

Markwood Heavenly Strings & Cases  
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## Instructions for Computerized Stringing Analysis Form

Don't worry. We have been doing this since 1992 and will walk you through it. Because all folk/Celtic/lever harps have different harmonic curves and note ranges the strings need to be designed specifically for each harp, unless it is a known builder and model.

Please include \$15 payment with this form. Gut string designs, pedal harp, and other instrument string designs are \$20.

String #1 is the shortest string.

Measure the string lengths in inches to the nearest 1/4", in the smallest denominator. The string design program works only with inches.

Measure only the speaking or vibrating length of the string. Measure from the soundboard string hole to the bridge pin, **not the tuning peg**. (See attached)

**Please be sure to tell me if your harp does not have bridge pins.** (See attached)

Beginning in the left column, you will see "# "length". Mark the vibrating length of each string in the "Length" column, by their appropriate number.

Measure the size of the **inside** of the eyelet or string hole. **This is so the string will go through the string hole.** This is especially important for wound nylon strings. (See attached)

Please mark where the wound strings start, if any, and where the metal strings start, if any.

Tell us the string number of A-440 so we can tell the note range of the harp. Or count down to any red string and tell us the string #.

Tell us if your harp is metal, nylon, or gut strung. We can design for gut and then you can order them by string gauge from Lyon & Healy West.

Tell us anything else that may be good to know about your harp, such as, if there are structural problems, cracks, bowing soundboard, bent neck.

When harp strings are designed the strength of the harp is taken into consideration, as well as what the harpist desires as far as sound and tension. A 36 string harp can have over 1200 lbs of pressure from the strings.

**String design is based on the information you give us.** Strings are custom made and not returnable which is why we require accurate information. In the case of human error we will work through it.

Please read instructions first. Please include a check for \$15.

#	Length	Desired Size
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____
17	_____	_____
18	_____	_____
19	_____	_____
20	_____	_____
21	_____	_____
22	_____	_____
23	_____	_____
24	_____	_____
25	_____	_____
26	_____	_____
27	_____	_____
28	_____	_____
29	_____	_____
30	_____	_____
31	_____	_____
32	_____	_____
33	_____	_____
34	_____	_____
35	_____	_____
36	_____	_____

Date \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Phone \_\_\_\_\_

Fax# \_\_\_\_\_

Email address \_\_\_\_\_

Name of maker \_\_\_\_\_

Model name \_\_\_\_\_

\_\_\_\_\_

A-440 is string # \_\_\_\_\_

Harp is: \_\_\_\_\_ nylon strung \_\_\_\_\_ metal strung  
 \_\_\_\_\_ gut strung

\_\_\_\_\_ analyze sizes given for this harp  
 \_\_\_\_\_ calculate best sizes for this harp  
 \_\_\_\_\_ both

\_\_\_\_\_

This information is helpful for us to design a tension that is appropriate for the strength of your harp.

Harp weight \_\_\_\_\_

Max soundboard width \_\_\_\_\_

Soundboard thickness \_\_\_\_\_ tapering to \_\_\_\_\_

Harp is to be: \_\_\_\_\_ lightly strung \_\_\_\_\_ medium strung  
 \_\_\_\_\_ heavy (like a pedal harp)

\_\_\_\_\_

Size of the string holes in the soundboard are necessary so we don't send you a string that is too big to go through the holes.

Interior diameter of grommets is as follows:

