

SET-UP MANUAL BY PRŮCHA BLUEGRASS INSTRUMENTS

HOW TO SET UP YOUR BANJO

A good set-up of your banjo is extremely important if you want to get the highest quality sound. Each Prücha banjo is set-up to perfection before it is allowed to leave our shop. However, over time, different variables can affect the original set-up. It is good to check your new banjo after 5 or 6 months to see if it has changed.

After that, it is good to check it regularly twice a year. The most common variables that change the banjo can include any temperature changes from extreme hot to cold, or how it is stored and how much it is played.

Also, if you take it on any trip in an airplane the altitude can change the action of the neck or the head tension. If you need help, ask a banjo luthier or any friend whose style of set up you like. Very often there are set-up workshops at banjo camps or festivals. I am happy to demonstrate the set-up process to anyone who wishes to stop at my booth in either Frankfurt Musicmesse, IBMA in Nashville, the Wintergrass Festival in Tacoma Seattle, festivals in Europe or the Czech Republic or in my workshop in Prague.

I know banjo players like to experiment with their instruments. If you follow the steps outlined below, your banjo is sure to produce a clear, clean tone.

Step #1 - TUNE YOUR BANJO

Use an electronic tuner to get exactly the right note.

Tune as follows:–

1st string D, 2nd string B, 3rd string G, 4th string D, 5th string G

Then you must fine-tune the strings.

Fret each string as follows:–

They should each have exactly the same pitch as the 5th G string:

1st string on 5th fret, 2nd string on 8th fret, 3rd string on 12th fret, 4th string on 17th fret.



Hot tip: When you change strings, tighten each new string several times after the first tuning, pull it up from the fingerboard with your finger.

This will help to stabilize tension on the tailpiece, bridge, nut and tuning peg and thus eliminate problems with tuning.



Step #2 - FIND A GOOD BANJO HEAD TENSION

Before our instruments leave the shop, each banjo head has been top-tuned to G#. Each banjo is tuned, allowed time to relax and stretch, and retuned again.

Our banjos don't pass inspection unless we know they have stabilized and the set-up will keep its position. We feel G# is the best pitch, but your personal taste may be a little different. However, because the open strings on the banjo are tuned to the G chord, it is not good to tune the head to G, which can give you some bad overtones.

If the head is tighter, you will get a brighter sound. If it is a little loose, you will get a lower (deeper, mellow) sound.

Here is the process I use to tune my banjo heads.

First, I hold all strings to kill any vibration. I begin to tap the head about 2" from the tension hoop and also at the edge of the banjo head. The two notes should sound G#, an octave apart.



To get the G# I first compare the head tap tones with the low D string – open 4th – and the high D string – the open 1st string. The G# tone will be noted at the 6th fret of the 1st and 4th strings. However, if you first begin on the 6th fret, your ear will not be able to hear if the head is truly at G# as well as if you had begun on the 1st fret.

So, after you tap the head while muting the strings, listen to notes of the 1st and 4th strings and work your way up the fingerboard to find the tone of the head.



If it is sharper than the 6th fret (G#), you can loosen the hooks. If the head is flatter than G#, tighten the hooks. They must be tightened equally so that the tension and the note are the same everywhere on the head.



When you complete this step, be sure to tune the strings again because they have most likely slipped from their original tuning.

Step #3 - CHECK TAILPIECE POSITION

When the tension on the banjo head is correct, the base of the tailpiece should be about 2 – 3 mm ($\frac{5}{64}$ " to $\frac{1}{8}$ ") above the tension hoop. Check the adjusting screw to change the tension of the strings. I tighten this screw only to minimum tension, just enough not to be loose. After that, try the strings and the head to see if they have held their tuning again.



Step #4 - CHECK BRIDGE POSITION

Many players think the right position of the bridge is twice the distance from the nut to the 12th fret. However, in this position the tuning will not be correct on all the frets.

On Prucha banjos the distance from the nut to the 12th fret is 335 mm ($13\frac{13}{16}$ ").

To place the bridge we add 2-3mm ($\frac{5}{64}$ - $\frac{1}{8}$ ") to that measurement (totaling 337-338mm) ($13\frac{17}{64}$ " - $13\frac{5}{16}$ ") to get the correct distance from the 12th fret to the bridge center so that it is actually a little closer to the tailpiece.

The feet should always be parallel to the frets. In this position, you will have good tone all along the fingerboard.

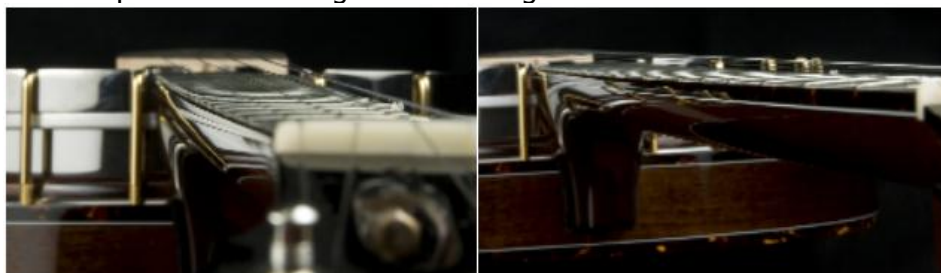
If the tone from the 12th fret is sharper than its harmonic, then the bridge must be moved towards the tailpiece.

If the tone is flatter than its harmonic, then the bridge should be adjusted toward the neck. We are talking about a distance of only 2 – 3mm.



Step #5 - THE NECK

First take off the resonator and check the co-ordinator rods to see if all the nuts are tight enough. All of our banjos are now built with a two-way adjustable truss rod. Next check the fingerboard. It should bow a little to prevent the strings from buzzing.



The easiest way to check is to sight down from the nut to the banjo rim along the fingerboard edge. You can compare the binding to the straight D string.

If you push down the 3rd string on the 1st and 22nd fret together then there should be a distance of 0.5 – 0.7mm ($\frac{5}{256}$ " – $\frac{7}{256}$ ") between the 7th fret and the string.

If that distance is greater there can be trouble with the intonation all along the fingerboard. If it is lower than 0.5mm, you might hear buzzing.



When everything fits correctly then there will be a $\frac{11}{64}$ " to $\frac{12}{64}$ " space from the open 3rd string to the 19th fret on the fingerboard.



When the action is too low, loosen the nut outside of the rim and tighten the nut inside the rim. Strings will go up from the fingerboard.



If the action is too high, loosen the nut inside the rim and tighten the outside nut. Strings will go down to the fingerboard.

When the action is OK, tighten all the other nuts firmly.



If you go through these steps a few times, then you will begin to understand the different variables that affect your banjo sound and the action of the neck.

If you feel unsure of yourself, it is advisable to visit, call, or send an e-mail to the builder of your instrument. Any luthier would be glad to help you with your adjustments.

Thank you for your attention.