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#### **Getting Started:**

- 1. Strings on use notched straight edge. The neck should be flat or with a slight in-bow relief.
- 2. Strings off, neck should be slightly humped, adjust truss rod to make sure it can be made flat.
- 3. Long Straight edge, and a 2nd one that goes from 1st to between 14th and 15th frets to avoid heel ramp if there is one.
- 4. If the neck cannot be made flat:
  - A. With strings on the guitar played well enough, don't have to flatten neck FretMaestro is only 3/8" wide, too narrow to transfer fretboard bow.
  - B. With strings on the play was bad, the neck cannot be made flat, the neck needs to be corrected before investing in leveling the frets.
- 5. Fret Divots can be deep, requires a great deal of Maestro time/effort. See innovative sanding beam method for these cases "Heavy Leveling"
- 6. Clean the fretboard of all grime. Mask electronics, pots and pickups.

#### Fret Rocker Vs Digital Gauge and Spot Leveling:

- 1. A fret rocker spans three frets, when the center fret is higher than the left and right it ID's a high fret. When frets are progressively taller the rocker does not rock, leading us to believe that these frets are the same height when in fact they are not.
- 2. A fret rocker also rocks when the left and center frets are higher than the right, vice versa. Did we ID a low fret or two high frets? The fret rocker run around begins.
- 3. When a fret rocker spans 3 frets that are inclined, each fret in sequence being taller, it won't rock and you think everything is okay... but it isn't.
- 4. A digital gauge tells us exactly what is going on fret to fret and across each fret. This knowledge lets us know exactly what needs to be done, saving us from making disastrous mistakes.
- 5. Maestro the offending frets, use setting 9-11, Sharpie the high point of the fret, Maestro and pay attention to the Sharpie mark, checking with the digital gauge along the way. No guess work.
- 6. NOTE: Download Fret Forensic Worksheet, at top of this page. There are also links to lowest price for Digital Gauge, and other 3rd party items.

### **Light Leveling:**

- No fret divots and the frets are within .003" height of each other we do not use a sanding beam because it destroys the radius and crown. It takes a lot more time to Maestro back to symmetrical radius crown than it does when not using the beam. Maestro is faster in these cases, and saves a lot of fret material too. Note: Guesswork freehand filing can never form symmetrical radius frets.
- 2. Use Maestro gauge, ID lowest fret. If it reads number 4, start with number 3.
- 3. Apply Glide Strips, leave a debris gap between the strip and fret, Sharpie top of fret.
- 4. Start with 240 grit Crown Narrowing file and file until the Sharpie line is thin.
- 5. Change to 150 grit Leveling file, re-sharpie the fret, make 4-6 passes, inspect the Sharpie. You will see some is cleaned off, some not, the clean area is the high point, this always happens, it lets us know where the Maestro is working and we can focus on that.
- 6. Maestro the fret, get close to bottoming out, change back to the Crown Narrow, mark top of fret, Maestro until you see the sharpie line width is a little thinner than you like.
- 7. Use the 150 and almost bottom out.
- 8. Use the 300 and finish.
- 9. Always use the same depth of file setting for all frets.

### Heavy leveling:

- 1. ID the tallest fret with Digital Gauge. If one or two frets stand out more than the rest Maestro these down to the average height of the other frets.
- Example: tallest fret is .049" Glide Strip is .005", 10 layers = .05". Stack the strips 10 layers to build .05" <u>Risers</u>, place these spanning the length of fretboard left center and right. The neck must be perfectly flat and supported to use a sanding beam.
- 3. Sanding beam, preferably one that spans all frets. If it does not, add a 4th Riser to divide the neck into two sanding beam sections. (exception, Heel Ramp, do not use long beam.)
- 4. Mark the top of all frets.
- 5. Use 150 grit emery cloth (sandpaper) and sand the width of the fretboard, not the length. Risers make the beam follow the fretboard radius. Sand until the Sharpie on the frets are scuffed.
- 6. Mark the frets again, make a few more beam passes, check Sharpie marks for uniformity.
- 7. If there are divots repeat the process until the deepest is nearly but not entirely gone.
- 8. Clean the fretboard of debris.
- 9. Use Maestro gauge, ID lowest fret. If there are no divots and the gauge reads for example number 4, start with setting 3. If there are divots, use number 4, start on the fret having the deepest divot.
- 10. Place one layer Glide Strip on both sides of the fret, allow a gap for debris.
- 11. Start with 240 grit Crown Narrowing file, Sharpie the fret, file until the line is a thin.
- 12. Then 150 grit Leveling file, file until the Maestro is very close to bottoming out.
- 13. Then 300 grit Finishing file, file until the Maestro bottoms out, little to no resistance.
- 14. Maybe you had to go to setting 5 to clear the divot, if so, use setting 5 on all frets.

15. Measure with the digital gauge, look for any variance, this only happens when the Maestro is not bottomed out. If variance, (typically .0005" to .001" tall) Maestro the fret and bottom out.

### Wonky Frets:

- 1. This usually happens when frets were beam leveled and fulcrum frets were ignored: A Fulcrum fret is an extra high fret. There can be more than one.
- 2. A sanding beam cannot balance on a single fret, it will stabilize on a high and low fret tilting the beam so that it sands the frets at an incline, sanding the frets low-to-high in one direction, and in some cases in both directions if the fulcrum is more to the center of the beam.
- 3. Follow the same steps used for "Heavy Leveling".
- 4. Note... before doing anything make sure that a fulcrum fret is not one that needs resetting because it lifted for whatever reason.

# Not just for the novice:

- 1. The Riser method sands the frets to agree with the fretboard radius, that's a plus even for a pro.
- 2. Maestroed frets are precision symmetry not possible with freehand filing.

# Heel Ramp:

- 1. Have covered this in video. Judicious leveling of those higher frets is straight forward with Maestro.
- It is best to know why the lift before addressing it. It may only need bolts tightened 1/32" or so.
- 3. Do not use a sanding beam spanning the heel ramp and other frets... sometimes Beam Risers can mitigate this, sometimes not. Be careful. Measure twice, beam and Maestro once.
- 4. On a guitar without a heel ramp everything is straight forward. With a Heel Ramp, and tightening bolts did not completely solve the issue, but the issue is mild, not serious, if using the beam method for pre-leveling, do not use a full-length beam; or if not using the beam method, and we only need to Maestro, in either case, handle non heel frets first. When finished, use a steel ruler with sharp corners, position on centerline of frets before the first heel ramp high fret... slide the ruler to heel fret, pay attention for a click sound or slight ruler lift, that is a high fret, mark it with Sharpie, set Maestro to between 9 & 11, Maestro the fret, checking along the way with the ruler. When the ruler does not click or lift the fret is level, and proceed to the next fret, one by one. Result, perfect level including the heel ramp frets. (Note: use the ruler left right and center of the frets to make sure one side of heel ramp fret is not higher or lower, if it is, Maestro accordingly.)

# Thank you for choosing FretMaestro.