ParaHarp-26© Deluxe Harp Kit

Instruction Plans

Ver. 01-2022

Before You Begin:

A) ____ Identify & count all components, parts & pieces. For the list, see Appendix on pages 11 - 13 at the end of these Instructions.

(If something is missing or broken, notify us immediately so we can fix the situation sooner than later. Contact information came with these plans & on our website store where you bought this kit.)

- Identify & follow all recognized standard safety protocols when working with any & all tools and materials.

- By purchasing this harp kit, you become solely responsible for your own safety during construction and for the results of the harp such as its playability, its long-term durability and for its appearance. Still, we are here to help along the way in case things might happen to go not as ideally planned.

- Second, read this entire Instructions Plan Set to become familiar with all steps before performing them.

- Note & obey all construction ***Cautions*** as you perform these Instructions to build your harp.

- The harp picture, Figure #1, shows what your harp should look like when finished (models & colors will vary to a some degree).

Figure #1

____ **Caution!** Never force a screw into its hole. If excessive force is necessary, the screw is likely not lining up with its hole. Realign the parts so the screws twist more easily into their pre-drilled holes.

____ **Caution!** Always be careful not to let the screwdriver slip & scratch the finish of your Harp or more importantly, not poke your eye! (Protective eyewear is recommended, especially if you are not too familiar with using a screwdriver.)

____ **Hint:** If a screw might be somewhat harder to screw in & you are confident all parts are lined up correctly, remove the screw & thoroughly rub the screw's threads with a candle, beeswax or a very dry bar of soap to provide it with some helpful lubrication. (Never use any water or liquid on the internal wood of your harp!)

____ **Hint:** The symbol below used in place of an *inch* is **"**. *Example: 1" (one inch).*

Figure #2 *(Included Handle not shown)*

To Begin:

B) ____ Lay out all wood & hardware components. All disassembled harp components will look similar to the harp pictured below in Figure #2. Before you begin, please, remove any packing, tape, etc., as necessary.

C) ____ Find the:

- Sound Chamber (Box) *Figure #2*
- 2 Feet *Figure #3*

____ Using the supplied screwdriver & its #2 Phillips & #2 Square bits, use 2 long, 2-1/4" screws & 2 short, 1-1/2" screws to install the 2 Feet to the bottom of the Box. (See figure #3 below.) The long screws attach near the front of the harp, the short ones at the back.

____ The Left & Right foot assemblies are labeled as L & R, respectively. With the harp's Box in front of you, with its back facing you & the Soundboard facing forward away from you (as would be placed in its typical playing position), the Left side of the Box is now on your left. The Feet Rubber Pads will face down to the floor.

The Feet mount to the Box as far to the left & right as possible. The pre-drilled Box screw holes will line up with the Feet screw holes once properly aligned.

D) ____ Locate the Neck/Harmonic Curve [Neck for short]. (Figure #4)

E) ____Install the Neck upon the Box using the two 2-1/2" Neck Phillips screws. (Figure #5) When installing the Neck, be careful not to bump or drop it. As you sit the Neck upon its position on the Box, work slowly so as to not mare the finish of the Box wood parts & pieces. Once the Neck is fully set down upon the Box's connection rail, screw it together. Carefully adjust the Neck left & right, up & down slightly until the first screw more easily enters through the Neck & into the connection rail. Tighten both screws firmly only after the Pillar is installed.

____ **Caution!** Hold the Box stable as you place the Neck onto it. In addition, be sure that the Box is always supported so it doesn't tip over once the Neck is installed upon it. Place it on its side, on a protected surface, if necessary.

