

# Bisceglia Guitars

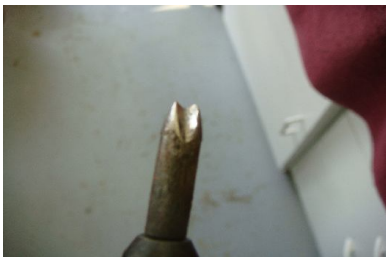
www.biscegliaguitars.com

## Refretting & Recrowning

There are many methods for doing a refret job and anyone doing a refret job may do it a little different from someone else. Some may disagree with some methods but the only thing that really matters is that there hasn't been any damage to the guitar and the customer is happy with the results.

I take time before I start to remove the old frets to inspect the neck, fret board, nut, truss rod. The nut may have to be replaced, even if it appears to be good. I don't remove the nut if it's in good shape until I know for sure it will cause a problem when resetting the action after refretting.

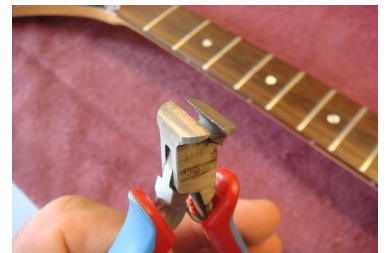
I also make note of the fret size and use the same size unless the customer specifies another size. If they ask for a recommendation the first obvious question is "were you happy with the fret size that is currently on your guitar"? If so why change? I have replaced existing frets with the largest fret available the Dunlop 6000 (0.118 wide x 0.058 high). I usually don't recommend these frets because it will certainly will cause some distortion with the intonation of the guitar. Generally all around fret for most players is a medium fret size. The Dunlop 6155 (0.100 wide x 0.046 high) or Stewart MacDonald's #149 (0.103 wide x 0.046 high) The largest fret I would recommend is the Stewart MacDonald #150 (.110 wide x 0.053 high) or the Dunlop 6100 (0.110 x 0.55). I've done many guitars with this size fret without any intonation distortion problems. I would recommend the StewMac #150 before the Dunlop 6100 only because the #150 is a little lower than the 6100. There's a good chance the frets will be slightly lower anyway after leveling the frets.



1. Remove the guitar strings.

2. Removing the frets:

A. I remove the frets by heating the fret with a soldering iron the has been modified with a groove in the tip so the tip of the soldering iron won't slip off the fret while being heated. I use a 50 watt soldering iron being very careful not to scorch the fret board.

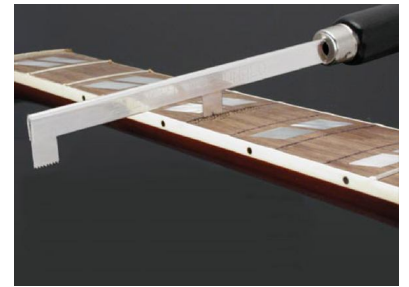


B. Using a special tool purchased on line from a guitar supply store, while the fret is hot, carefully slip the teeth of the tool under the fret by placing the tools teeth flat against the fret board. carefully squeezing and rocking backing forth, if necessary. Once the teeth of the tool has slipped under the fret move it along the fret in the same manner until the fret is dislodged from the fret slot. Continue until all the frets have been removed.





C. After the frets have been removed I clean out the fret slots, check the fret slot depths, and clean the fret board. Fret board cleaner can be bought from a number of guitar supply sites or your local guitar supply store.



D. If the fret board needs a slight sanding I do it at this is the time using a radius block the same radius as the fret board. I don't sand if it's not necessary. It is important to check the radius of the fret board with a radius gage before sanding and use the appropriate radius block.



C. At this point, if your not using any type of neck jig as I sometimes use (see below Installing the frets 4D ) adjust the truss rod to make the neck as straight as possible. Do this now if your not using a neck jig. [See my Truss Rod Adjustment instructions.](http://www.biscegliaguitars.com/adjusting-the-truss-rod)

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Note: Before continuing to the next step be certain you have the fret type you need to install.



3. Preparing the frets for installation:

A. Using a fret bending tool (pictured) I bend the fret slightly more than the radius of the fret board. Then cut the frets slightly wider than the fret board slot it'll be installed into. I usually leave about 1/16th + over each edge.



B. I place the fret into an index to keep the frets organized until I'm ready to install them.

C. At this point if the guitar neck has binding the fret tangs need to be nipped at each end to fit in between the binding.



