge feet. I transfer this measure under the sole, on the opposite side of the tracing lines (tailpiece side).



4

Finding the points to drill

5 Now I position the bridge upside-down in the drilling jig. I then add clamps to guarantee stability: the sandpaper and threaded bolts help me to position the bridge correctly, and to line up the set square. I then tilt the bridge by 90 degrees so that its feet are horizontal, in preparation for drilling. >



5

The bridge is prepared for drilling



6 It is preferable to drill a little deeper than necessary, in case I need to make the legs shorter in the final set-up. If I'm installing a 7/16–14 adjuster, I begin by drilling holes in both feet with a 23/64-inch (9mm) drill bit. Then I remove the bridge from the jig and cut the legs as marked in step 3. I replace the bridge on the jig and finish drilling the thread.

Four clamps are necessary for this stage: two to hold the bridge in place, and two more to mark the position of the bridge feet under the claws. This will help me reposition them precisely after they have been cut.



7 Now I start making the thread with the 7/16–14 tap. (It might be necessary, when making a coarse thread, to start by turning the chuck in the drill press by hand.) I also lubricate the tap with soap, which allows the drill press to keep the thread axes in perfect alignment.

8 If I'm installing a 1/4–20 adjuster, I'll start with a quarter-inch drill bit, until I reach the cross-cut mark. After that, I'll use a 13/64-inch tap for threads up to 30mm. In this case, it is not necessary for me to cut the legs halfway through the process: the first quarter-inch hole will act as a guide for the tap.

As in stage 7, I first lubricate the tap with soap. Then I insert it into the chuck of the drill press and make the thread by turning it slowly. When the thread is finished, I cut the feet. Then I smooth them down with the help of a disc sander, and shorten the legs if necessary.



9 I coat the inside of the thread with cyanoacrylate glue to tighten it. When it's dry, I reinsert a lubricated tap to soften the threads.

10 Now the adjusters can be inserted. Like the taps, I prefer to lubricate the threads on the adjusters beforehand: soap, wax or graphite can be used. ■

NEXT MONTH SHEM MACKEY ON CASTING AN INSTRUMENT'S HEAD AND SCROLL

