

String Balance And HFN Steel String Pickups

The HFN steel string guitar pickup is designed to take advantage of the accurate and direct transfer of vibration from the strings to the structure of the instrument. That vibration will follow the path from the strings, through the saddle, down through the saddle slot and bridge, through the top, and finally through the bridge plate to the pickup. On most steel string guitars there are no issues with the vibration transfer remaining even and balanced over its course from strings to pickup. On some guitars, issues can occur with string balance due to poor vibration transfer or other mechanical issues. This tech sheet will serve to help you address those concerns.

Balance issues can be caused by one factor or sometimes several factors occurring at the same time. If you should find that the strings are not equal in output, please follow these guidelines:

Saddle fit The more loosely a saddle fits within a saddle slot, the less the amount of vibration transferred within that instrument. A saddle should have a good snug fit within the saddle slot, with no rocking or leaning possible. The saddle must also be absolutely flat on its bottom. This will help the guitar to sound as good as possible acoustically and to allow the maximum amount of vibration transfer. Particular care should be taken with the saddle fit when retro-fitting an HFN to an instrument that previously had an under the saddle pickup as that saddle would have had to have been a 'loose' fit within the slot in order for the under the saddle pickup to function. A new saddle should be fitted as necessary.

X Brace Interference Make sure that the pickup does not come into contact with any part of the X bracing. A bit of the outside edges of the feet of the pickup base may be trimmed away should there be contact.

Bridge plate not flat Almost all guitars will have a very small belly to the top in the area across the bridge which can also cause a small curving of the bridge plate underneath. In most cases the amount of that bellying is quite minimal and any small deviation in flatness of the bridge plate is normally made up by the mounting materials used to attach the HFN.

- 1) Prior to installing the pickup and prior to using any putty or tape on the pickup, check to see if the pickup will sit flat on the bridge plate within the instrument. Remove any excess wood or glue that might be contaminating the area of the bridge plate and impeding the proper fit of the pickup.

Humidity Levels The HFN bases are made of rosewood that has been kiln and air dried. Even so, the flatness of the rosewood pickup base may change slightly depending upon the humidity levels in your locale. Occasionally, in places with extremes in humidity (either high or low) it may become necessary to 're-flatten' the pickup base due to wood swelling or shrinkage.

- 1) Double check that the pickup itself remains flat across its base. The HFN's are normally flat and true within a tolerance of 0.005" when built. Re-flattening the pickup base can usually be accomplished with a few strokes of the pickup bottom upon a sheet of 120 or 150 grit sandpaper against a flat work surface.
- 2) A pickup that has been trued up and reinstalled will generally not go out of true a second time.

Mechanical phasing issues within the guitar Some guitars may exhibit a mechanical phasing issue in which the acoustic sound appears to be good but due to design or build factors, that instrument may not be transmitting vibration evenly within its structure. This mechanical phasing problem can affect the operation of any pickup attached to the instrument and the following remedies can prove helpful:

- 1) Limiting the amount of contact that the center foot has with the bridge plate by using the supplied putty instead of the VHB tape. Or-
- 2) Not putting any tape on the center 'foot' of the pickup base. Or-
- 3) Adding a second thickness of the tape only to the outside 'feet' of the pickup base.

Bridge lifting Any air gap that might exist due to bridge lifting between the bridge and the guitar top will impede vibration transfer. As the bridge lifts away from the top, the top as well as the bridge plate below it will obviously have a tendency to warp or belly which will also impede vibration. Reglue the bridge, check the bridge plate for bowing or bellying.