

**Finished**  
**12/11 Hammered Dulcimer**



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**Items included with Finished Instrument:**

**Instructions for Finished 12/11**  
**Pair Finished Hammers**  
**Tuning Chart (velum)**  
**Tuning Wrench**

## TUNING

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**1.** Before you can successfully tune this instrument, you must make sure the **TREBLE BRIDGE** is in just the right position. It must divide the vibrating portion of its strings into a perfect ratio of 2:3 in order to play a proper scale, because you will play some notes on the right side and some on the left, and the length of the strings helps determine their pitch.

You can slide the treble bridge sideways one way or the other to achieve this proper placement. You may make careful measurements and calculations to verify its location, or you may verify it "by ear", which is perhaps the better approach, since your ear is what will complain if the darn thing is out of tune! Here's how to go about it:

a) Pluck the lowest string (at the front of the instrument), on the right side of the treble bridge. If the string is so loose that it just "twangs", then tighten it up until you get a clear sound.

b) Pluck **THAT SAME STRING** on the left side of the bridge to see if that note is a musical fifth interval above the first note. "So, what is a musical fifth interval?" you ask.

The **FIFTH INTERVAL** is the span between "do" and "sol" on the scale. So if you pluck the string on the right side of the bridge and consider that note as "do", then you can sing "do, re, mi, fa, sol" and check to see if the note on the left side of the bridge (same string) matches the note "sol". Or, a quicker way to sing the fifth interval is to hum the song "Twinkle, Twinkle, Little Star". The span between the first "Twinkle" and the second "Twinkle" is a fifth interval. Of course, if you can't sing in tune, then you'll find this a worthless exercise! Go back to measuring the 2:3 ratio of vibrating lengths, or find a musical friend.... Seriously, you can obtain perfect accuracy regardless of your musical ear by using an electronic tuner. We offer a good one in our **MUSICMAKER'S** catalog.

c) Now, if the note on the left of the bridge is **HIGHER** than it should be (more than a fifth interval above the right side), then you must **LENGTHEN** the amount of wire on that left side of the bridge to lower the pitch. Do that by sliding the bridge to the right, just a little. Then test the interval again.

d) If the note on the left side of the bridge is **LOWER** than it should be (less than a fifth interval above the right side), then you must **SHORTEN** the length of wire vibrating on the left side of the bridge to raise the pitch. Do that by sliding the bridge to the left, just a little. Then test the interval again.

e) Once you are satisfied with the interval on the longest string at the front of the dulcimer, test it also on the shortest string toward the rear of the dulcimer. Use the same techniques for adjusting until you hear a perfect fifth.

f) Now that the front and rear of the treble bridge are correctly placed, you need only make sure that the rest of the bridge is lined up in a straight line between

the ends. That should ensure that all the strings will give a fifth interval from the right side to the left.

**NOTE:** If you happen to find a string that does not sound a fifth interval across the treble bridge, then something else is amiss. Chances are, the string is not making firm contact with the brass tube along the right-hand side. To correct this problem, you must unwind the string part way from the tuning pin and then re-wind it so that the windings go **DOWNWARD** toward the wood, making firm contact with the brass tube. (This is only important for strings that cross the treble bridge. No need to worry about those that cross the bass bridge.)

**WHEW! NOW YOU CAN ACTUALLY BEGIN TUNING....**

**\_\_\_2.** We like to start with just the bass bridge strings first, beginning at the lowest strings near the front of the dulcimer. You may want to cut out the tuning chart provided in the kit and slide it under the strings for ease in determining what note to tune the strings to.

**ALL PAIRS ARE TO BE TUNED IN UNISON**

The lowest pair of strings crossing the bass bridge will be tuned to the G below middle C. The next pair that crosses the bass bridge will be tuned to A below middle C and the next to B, and the next pair to middle C, etc, as shown on the tuning chart.

**IMPORTANT!** Be careful to check that you are turning the proper pin for the string you wish to tune. Then pluck the string and turn the pin while string is still vibrating so you can hear the pitch change and you can stop turning when you reach the proper tone.

Tune all the strings that cross the bass bridge, according to the tuning chart (note that you must skip every other pair of pins on your way toward the rear of the instrument).

**\_\_\_3.** Because the treble bridge is placed to give you a fifth interval from the right side to the left, you need only tune one side of the treble bridge -- the other side will automatically come into correct pitch. (That's the first break you've had in this project, huh?)

So, go ahead and tune the longest pair of wires at the front of the instrument to middle C# on the right side of the treble bridge. Tune the next pair to D above middle C and the next to E, etc, as indicated on the tuning chart.

**\_\_\_34.** Now, don't expect the instrument to be playable yet.... By the time you finish tuning the highest string on the treble bridge, the bass strings will have already gone out of tune. Don't give up! This won't happen every time. Two things are occurring that contribute to the problem on a new instrument: 1) the wire is actually stretching a little, and 2) the box is flexing slightly under the tension of all those strings.

Give the instrument a little time to adjust (say, overnight) and then tune it again. It should hold pretty well after the second or third tuning.

## **CARE AND FEEDING OF A HAMMERED DULCIMER**

**STRINGS:** You should not need to replace the strings of your instrument unless they break or become rusty. To prevent rusting, I simply wipe the strings occasionally with a rag dipped in household oil.

**TUNING PINS:** Occasionally we hear from someone whose tuning pins have rusted. This can happen if exposed to excessive moisture or salt water. So if you live in a humid climate or near the ocean, I recommend treating the tuning pins to an occasional oil bath too.

**WOOD SURFACES:** The main challenge will be to remove the dust from under the strings. Not that I mind a little dust, but when you finally decide to tackle the situation, I recommend pushing a rag through the narrow spaces with a small dowel or thin stick. You may wish to treat the rag with a dust-gathering solvent or a furniture polish -- that's fine. We often use Endust, Aulwood, Old English, or plain old Johnson's Lemon Wax. They all work well.

## **TONE ADJUSTMENTS**

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As you begin playing your dulcimer, you may find a need to adjust the volume or tone of certain areas of the instrument. You want a nice even volume from bass to treble.

If you wish to increase the sound of the low notes on the bass bridge, for example, you may slide the wood dowels away from the bridge a little bit. You may have to loosen the bass strings to accomplish this. A small adjustment (1/2") makes quite a difference in sound!

The same thing can be done with the dowels under the treble bridge. Sliding the dowels closer to the bridge will quiet the sound, and moving them further way from the bridge will make it louder. If you find the sound ringing or "howling" too much, you will want to slide the tone dowels closer to the bridge.

## ACCESSORIES FOR THE HAMMERED DULCIMER

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We carry a number of items to help you enjoy playing this unusual instrument. Here is a brief list of accessories – *please refer to our website our catalog for current pricing.*

Pair double-side hammers  
Gig bag for 12/11 Hammered Dulcimer  
Electronic Tuner (chromatic)  
External Pickup & Cord for Tuner

Scissor Stand kit, 25”  
Finished Scissor Stand, 25”  
Scissor Stand kit, 37”  
Finished Scissor Stand, 37”



Adjustable Hammered Dulcimer Stand kit  
Finished Adjustable Stand



Podium music stand kit (cherry)  
Finished Cherry Podium  
Podium music stand kit (walnut)  
Finished Walnut Podium



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