

REVERIE HARP KIT



MUSICMAKERS KITS, INC

PO Box 2117

Stillwater MN 55082

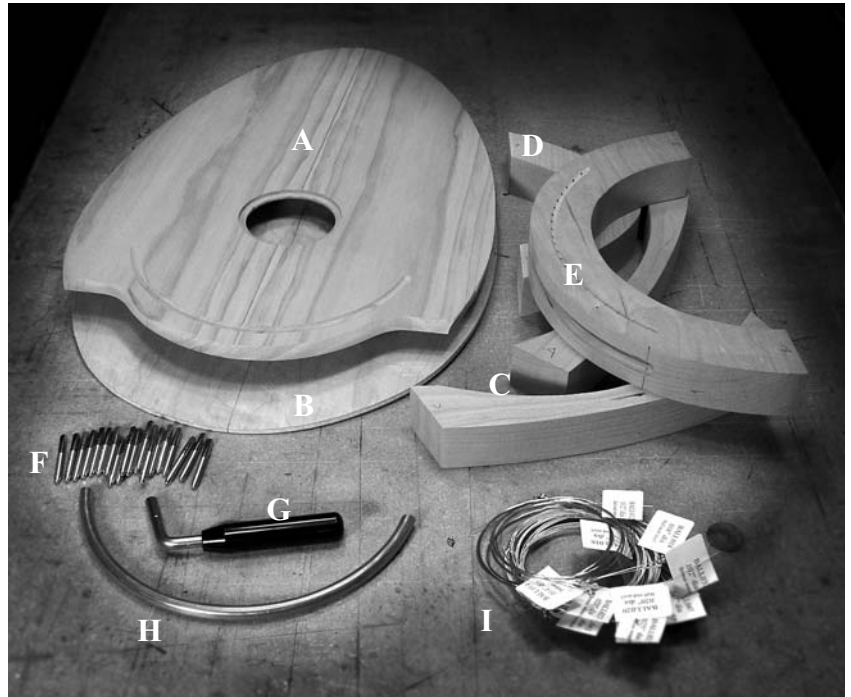
651-439-9120

www.harpkit.com

Reverie Harp Kit Parts

- A - Soundboard (front), softwood
- B - Back, veneer ply
- C - 2 Side frame pieces, solid hardwood
- D - Head end, curved solid hardwood
- E - Tail end, curved solid hardwood
- F - 22 Tuning pins
- G - Tuning wrench
- H - Brass bridge tube, curved
- I - Set of 22 strings

- 22 Medium brass eyelets
- 22 tiny brass washers (packed in string set)
- Drill bit, 3/16"
- Large rosette
- Flat Pick
- Tuning Chart
- Assembly instructions



Please take the time to check over the parts of your kit now, to make sure everything is there. If you discover a problem, call us right away so we can rectify it quickly without causing you much delay in your project.

A NOTE ABOUT GLUE

We strongly recommend that you use a modern woodworking glue for assembling the wood parts in this project. The yellowish Aliphatic Resins (such as Elmer's Carpenter's Wood Glue or Titebond I) are best for wood because of their excellent holding power and simplicity of use.

When gluing parts together, be sure to put enough glue on the joint to wet the entire surfaces to be joined. A good sign of proper gluing is that a little excess will squeeze out around the joint when clamping pressure is applied. Too little glue may cause the parts to separate later, whereas too much glue makes things messy. We always keep a damp rag handy for quick cleanup, as necessary. It is especially helpful to keep your fingers clean while gluing, because gluey fingerprints have the embarrassing tendency to appear on the finished product in places you never expected.

GLUING THE BOX TOGETHER

1. Begin by dry-fitting the frame parts. Note that two side pieces have a dot at one end. This end should point toward the top of the instrument. This will create the egg shape of the instrument, as shown.