Figure #3

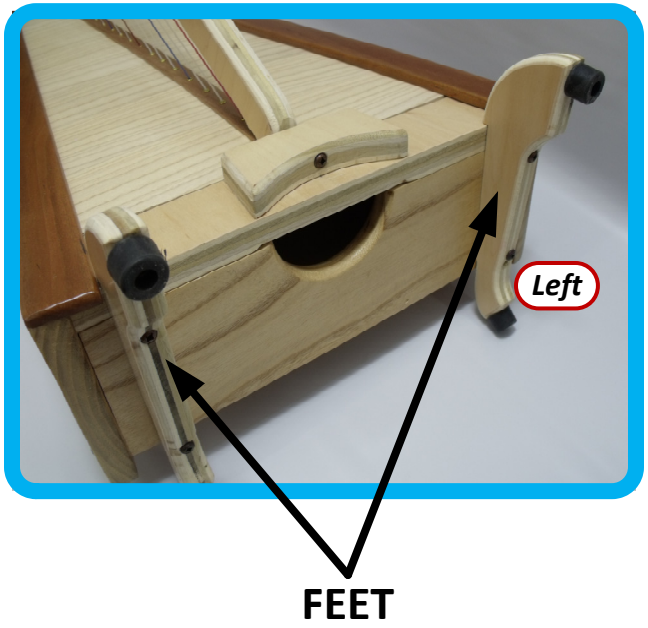


Figure #4

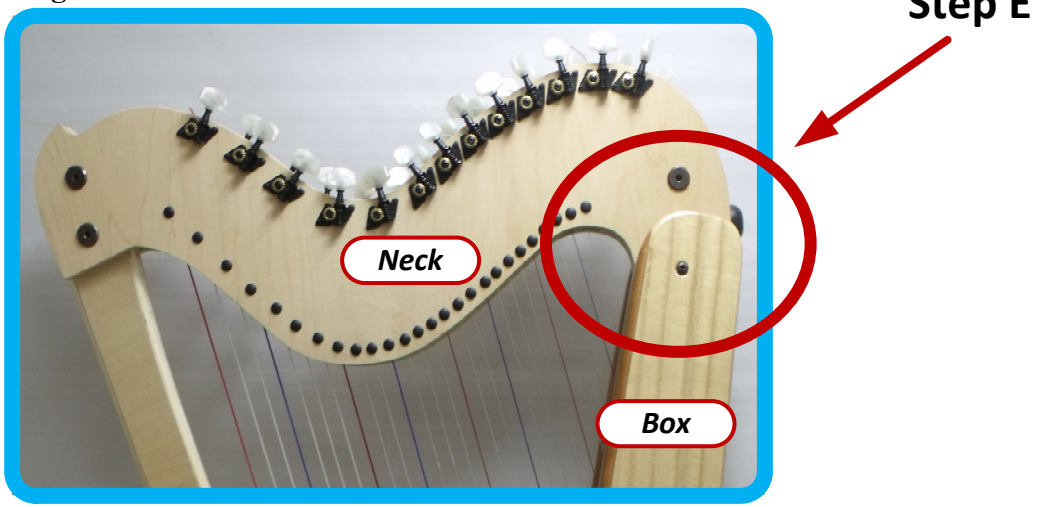
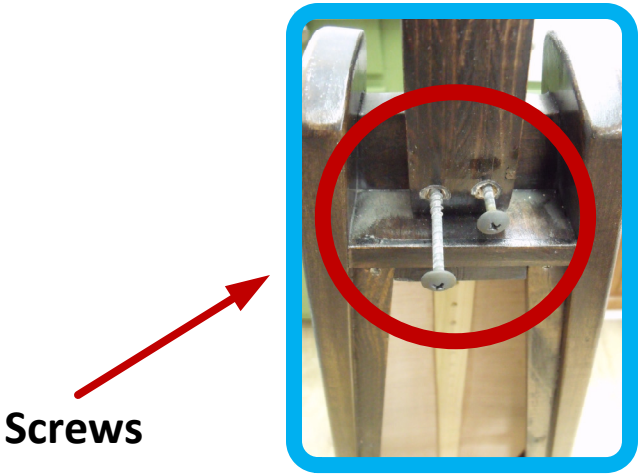


Figure #5



F) ____ Next, place the Pillar upon the bottom of the Box onto its support block & slip its top into its position within the Neck. (Figures #6 & #7)

G) ____ Following figure #6 below, after removing the temporary shipping block & the permanent Furniture Nut/Bolt assemblies from the Neck, reinstall the 2 Furniture Bolt & Nut assemblies back through the Neck into & this time through the Pillar. Note that each Bolt assembly will have a thinner bolt head and the Nut assembly will be fatter. Be sure to install the Nut into the larger of the two holes on the Neck. *(Remember to continue to support the Box & Neck.)*

____ Use the supplied 5/32" Allen key to slowly tighten the Bolt/Nut assemblies, loosely at first; do not tighten yet. After installing the lower Pillar screw (next step in Figure #7), then tighten the Bolt/Nut assemblies very firmly but, do not tighten so strongly as to distort the wood surfaces.

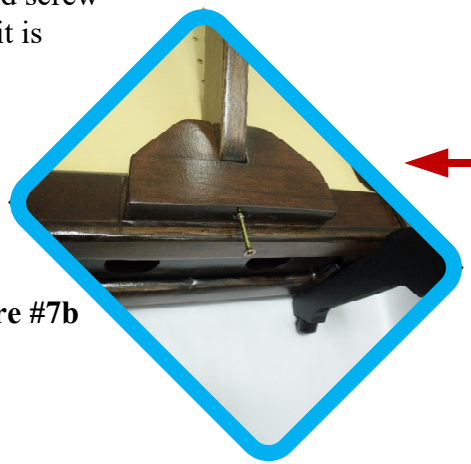
Be sure the Bolt is aligned straight into the Nut before you turn it very far. This is so you won't possibly cross-thread the assembly, making it difficult or impossible to screw together. Start slowly & straight first using your fingers and the assembly will screw together very easily once started properly.

H) ____ Next, once the Pillar is in place, top & bottom, install one long, 2-1/2" Phillips screw through the bottom of the harp where the Pillar sits on its center-front support block & pushed up against the Soundboard. The pre-drilled screw holes will align properly. If not, reposition the Pillar slightly to be sure it is located correctly. (Figure #7a & b)

Figure #6

Figure #7a

Figure #7b



I) ____ Next, with the Harp sitting upright on its feet, be sure the unit does not wobble on its Rubber Pads. When the Feet are installed properly, the harp will sit stable on a flat floor. If not stable, first be sure to check you have confirmed a flat floor surface before performing the following adjustment (before it becomes necessary).

____ Support the harp on its back or side on a non-marring surface. Now, remove one of the Rubber Foot Pads that seems to be too high & place an optional, adequate sized washer between the Pad & the wood of the Foot (1/4" or 5/16" small fender washers). Screw the Pad back on & test for level & stable standing. It is OK to add another washer on another Rubber Pad if necessary, following the above adjustment suggestion. You should never need two washers under one Foot. (See Inset)

J) ____ With the harp standing stable on the floor or a low table or, laid over on its face on a non-marring surface (laid upon the Neck/Pillar joint & the on front of the Feet), remove the Back Panel. (Figure #9 on page 7)

____ Keep track of all screws and the lengths and from which holes the screws came from. Some are longer than others are; some are different styles; particularly, the center one, the top two, & the two Handle screws.

K) ____ Next, add the short inner ¾" screw to the Pillar at the bottom of the inside of the harp Box. The hole will line up with the hole in the Pillar at this position. (Figure #8-1)

Inset

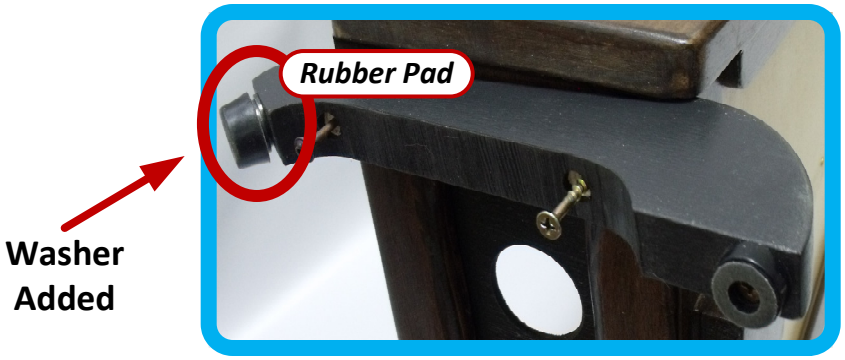
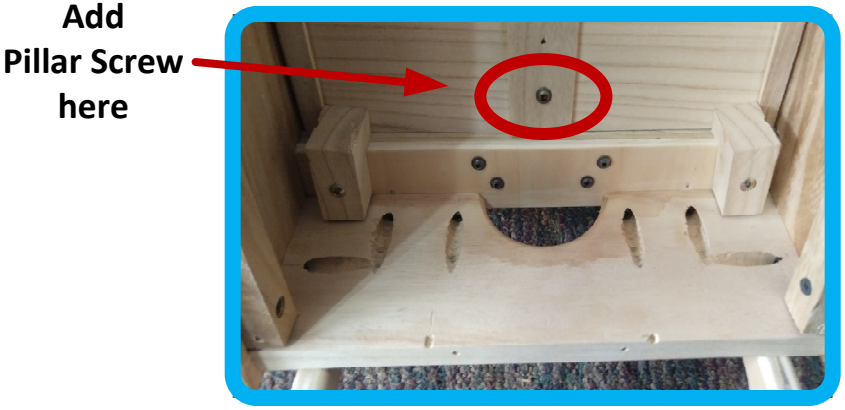


