

Socket Liners

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All wooden bassoon normally have a metal socket liner in the boot joint lining the socket for the wing joint tenon. These can cause a couple of different problems.

Out of position socket liners:

It is not uncommon to see boot joints with wing socket liner problems. At some time in the past the liner came loose and was pulled out of position as the wing joint was separated from the boot. The socket liner may have been completely pulled out or may have only just slightly moved out of position. In any event, the liner became a problem.

The obvious part of the problem is the raised rim of the liner. The potentially greater problem is the gap between the bottom of the liner and the end of the bore. This gap is not only an acoustic problem but it also exposes the vulnerable end grain behind the bore liner to moisture. Failure to remove and properly restore the liner can lead to serious damage.

In addition to the acoustic and body damage the liner itself becomes damaged over time making it more difficult to repair. The raised rim becomes bent over insuring that it can no longer be simply removed and replaced. The bent over rim also effectively shortens the depth of the liner. This can result in the bottom of the liner being broken away from the sides. These sockets are not easily replaced and whenever possible it will be easier to repair and replace the original liner rather than to fit a new liner.

Removing a socket liner:

Metal socket liners can be difficult to remove, if you don't know the trick. Basically, the liner is soldered to a piece of pipe which provides the means to pull the liner out.

A steel plumbing nipple and a cap will be needed. Turn one end of the nipple to fit snugly into the socket. Tin the end of the nipple with soft solder and solder it into the socket. The heat required to accomplish this will also serve to soften the adhesive holding the socket liner in place. While the nipple is still hot, but after the solder has hardened, screw the cap on the other end of the nipple, insert a 1/2" steel rod through the other end of the joint and bang the nipple out with the socket attached. After unsoldering the socket from the nipple it can be cleaned up, straightened as needed and reinstalled in the socket.

Straightening a distorted socket liner:

That same nipple that was turned down to pull out the socket liner can be used as a mandrel to straighten

the liner. However, while accuracy was not very important to pull the liner, accuracy becomes more important for straightening it.

Take good measurements of the liner diameters to determine the taper of the liner. (Most, but not all, bassoon sockets are tapered.) Use this to set the angle of the compound to the same angle. Turn the same taper onto the mandrel down to a diameter that allows the socket to almost completely fit onto the taper. Replace the cutting tool with a burnishing tool to spin the liner onto the mandrel. It may be necessary to anneal the socket to get it properly straightened. If the spinning causes the socket to elongate the extra length can be easily trimmed after installation.

Re-Installation of the socket liner:

The socket liner was originally secured in place with a heavy adhesive or epoxy. Epoxy usually works fine and is recommended.

Be sure to clean up the sides and bottom of the wood socket of all old adhesives. Don't depend on it being round—it probably isn't. Test the fit of the socket carefully. It should fit snugly, which also means that it could be difficult to get out to apply the glue. The bore hole is rarely perfectly center at the bottom; try to find the best position and mark the socket so that it can be replaced in that position.

Take care to remove all of the excess epoxy out of the bore before it begins to set. After the epoxy is cured any extra metal sticking above the surface of the boot joint should be filed away. Be sure to leave the edges smooth; any sharp edges will damage the cork or thread tenon wrappings on the wing tenon.

Revised October 20, 2001