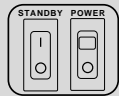


*Hundred Duo Twelve*  
HANDCRAFTED BY RIVERA RESEARCH & DEVELOPMENT  
 SUN VALLEY, CA USA



## Preamp tube first aid

If you hear ringing (a feedback-like high-pitched sound) in your amp, it's probably coming from a preamp tube. Here's a procedure to find which tube is giving you trouble.



**Testing a preamp tube: Tap gently and listen for ringing.**

notice that the nine pins are arranged in an incomplete circle. Always make sure the pins are aligned correctly. Never force a tube into its socket.



Remember to put the sleeve back on after you check or replace a tube.

With nothing plugged into either the High Gain or Low Gain inputs, and the Master controls turned down to 5 or below, turn the amp on.

Turn up the Volume on Channel 1 and Channel 2, as well as the Reverb knob. Now use the tip of a pencil to gently tap the end of each of the small tubes (V1 through V5) and listen for sustained ringing. Turn up the Volume and Master knobs and keep tapping until you find the tube that rings (or squeals).

Turn off the amp, and allow the tubes to cool. Now pull out the troublesome tube and replace it with one of the same value (that is, if you're pulling out a 12AX7, replace it with a 12AX7).

Make sure that the tube is oriented correctly when pulling it out or putting it back in. If you look at the end of the tube and the socket, you'll



**Grip the tube firmly and then wiggle it out of its socket.**

## Power amp tube first aid

Like preamp tubes, power amp tubes can go bad or wear out. Your Hundred Duo Twelve has four power amp tubes, and if one goes bad, they should all be replaced. This assures optimum output and tone.

If a power tube shorts out, the HT Fuse will be blown. Remove power from the amp and replace the fuse before doing the following:

1. Remove the power tubes. Remember the way the eight pins are arranged, and note that the center hole on the socket has a keyway that matches the center post on the tube.
2. Replace one tube. Turn the amp on. If the fuse blows (or the tube glows cherry red, indicating an internal short), you've found the bad tube. Turn off the amp immediately. If the fuse doesn't blow, replace another tube and turn the amp on again. Repeat this procedure until you've determined which tube is bad.
3. When the tubes have cooled, remove them. Replace all four tubes. (Don't throw away the good tubes from the old set, though—save them as spares!)