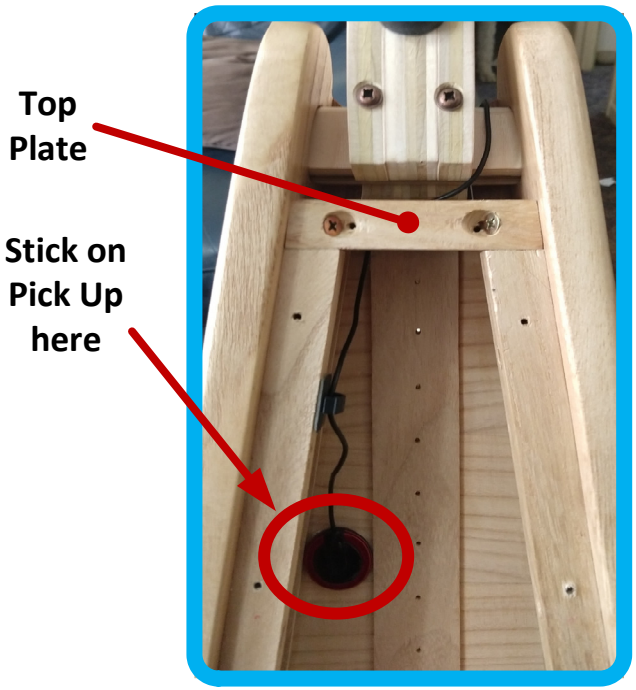
Figure #8-1



L) ____ Also, add the Tuning Pick Up to the back of the Soundboard. First, remove the Top Plate by removing its two pocket screws. Slide the Top Plate straight out of the back and run the Pick Up's cable in the front middle where the Top Plate, once reinstalled, will contact the Soundboard but, won't pinch the cable. (Figure #8-2)

____ Reinstall the Top Plate. Stick on the Pick Up to the Soundboard but not to the center or side string ribs. It will sit quite high up near the top of the Soundboard. Run the cable in such a way it will not buzz on the Soundboard when playing the harp. Keep the ¼" Jack set outside between the Neck & Top Plate. (Figure #8-2 & Inset)

Figure #8-2



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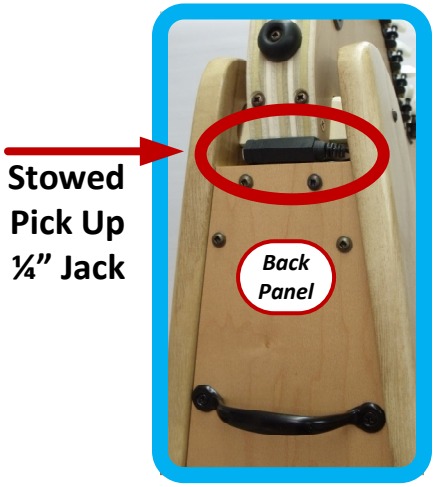


M) ____ Next, referring to the string chart for you harp & figure #9, starting with the bottom, longest string (Red C, wound bass string), insert it from the inside back of the Soundboard & out to the front. Carefully thread it through & past the opening of its string grommet & around the Pillar.

____ The wound bass strings will have a bit of a Knot at the top of the string where the outer Winding stops at the string's Tail. Be careful not to damage this Knot when pushing it out thought the grommet. If damaged, the unwarranted string will come unwound and a new string, at extra cost will become necessary to take its place.

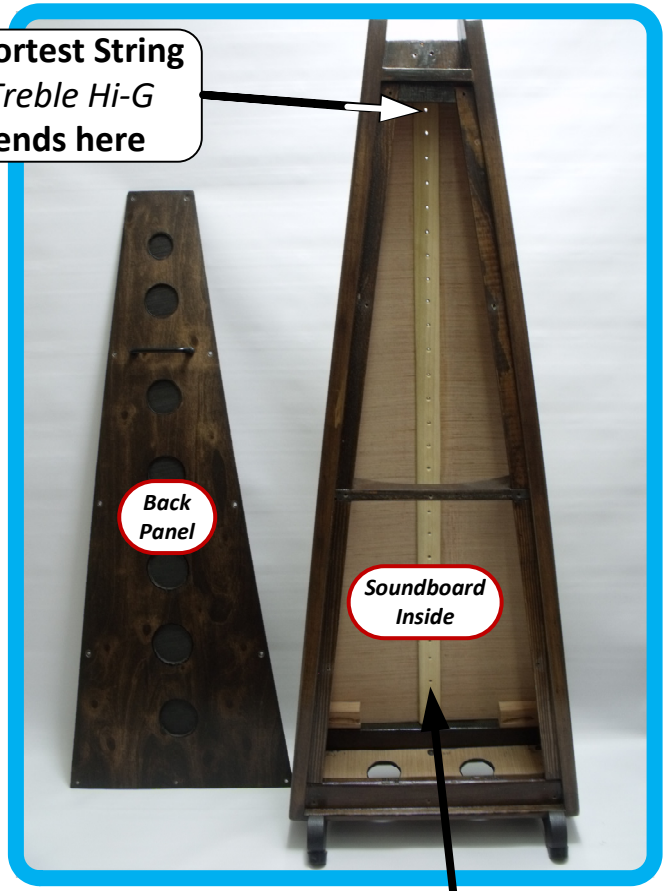
____ Carefully insert & pull each remaining bass string out & up to its leather pad. Lay each & every string aside until all 26 strings are installed.