D. Measuring how much needs to be removed nip the tang flush to the bottom of the fret using a fret nipper.



#### 4. Installing the frets:

A. I use two methods of installing the fret into the finger board. I either press them in or hammer them in using a fret hammer. I actually prefer hammering because I feel I have more control over the fret being inserted. Great care must be taken when hammering so not to over hammer damaging the fret board. There are times when only the press can be used.



B. Using a little hot glue pore a bead into the fret slot starting on one side a going to the other so the entire length of the fret slot has glue in it. A small amount is enough. Be careful not to over do it. Hide glue can be used, preferred by some. I've read that some people use Tightbond, I wouldn't recommend it.



C. Once the glue is put into the fret slot press the fret into place or tap the fret into place with the fret hammer. Make sure the fret is in contact with the fret board the entire length of the fret. I use a .001 to a .0015 feeler gauge to check between the fret and the finger board running the feeler gauge along the fret board and the fret. If the feeler gauge slips under the fret tap the fret down carefully to close the gap. Do this before the glue dries.

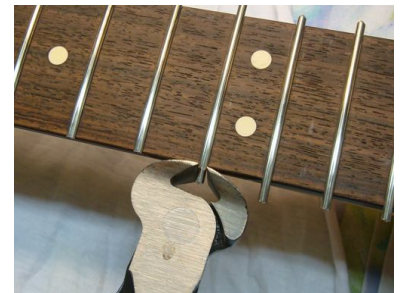


Note: If you decide to hammer the frets into place Be sure you have a solid radiused base under the neck and do not over hammer you could damage the finger board or the neck. Please read this article on Stewart MacDonald's web site.

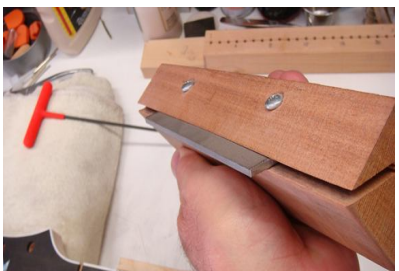
<http://www.stewmac.com/freeinfo/Fretting/a-4895.html>



D. Trim the ends of the frets by cutting the ends of the frets, using a fret cutter, as close to the finger board as possible,



E. Using a file, bevel the ends of the frets 30 - 35°. Run the file along the edge of the fret board holding the file at the 35° angle until the frets are flush with the side of the fret board. Using a beveling file makes this operation much easier. The edge of the finger board should smooth when you run your hand up or down the finger board. You should not feel any metal from the frets hanging over the finger board.





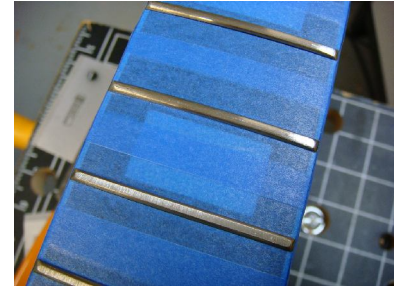
## 5. Leveling the frets:

- A. Check the neck and make sure it's straight. You can check it with a special straight edge notched for the frets or by sighting down the length of the neck. Don't use the frets to check if the neck is straight. It is very important to make sure the neck is straight to perform the next step.



Tape the neck off as shown in the illustration on this page to protect the finger board, finger board edges and binding.

- B. Using the appropriate radius block with 150 - 180 grit sand paper sand the frets moving up and down parallel to the neck. Make certain you keep the center of the block aligned to the center of the neck, until the top side along the length of each fret has been touched by the sand paper.



Note: You can use a higher grit if you choose not to be so aggressive removing material. I use Porter Cable Norton or 3M sticky back paper on a 12 inch long radius block.

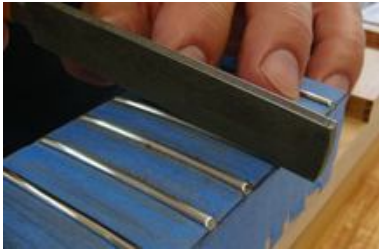
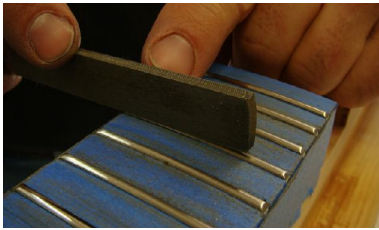
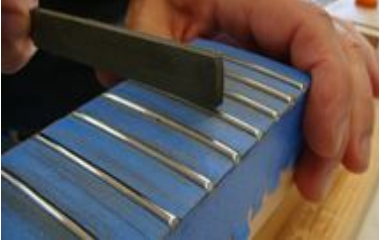
- C. Check the flatness of the frets, using a straight edge, along the radius of the frets, from one side to the other. The straight edge should not rock over any fret in any position along the radius of the frets. If you've touched the tops of each fret while leveling, the frets should be level at this point.



