

# Tips on Tenon Replacement

## PREPARATION

Although we machine our pre-made tenons to exacting dimensions, many instrument bodies can be quite irregular, whether it is straight out of the factory or an older instrument that has been through a myriad of repair procedures and replaced body parts. Before proceeding with any job be sure to test fit the replacement tenon in the receiver, checking for both depth and circumference fit. It is far easier to make slight adjustments to the tenon before it gets glued into the body. Also note that when replacing center tenons you should remove the C#/G# post prior to counterboring.

## COUNTERBORING - TOOLING

The counterbore cutter sizes required for our tenons are:

13/16" (20.64mm) for center tenons (our catalog #6825)

1.0" (25.4mm) for bell tenons (our catalog #6826)

Counterbores also require a 3/16" (4.76mm) pilot (catalog #6830) as well as a pilot bushing that fits inside the bore of the instrument. The pilot fits into a center hole in the counterbore and also a center hole in the pilot bushing, thus keeping the counterbore centered to the instrument during the cutting procedure.

We offer 3 different pilot bushings for our 3 different center tenon replacements, and 1 pilot bushing that fits all models of our bell tenon replacements.

#3562 PILOT BUSHING - center tenons - Bundy / Selmer

#3563 PILOT BUSHING - center tenons - Artley

#3564 PILOT BUSHING - center tenons - Vito

#3561 PILOT BUSHING - all bell tenons

## COUNTERBORING - PROCEDURE

As a safeguard for any counterboring procedure we recommend clamping the outside of the instrument body. A metal band clamp will work quite well, and to prevent the clamp from marring the body's outer surface you can make a plastic collar to fit over the body, and then position the clamp over the collar. Cut a split in the collar so as to allow the collar to tighten around the body as the clamp is tightened.

You should be aware that most plastics used on instrument bodies can be quite abrasive, and care should be taken when making the cut. Too high a spindle speed will cause overheating and rapid cutter deterioration - we recommend a speed range of 800 - 1200 rpm. Feed rate should also be fairly slow - somewhere in the neighborhood of .001" (0.025mm) per spindle revolution (approximately 7 seconds to cut 1/8" (3.2 mm).

A most critical part of counterboring is getting the correct depth for accepting the replacement tenon. Cutting too deep will result in a undesired gap in the instruments bore. Again, we recommend going slow and checking frequently for proper fit.

Note that we make the outside diameter of the tenon slightly smaller (0.004", 0.102mm) than the counterbore diameter so as to allow necessary space for the glue. A nearly zero clearance between the tenon and body results in too much of the glue getting squeezed out.

## INSTALLATION

For installation we recommend using the following glue:

#3212 MAXI-CURE EXTRA THICK SUPER GLUE

#3213 INSTA-SET ACCELERATOR

To assure good control while applying glue to the tenon and body we recommend removing the nozzle from the glue bottle and using a small stick, toothpick, etc. to dip into the bottle and then apply to surfaces.

Apply a liberal amount of glue to the outside tenon surface. Do not apply glue to chamfered surface or leading edge of tenon. Note that the chamfered edge is provided to allow space for excess glue that gets squeezed out when tenon is inserted and minimizes any excess glue getting into the instrument bore.

Also apply a liberal amount of glue to the sides of the counterbored area of the instrument. Again, so as to minimize any glue from squeezing out into the instrument bore surface, do not apply glue to the face of the cut (the area cut by the bottom or face of the counterbore).

Insert tenon all the way into body until fully seated and with clean cloth quickly wipe away any excess glue from both outside surface and bore. Once excess is removed, spray accelerator around entire glue line both outside and inside to instantly set glue.