N) ____ Next, install the remaining treble strings in the similar manner to the bass strings. You will first need to add the string bead & knot before installing the string through the Soundboard. Continue following the numerical & note order of the strings, longest, lowest note (Red C) up to the shortest, highest note (Hi-G) at the top of the harp. When installing any string, be sure not to push out its grommet. If so, simply push it back in. (See page 8 for treble string knot tying.)

O) ____ Next, install each string onto each of their corresponding tuning mechanisms located on the Neck starting again with the bass strings (bottom Red C) & work your way to the top Hi-G note/string. (See pages 8 – 11)

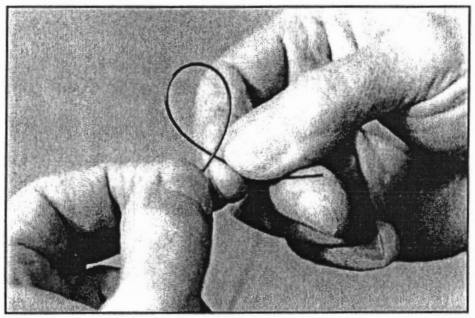
P) ____ Next, re-install the Back Panel using the same screws from the same locations as they were taken out from. Add the Handle last using its two color-matching small Phillips screws. (Inset)

Figure #9

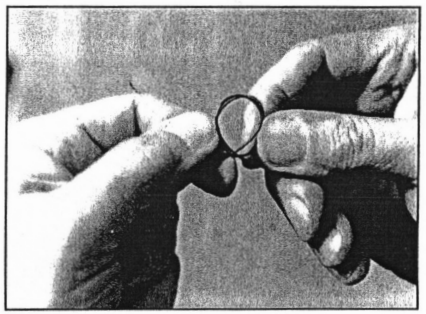


Inset

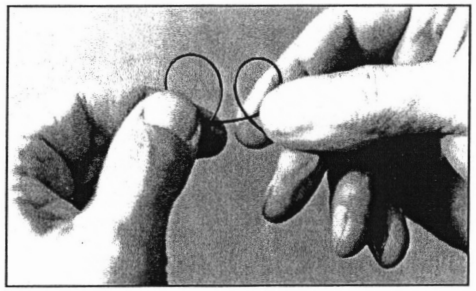
KNOT FOR MONOFILAMENT STRINGS



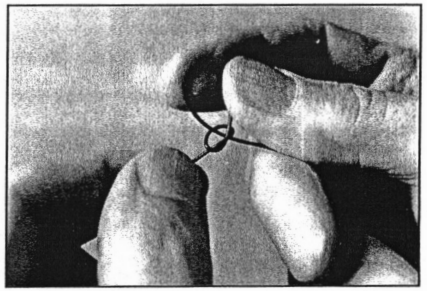
Make a loop on the right side.



Put right loop into left loop.



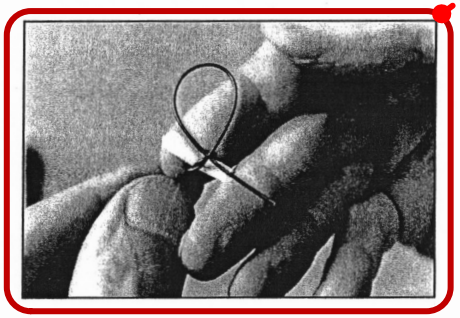
Make a loop on the left side.



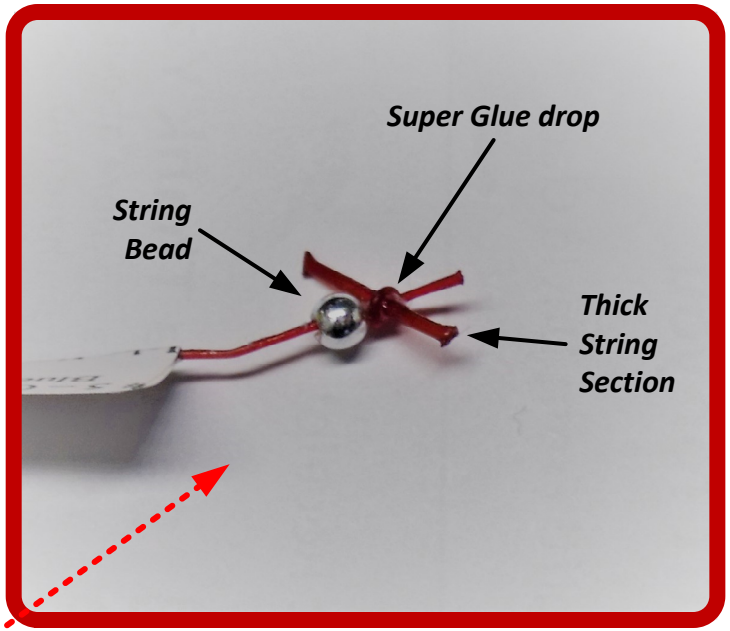
Tighten left loop around right loop.

Insert thick section of string or small wad of paper into left loop on thinnest 8 strings.

If all this seems too intimidating, try putting a drop of super glue on the knot. Just watch that you don't glue your fingers together!



