

# Hammered Dulcimer Speed Tuning

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## Basics

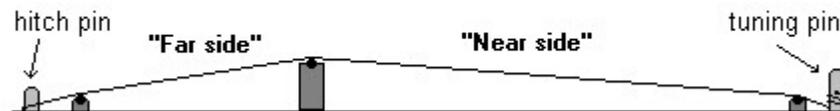
Tuning wrenches:

- T wrench
- Gooseneck

Tuning Physics

- Tension
- Sympathetic vibrations
- Friction
  - across bridge(s)
  - tuning pins (stiction?)
- 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. **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
4. **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
5. Leverage leverage - turn your wrench with your locked **arm, not your wrist**
6. Use a guitar pick and **pluck gently** to reduce sympathetic vibrations
  - makes it easier for your tuner to hear the string you're tuning
  - reduces tension equalization across treble bridge strings
7. Treble bridge
  - tune one course (both sides) one side at a time
  - for each course:
    - 1<sup>st</sup> **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

## **Quickly Checking your Tuning**

1. Check octaves (for each bridge marker)
2. Check all treble bridge unisons
3. Walk up each scale quickly listening for dissonant courses (one string is out of tune)

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## **Tuning Challenges**

- 1) Low treble bridge friction (JRS dulcimers)
  - a) **Symptom:** after tuning both far sides of a course the first string's far side is no longer in tune – it's tension has equalized across the bridge due to the vibrations of tuning the other string. The same thing happens to the second string after adjusting the first string.
  - b) **Solutions:**
    - i) Tune the first string per course, far then near side (equalizing its tension) before doing the same with the second string
    - ii) Tune the near side first and just check the far side and adjust as necessary
- 2) 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
- 3) Waaaay 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
- 4) 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)