- D. Some frets may have larger flat spots than others. This is ok as long as it's not excessive. As your sanding check the flat spots on the frets. If the flat spots appear to be larger in the center of the neck the neck may not be straight. You may have a back bow in your neck. Excessive flats spots will show at each end of the fret board if the neck has a forward bow. Sight down the neck again and straighten it before continuing.



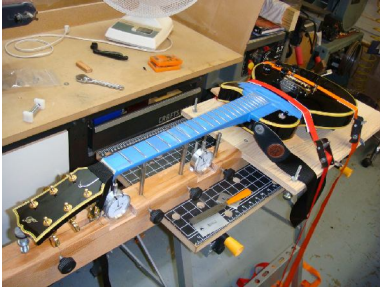
## 6. Re-crowning the Frets:



- A. At this point tape off the finger board between each fret the entire length of the board. I use Scotch 3M Blue Painters Tape for delicate surfaces.
- B. First, make sure you are using the correct recrowning file. Start by placing the file on the frets closest point to you rolling the file across the entire length of the fret until you reach the opposite side. Repeat this process until the flats on the frets created by the leveling process have been removed
- C. Using the same radiused recrowning file, roll the file over each end of each fret to slightly round the ends of each fret. It's important to round each end slightly and to keep the round consistent between each fret. Then using a 3-Corner Fret Dressing Files dress the edges of each fret so there are no sharp edges at the edge of the fret board. Run your finger up and down the edge of the finger board to ensure there are no sharp edges.
- D. Once the frets have been dressed to your satisfaction using a small square piece of 400 sand paper sand any file marks out of the frets. Do this carefully so not to sand through the protection tape on the fret board especially on the edges.  
Hint: I usually double tape the fret board so this doesn't happen.  
Repeat this sanding of each with 600 sandpaper. Then buff with 0000 or 000 steel wool. You can substitute the steel wool with a piece of clothe and rubbing compound.
- E. Remove the tape set the neck relief, restring and enjoy your new fret job. See our procedure Adjusting the Neck Relief..

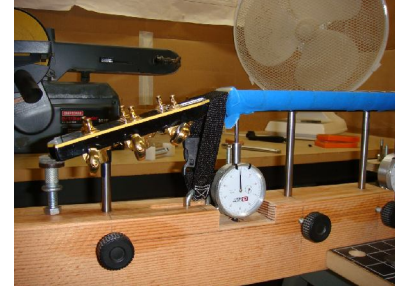


## Using Dan Earliwines Neck Jig



When doing a fret job I sometimes use Dan Earliwines Neck Jig. This is an excellent way to do a fret job. Some pictures below using the Neck Jig.

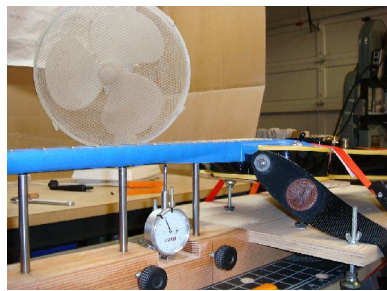
The Neck Jig lets you do your fretwork with the same forces that are present under string tension. It's not necessary to loosen the truss rod to straighten the neck for leveling the fingerboard or frets.



A guitar body is held firmly on the Neck Jig's adjustable height levelers, with nylon straps as clamps. The guitar neck remains free, as the Neck Jig and guitar are tilted toward 90 degrees into the "playing position." Here, with the strings tuned to pitch, the neck is adjusted (usually straight) for the type of fretwork you are about to do. The dial indicators touching the back of the neck are set to zero.



The Neck Jig is then returned to the horizontal working position. When the strings are removed, the neck "backbows" from the release of string tension and the pressure of the truss rod (if the neck has one). The peghead jack and the peghead "pull-down" are adjusted to recreate string tension. This forces the neck back into position until the dial indicators read zero again. Finally, the plastic-capped support rods are raised against the back of the neck for fret or fingerboard leveling.



You can find the Dan Earliwines Neck Jig at Stewart-Macdonalds. [HERE](http://www.stewmac.com/shop/Tools/Jigs/Earlewine_Neck_Jig.html?tab=Instructions#details).



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