Bead Knot Close Up

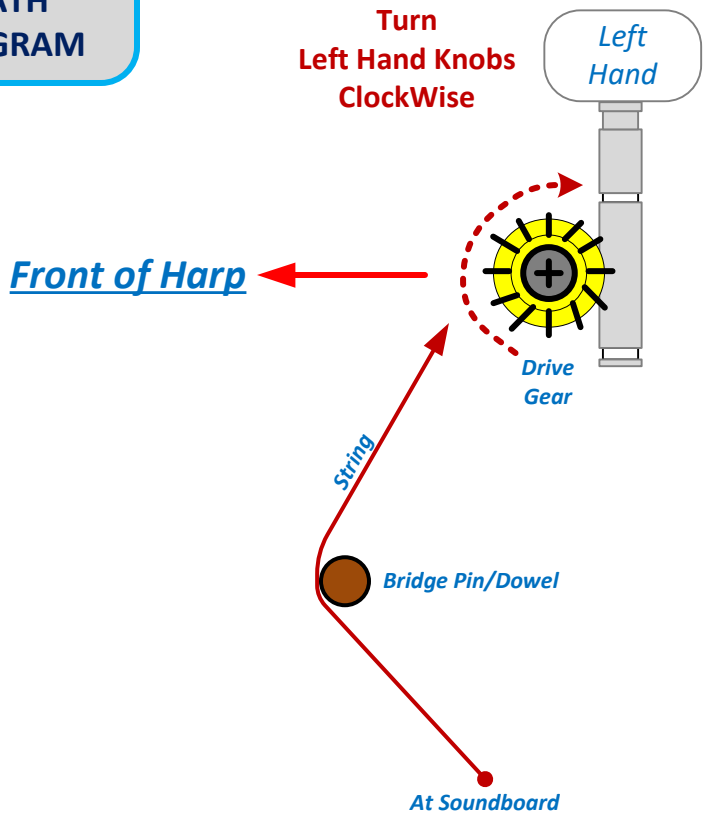


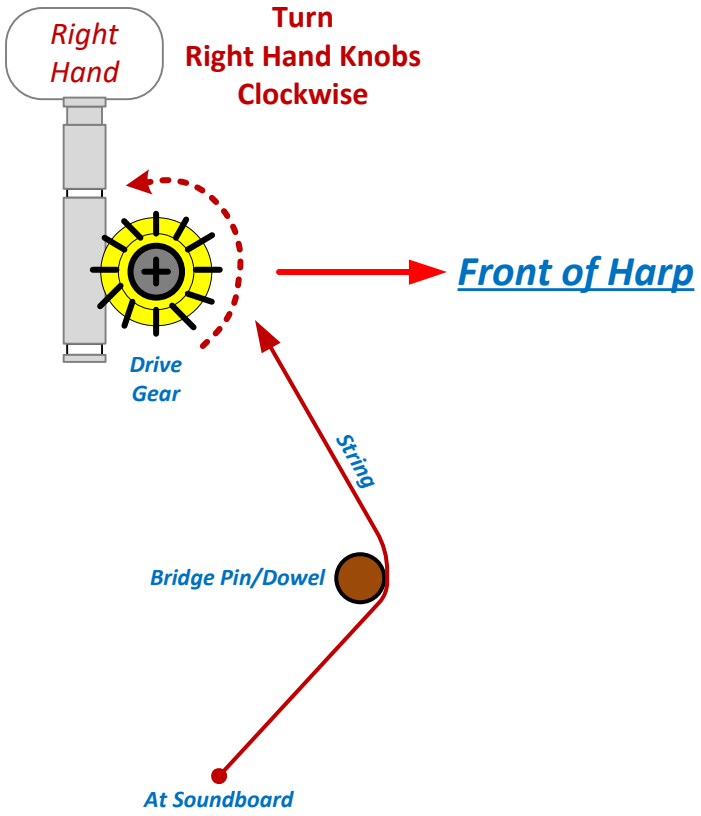
Add bead after the super glue is added and press the bead onto the knot with firm pressure for a few seconds to set the knot.

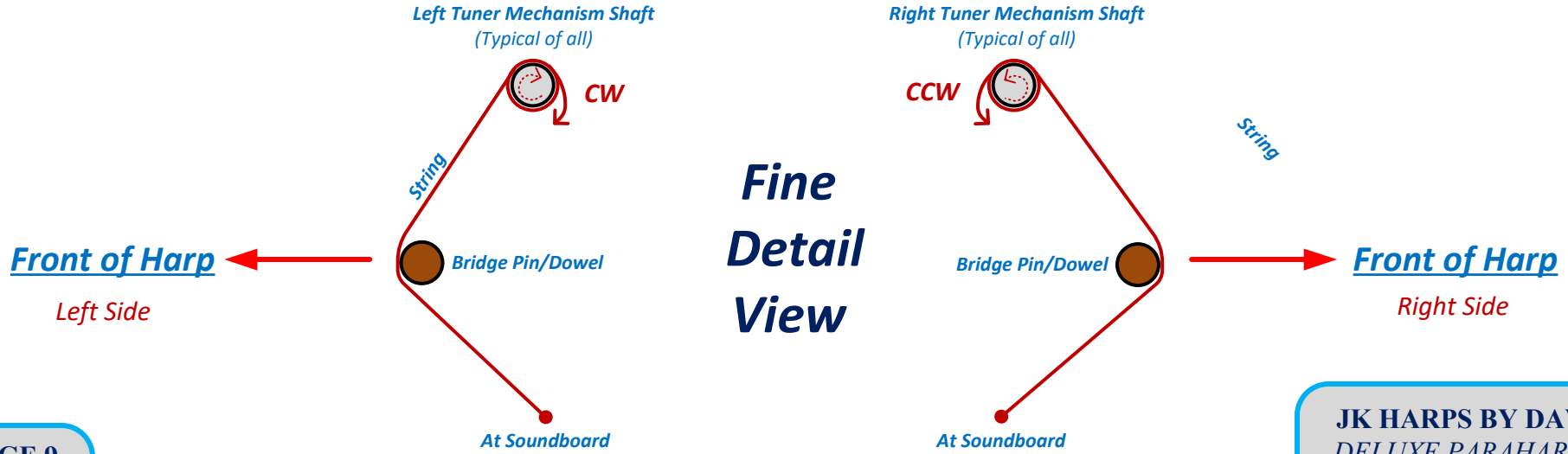
(Keep fingers out of the glue.)

It is not necessary for the bead to be stuck to the glue.

