

A Simple Non-Return Valve for Uilleann Pipe Chanters

Many sets of pipes have no way of shutting off the air to the chanter reed. This forces you to strangle the bag while tuning the drones. This is less than ideal because: (a) you only have one hand free, and (b) it weakens the bag; especially if it is made from vinyl.

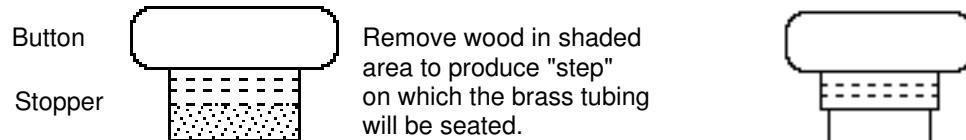
Not having the metalworking skills to make a stop key I came up with this simple and efficient solution which can be made in about half an hour. The idea is to convert the existing "button stopper" found at the top of every chanter head into a valve that shuts off the air supply to the chanter reed with a simple twist. Even though adding the valve means decreasing the internal volume of the chanter head it appears to have no effect at all on the acoustics or tone. By the way, I'm sure this has been invented before—I since learned that Timmy Britton has a similar device. The one I describe below is for chanters with an "input tube" that inserts in the side of the chanter head (Quinn chanters, for example).

You will need the following items:

- brass tubing with an OD about 1/16" less than the inside diameter of the chanter top
- thin cork sheet
- hacksaw and files
- knife
- superglue
- epoxy
- cork grease which you can make yourself as shown in Section 6.

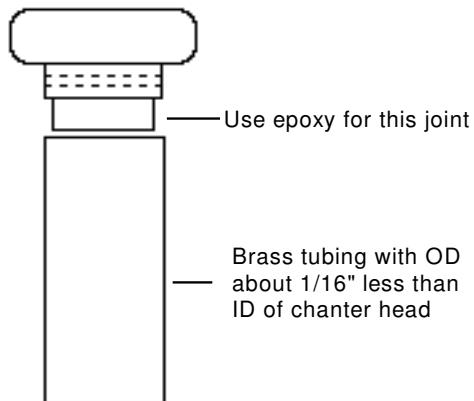
1. Remove the "button stopper" from the chanter head. Some makers just use waxed hemp to secure it; if it's glued just insert a suitably sized dowel up the head and whack the dowel with a hammer to free it. Clean up the inside of the head, removing all old glue etc.
2. Next you need to cut a step into the end of the stopper, on which you will seat and secure the brass tubing (drawing A). Many makers score lines around the wooden stopper anyway, and you can use these as a guide. The stopper on my Quinn chanter is about 3/8" long, and I made the cut about halfway, cutting with an Xacto saw just to a depth of about 1/16" using the scored line as a guide. Remove the unwanted portion with a sharp knife. You don't need to be too finicky here, in fact I deliberately cut it rough so the tubing would "jam" on when I glued it.

Drawing A.



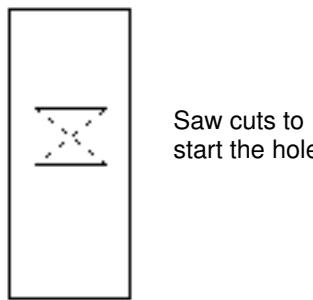
3. Using brass tubing with an OD about 1/16" less than the inside diameter of the chanter head, cut a piece that extends from the top of the chanter head to about 3/4" below the bottom edge of the air "input hole". On my Quinn chanter this piece was 1 1/2" long. Glue the tubing onto the stopper using epoxy cement, making sure that it sits centered and true (drawing B). Don't use superglue for this: the bond is too brittle, and won't survive the stress of continual twisting. Leave it to set.

Drawing B.



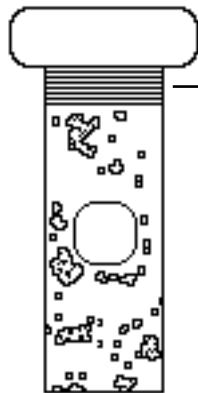
4. Replace the stopper into the chanter head and mark the position of the hole on the brass tube by sticking a pencil or scribe down the input tube. Remove tube and cut out the hole with a hacksaw, making it a little larger than the actual size marked. The easiest way to do this is to cut two parallel lines, and then join these with diagonal cuts (drawing C). Pry up the remaining triangles and cut them off with snips. Clean up the hole with a file, making sure the cylinder is not deformed.

Drawing C.



5. Now you need to lap the brass tubing with cork sheet, which you should be able to get from a local art supply store. Measure the piece and try and get a perfect butt joint, positioning that joint on the opposite side to the hole. The simplest way to attach the cork is with superglue but, because it is porous, use the cellophane wrapper from a cigarette pack or something similar to smooth the cork on. Superglue won't adhere to cellophane, and you'll avoid expensive surgery on your fingers. When this has set, remove the cork covering the hole with a razor blade, and reglue the cork around the edges of the hole if necessary—this point will be getting the most wear and tear. The entire length of the surface of the stopper should be the same height, so you might need to use waxed hemp on the wooden part to build it up to the same height as the cork (drawing D). I would do this anyway to ensure air-tightness.

Drawing D.



Waxed hemp joint to same height as cork.

Brass tube lapped with cork.
Remove cork from hole with razor blade.
Check the cork round edges of the hole is well glued down.

6. At this point if you try and reinsert the stopper you'll notice it's now too big. Carefully sand down the cork with very fine sandpaper, but don't go too far. The secret to an airtight fit is the cork grease, which allows you to insert the stopper even when it appears that it would never fit. You can make this yourself by melting together 3 parts vaseline to 1 part beeswax in a double boiler. When it's nicely melted and melded together, pour it into a suitable receptacle. An empty film container is good, but the best thing is an empty, cleaned-out gluestick—one twist of the gluestick and voilà, your cork grease is conveniently available. Grease the cork liberally and try it for fit. If it still won't go in, wipe it off and sand it some more. Check for air-tightness: this, of course, is crucial.

7. There you are! One twist and you can shut off the chanter; one more twist and it's back. All you need now is some kind of position indicator. I inlaid a couple of bits of brass on the top of the button which align with the hole. Of course if you forget to restore it to "open" you'll find out soon enough; as long as it is not in the middle of a gig!

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