\_\_\_\_\_ from string # \_\_\_\_\_ to # \_\_\_\_\_

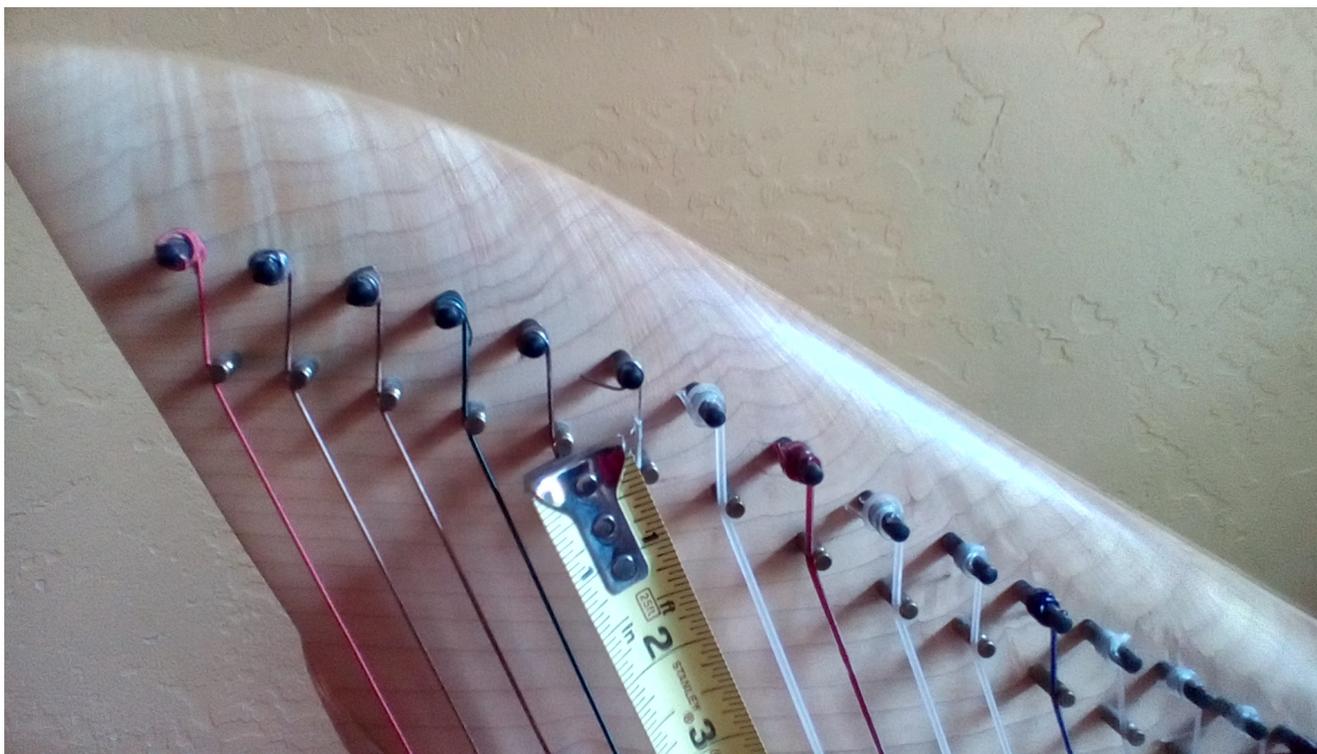
and \_\_\_\_\_ from # \_\_\_\_\_ to # \_\_\_\_\_

## MEASURING THE VIBRATING LENGTH OF A STRING.

It is very important to measure the vibrating length to the bridge pin, not the tuning peg. It can really throw off the winding especially for nylon/nylon strings.

You can see on the string that is next to the red one that it is okay for the winding to go around the tuning peg, but only the core should go through the peg.

Having the correct vibrating length will prevent the winding being too long. And if you cut a wound nylon string the winding will unravel and ruin the string.



## MEASURE THE **INSIDE** OF THE EYELET OR STRING HOLE

This is important so harp strings will fit through the hole. It is especially important for wound nylon strings which tend to be larger diameter than monofilament nylon or bass strings.

The inside diameter of this eyelet/string hole is  $1/8$ " , or .125".

You can enlarge the hole with an abrasive cord and replace the eyelet with a larger one. This will allow room for a larger diameter string which is sometimes needed if you would like a higher tension string.

If your string is breaking at the bottom it indicates a burr or rough spot on the string hole. The string will continue to break until this is fixed. Ask for abrasive cord and a new eyelet.



## Bridge Pin



Please let me know if there are no bridge pins on your harp. It makes a difference in how the nylon/nylon and bass strings are designed and wound.

This is the placement of a bridge pin. It is between the lever and the tuning peg.

The string goes over the bridge pin at an angle before winding on the tuning peg.

The bridge pin may be brass, black, or silver color.

The bridge pin is the place where string vibrating stops, so from the string hole in the soundboard to the bridge pin is the vibrating length.

## Introduction to Beautiful Markwood Harp Strings

Harp strings and string physics are very specialized so don't feel bad if this is new to you. Please let me know if you have questions after reading this.

If a string is breaking at the bottom it is usually a rough spot or burr on the eyelet or in the string hole. Breaking will continue until this is fixed.

If a string won't stay in tune the peg is slipping. Back it off and push in very hard while tuning.

*Be sure to tell me in writing if there are no bridge pins.* It makes a difference in how nylon/nylon strings are wound.

**String sets** Strings are made to order so I need the correct string chart or model of harp. Custom made strings are not returnable. If you don't have a string chart or know the model please fill out a CSA form to have strings designed specifically for the harmonic curve and note range of your harp.

The **vibrating length**, or speaking length, is measured from the sound board to the bridge pin, not the tuning peg.

String design and the length of winding is dependent on the vibrating length so it is important to give me the correct information. Custom made strings are not returnable.

**Wound nylon strings** are wound to vibrating length plus 1" to accommodate for the thickness of the sound board and string rib.

Because all harps and string ribs are different in thickness the winding may end up near the bridge pin, or winding on the tuning peg, but not through the hole of the tuning peg. The core will go through the tuning peg hole.

**Metal strings** are wound to vibrating length plus 3".

It doesn't matter whether the Wound part goes through the hole in the tuning peg. Most likely it will, but if just the core goes through the peg hole that is fine too.

Here is a link to the String Installation Guide that is on my website.

<http://markwoodstrings.com/harp-string-installation-guide/#.WKSb8H9LhPY>

Laurie Nielsen, Master String Maker for 26 and a half years :)

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