STRING PATH DETAIL DIAGRAM







ATTACHING STRINGS TO YOUR HARP'S TUNER MECHANISM

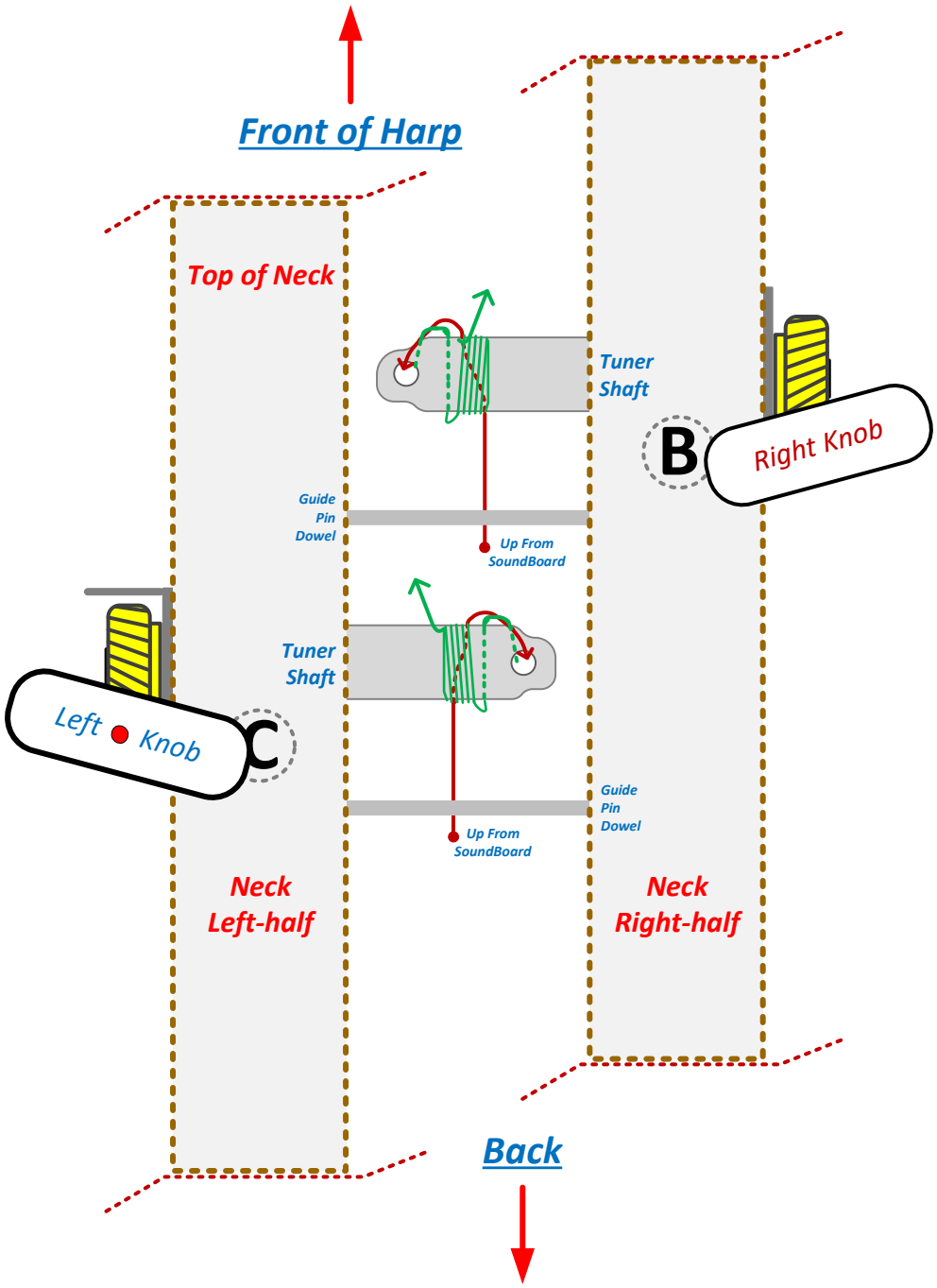
STRING ATTACHMENT & WINDING

Note:
1) Each string starts to thread on the tuner shaft opposite of its tuner knob.
2) Each right-hand tuner knob turns Clockwise to tune up to the note; Left-hand turns clockwise.

1) Begin with the string coming up from the soundboard and in front of and under the Bridge Pin/Dowel.
2) Bring string up to the tuner shaft (Front on both Left & Right). (Use the supplied **string threading hook** to assist getting the strings up to the tuner shafts.)
3) Thread the string [red] through the hole farthest from the knob.
4) Bring out [green] and wind on the tuner shaft.
5) Before winding, pull the string to seat the string in the hole edges leaving plenty of slack in the string coming up from the soundboard, holding the leading edge of the string as long as you can while beginning the winding movement in #7 below.
7) Both Left & Right Hand shafts will bring the string up from the front of the harp, up from the Bridge Pin/Dowels. Wrap the string appropriately.
8) Continue to wind the string, using the supplied **string winder** until the string is relatively firm.

Ensure that the string remains in the middle of the Bridge Pin Dowel as it is tightened up to pitch. It is easier to do this before the string has too much tension on it.

(Go to **Step 9** on the next page.)



String Color Steps
Red = Step A
Green = Step B

ILLUSTRATED TUNING ROUTINE FOR YOUR HARP

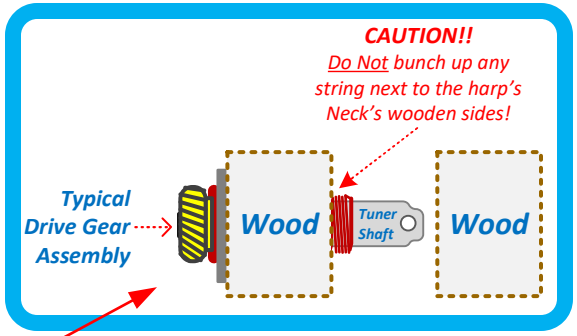
IMPORTANT!
Keep the string away from the wood edge while winding up the string. Wind it away, towards the middle of the shaft. Allowing string to build-up along side the wood will eventually lock up the tuner movement & severely damage the drive gear on the string tuner mechanism. (See above Caution!!)

