

Hammered Dulcimer Speed Tuning

Basics

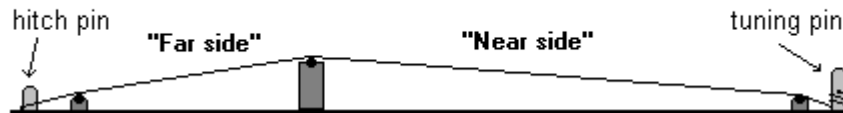
Tuning wrenches:

- T wrench
- Gooseneck

Tuning Physics

- Tension
- Sympathetic vibrations
- Friction
 - across bridge(s)
 - tuning pins (stiction?)
 - inertia (maintain existing state) vs. momentum (motion impetus)
- Leverage

Treble Bridge:



Electronic Tuners

Purchasing

- make sure it's **chromatic** (even if your dulcimer is not)
- sensitivity - try before you buy!
- meter vs. lights – easy to see, read
- look for **fast note recognition**
- slop
- popular brands: Korg, Sabine, Snark SN-2



Using

- pickups – microphone vs. transducers
 - attach to tuning pins, bridge, etc. – experiment!
 - will probably need to move around several times as you tune
- use a guitar pick - pluck/pick gently
- consider making a **damper block**
 - damp the strings around where pickup is attached
 - damp the strings on the opposite side of the treble bridge being tuned
- use your ears too!

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Jon's Tuning Recommendations

1. Tune your instrument at least once weekly – don't let it get way out of tune
2. Always carry your tuning wrench and tuner with your Dulcimer!
3. Use a guitar pick and **pluck gently** to avoid sympathetic vibrations
4. **First raise, then lower string pitch a little**
 - loosens pin friction, helps erase detent where pin was last positioned
 - gives you more room to tune up without overshooting pitch
5. **Always tune up!**
 - Start low, turn slowly while softly **plucking continuously**, then **stop turning when proper pitch reached**
 - use turning momentum to reduce the effects of pin friction
6. Leverage leverage - turn your wrench with your locked **arm, not your wrist**
7. Treble bridge
 - tune one course (both sides) one side at a time
 - for each course:
 - 1st **tune both “far” side notes** (one string at a time)
 - **then tune both “near” side notes** (one string at a time) – usually will be good or just need a little lowering (due to friction across the bridge)
 - use your damper block to dampen the strings on the side of the bridge you are not tuning – makes it easier for your electronic tuner to pickup the right note
 - don't tune all strings on one side of the bridge and then all the ones on the other!
8. Tune consistently – I recommend:
 - tune Bass, then Treble bridges
 - tune each bridge from top to bottom
 - in each course: tune one string first while damping other string(s) with your finger

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Tuning Challenges

- 1) Sticky pins
 - a) always first raise and then lower pitch a little (to loosen pin friction) especially when close
 - b) then just tune up to pitch
- 2) Waaaaay out of tune – quickly reset tension before final tune:
 - a) rough tune any chromatics
 - b) rough tune treble bridge “**far**”**side only!**
 - c) tune bass bridge normally
 - d) tune treble bridge (both sides) and chromatics
 - e) spot check bass bridge
- 3) Can only get one side of treble bridge in tune at a time
 - a) string has worn groove into delrin bridge cap – lift and reposition string
 - b) bridge is out of alignment – see next section

Minor Surgery

Adjusting a bridge knocked out of alignment

- look for marks in dust, finish where bridge moved from
- use pencil, eraser end next to bridge
- gently knock with something light (tuning wrench handle)
- stike **gently**, don't overdo - be patient
- make sure bridge remains straight (visually)

Replacing broken loop-end string

1. remove broken wire
2. **unwind** (counter clockwise) the now bare tuning pin 3 1/2 turns
3. get a 3rd hand to hold the loop end on the hitch pin (use a clothespin, binder clip, person, etc.)
4. thread wire through bridges and thru tuning pin hole
5. cut wire so that 1 1/2 inches sticks out of tuning pin
6. push the end of the wire back into the tuning pin so it is flush with outside edge of pin (ie. does not stick out of the hole)
7. while holding the wire taught against the outside of the tuning pin (and keeping the end flush inside the hole), turn the tuning pin (clockwise) so string wraps around it **downwards** towards dulcimer. Continue holding it as you wind to maintain tension on the string, preventing it from slipping out the hole
8. make sure windings go **downwards** on the tuning pin (i.e. towards the dulcimer)
9. as the string begins to tighten make sure it is following it's proper path through and across the bridges - make sure it's not caught on another string or a bridge pedestal