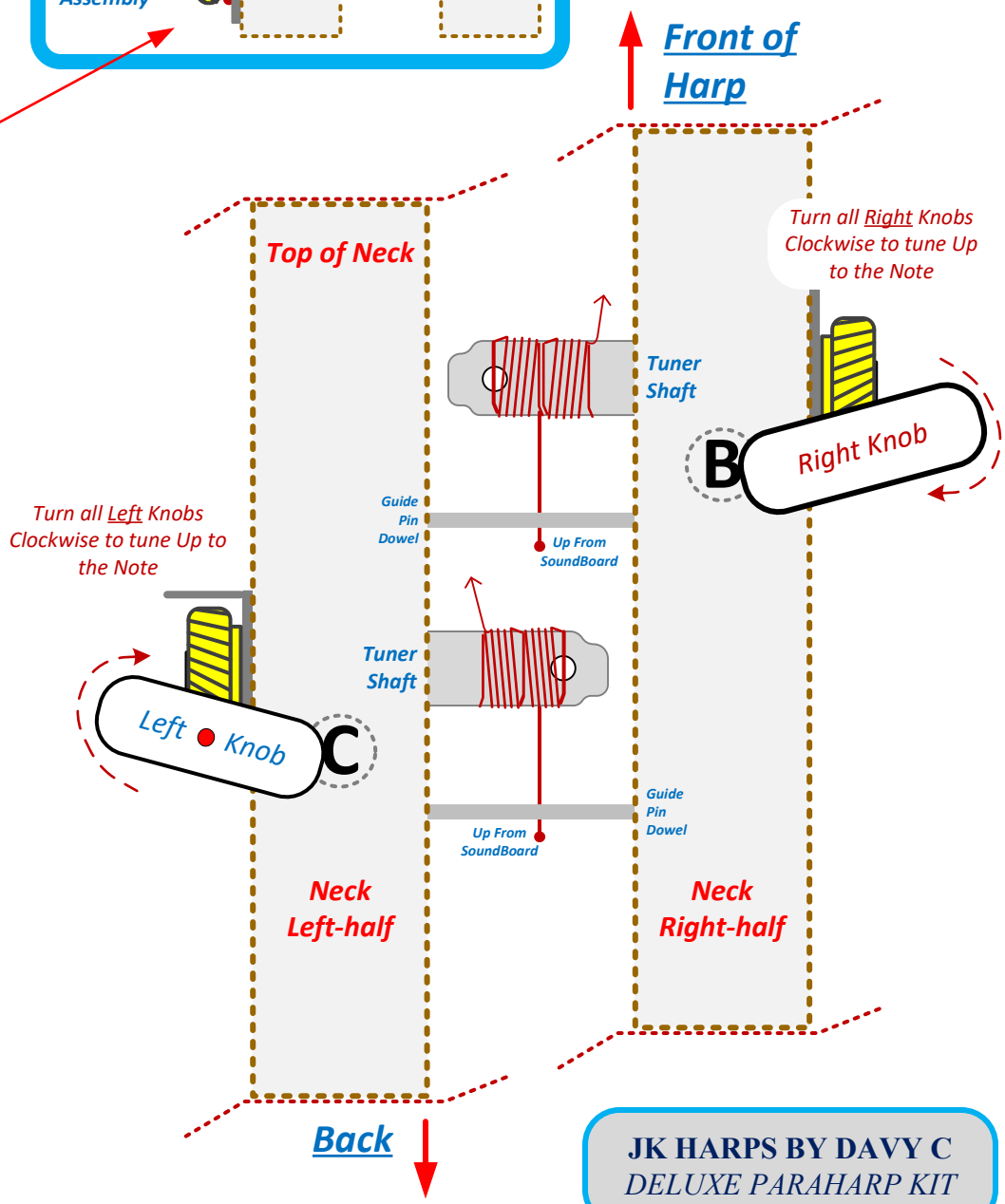
9) As the string gets tighter, switch to winding using the supplied **tuning wrench** or your fingers.
10) Ensure the string continues to wind towards the *center* of the tuner shaft, away from the wood (side) as the shaft turns.
11) Once the string starts to get significantly tighter, use the supplied **electronic e-Tuner** to find the correct note. 1) Pluck; 2) tune & 3) turn more (if needed) until the string is at its correct pitch (note).

CAUTION!
DO NOT OVER-TIGHTEN!

12) Once you are certain the string is wound tight enough while playing the correct note and will not slip while the tuning shaft is turned, you may cut the string leaving around 1 to 2 inches of length and stuff it down into the Neck space (You may want to wait a week.)
13) If you hear buzzing noises when the harp is being played, especially with midrange and bass notes, check that some excess string end is not causing the noise. If so, redistribute the string end so it is not so loose as to buzz.

***Hint:* When retuning your harp each time after the above initial tuning, start with the Low C then, tune the next C up through to the last C. Next, tune all the Fs, bass up to treble. Then, in similar manner, tune the As, then Ds, Gs, Es, & Bs.**





APPENDIX

The separate component parts & tools that come with your harp kit are as follows (Figures #10A & #10B):

____ Harp Components:
- __ Pre-built Box *with Soundboard & Back Panel pre-installed*
- __ Pre-built Neck/Harmonic Curve *with all tuning hardware & bridge pin dowels pre-installed*
- __ Pillar
- __ 2 Feet *with four Rubber Foot Pads pre-installed*
- __ Handle *(not shown in figure)*

____ Various Hardware
- __ 2- Furniture Bolt/Nut Assemblies *for the Neck to Pillar Junction*
- __ 2- Long 2-½" Phillips Screws *for the Neck to Box Connection*
- __ 1- Long 2-¼" Round Head Phillips Screw *for the Pillar to lower Support Block Junction*
- __ 1- Short ¾" Pocket Screw *for the internal Soundboard to Pillar Connection*
- __ 2- Long 2-¼" Pocket Screws *for the two Feet, front*
- __ 2- Short 1-½" Pocket Screws *for the two Feet, rear*

____ Construction Screw driver *with #2 Phillips, Straight & #2 Square bits*
____ 5/32" Allen Key
____ Deluxe nylon String Set *with pre-installed, bass string leather pads & separate treble string knot beads*
____ String knot super glue & nylon knotting string
____ Custom improvised tuning wrench
____ Custom improvised string-threading hook
____ String winder
____ Internal Tuning Pick Up *with corded ¼" Jack (For use with optional deluxe electronic note tuners.)*
____ Clip-on Electronic Note (Guitar) Tuner *(Does not use a quarter inch jack)*
____ Complete Instructions Plan Set
____ An Instructions Plan Set in, color PDF format, can also be found on our harp kit website located at:
https://www.johnkovac.com/pages/davy-c-harp-resources-links

Figure #10A

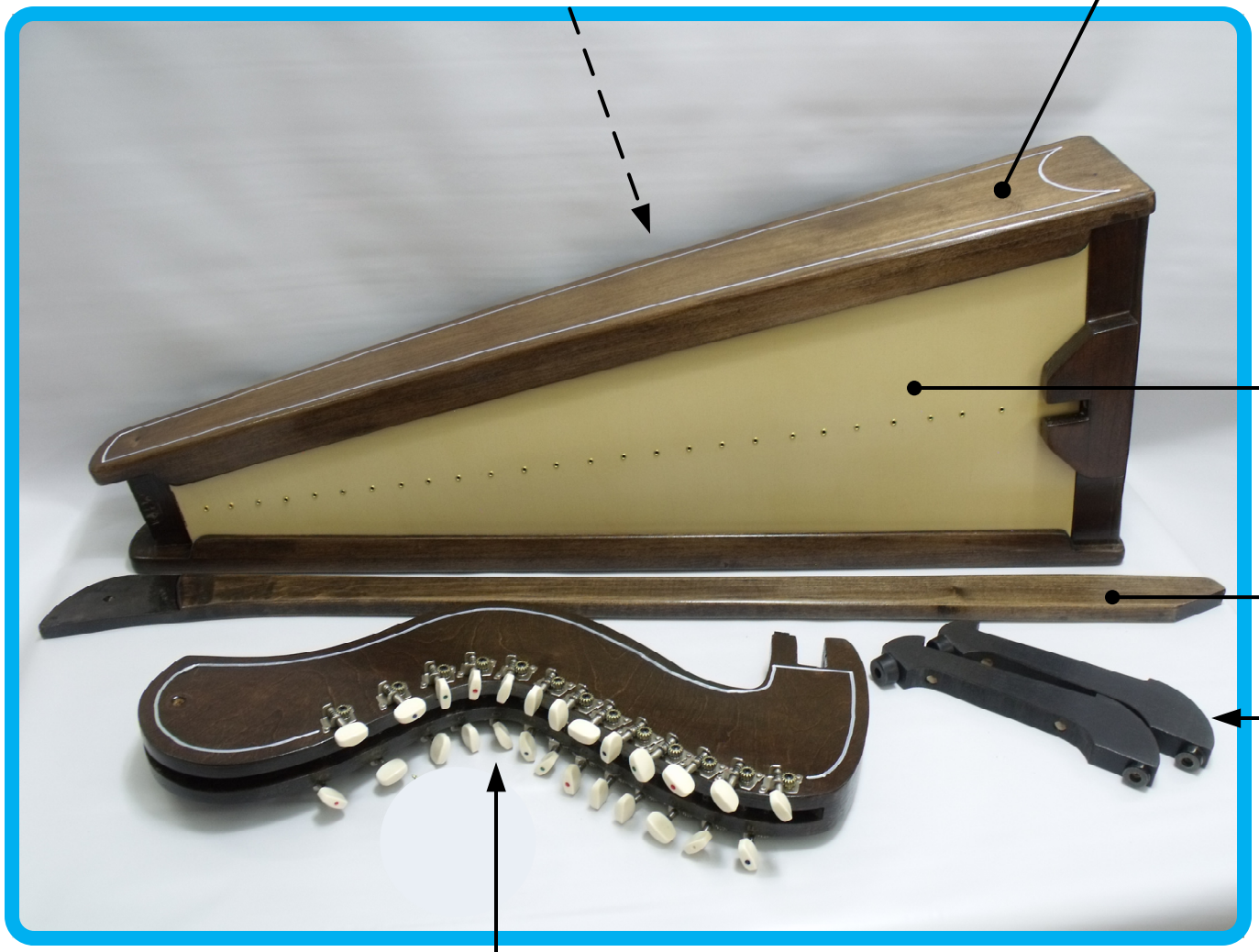

BACK PANEL
(AT REAR OF BOX)
BOX
(SOUND CHAMBER)
SOUNDBOARD
PILLAR
FEET
NECK

Figure #10B


STRING SET
BEADS
GLUE
E-TUNER
SCREWS
FURNITURE BOLTS/NUTS
HOOK
5/32" ALLEN KEY
TUNING WRENCH
STRING WINDER
#2 SQUARE BIT
PHILLIPS BIT
SCREWDRIVER SET
TUNING PICK UP
HANDLE
4-IN-1 SCREWDRIVER
P-007

WEIGHT: 12 lbs max

STRING CHART

TREBLE STRING COURSE

Note (& Color*)	Size (10s of an Inch)	Length, Pre-Cut (Inches**)
1G	.020	20"
2F *Blue*	**.020**	**20"**
3E	.025	25"
4D	.025	25"
5C *Red*	**.025**	**25"**
6B	.025	25"
7A	.028	27"
8G	.028	27"
9F *Blue*	**.028**	**27"**
10E	.028	27"
11D	.032	29"
12C *Red*	**.032**	**29"**
13B	.032	29"
14A	.036	32"
15G	.036	32"
16F *Blue*	**.040**	**34"**
17E	.040	34"
18D	.040	34"
19C *Red*	**.040**	**34"**

**Strings w/o Color are Clear*

***Purchase Length*

BASS STRING COURSE

Note (& Color*)	Size** (10s of an Inch)	Vibration Length*** (add 6" for Tail)
20B	.032/.008	21-1/8"
21A	.032/.009	22-5/8"
22G	.032/.010	24-1/8"
23F *Blue*	**.036/.010**	**25-7/8"**
24E	.036/.010	27-5/8"
25D	.036/.010	29-5/8"
26C *Red*	**.040/.010**	**31-7/8"**

**Strings w/o Color are Clear*

***Bass Strings are two nylon strings; one larger wound around a smaller core.*

The outer wrap is cut away from the core where the string attaches to its tuning mechanism on the Neck (the Tail).

**** " = Inch*

NOTE: *All ParaHarp Folk Harps use Nylon strings only.*