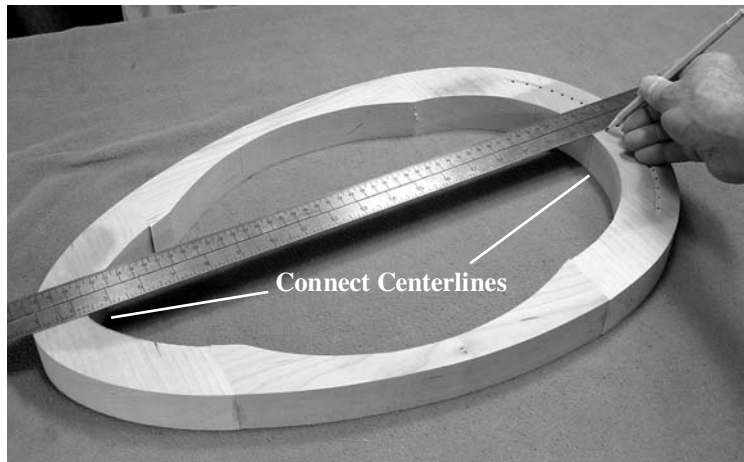
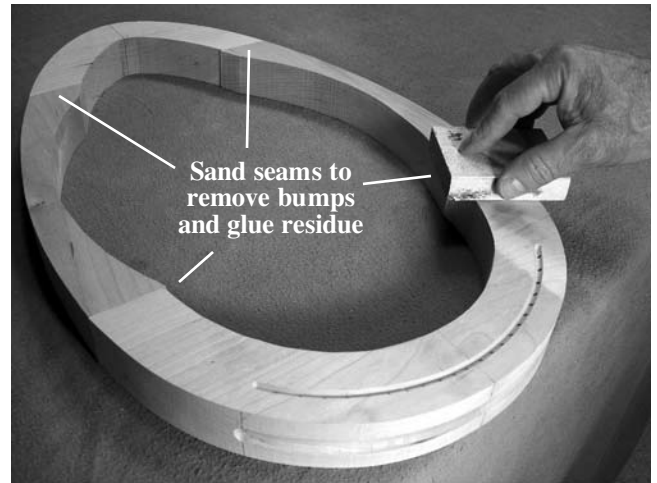
When satisfied with the order of the parts, glue them together end-to-end with woodworking glue, using masking tape or filament tape to hold the parts together, as shown. Put tape on one piece of wood and pull toward the adjacent piece as you lay the tape down across the seam, so the tape pulls the joint together.



NOTE: the parts may not be cut perfectly on the inside edge. It is best to align the outside edge carefully, because that is the edge that will show on the finished instrument. You can leave the inside edges rough.

When you have tape on the top and side of the frame, flip the frame over and put tape across the back surface of the joints too. Be sure the frame sits flat on your work surface (no stepped joints) as you leave it to dry.

2. Once the frame is dry, remove the tape and check the glue seams to make sure the wood surfaces are level and smooth, especially where the soundboard and back will be glued. Sand these surfaces to remove any glue blobs and irregularities.

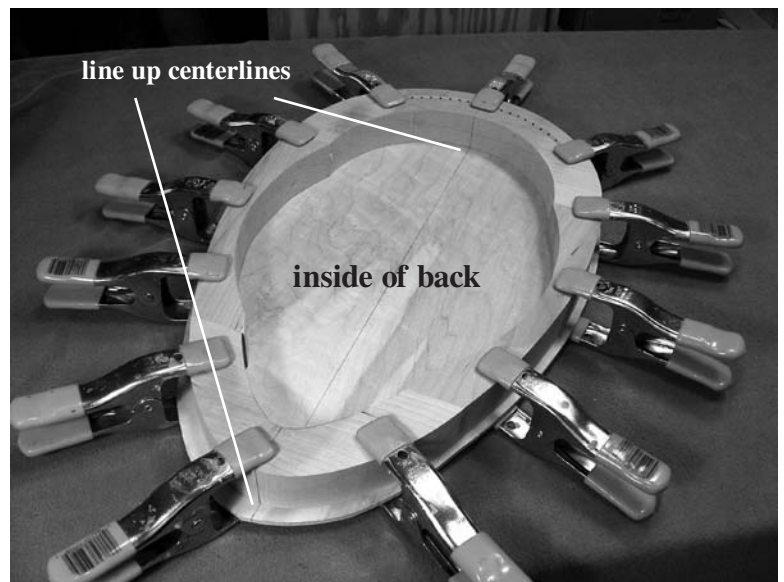


3. Draw a centerline down the top surface of the frame by connecting the centerlines at each end with a long straightedge, as shown.

4. Then position the frame on the back panel of the harp, as shown making sure there is some overhang all the way around the edge of the frame.

CAUTION: It is vital that the frame is right-side up when you glue it to the back panel. The two dots should be showing up (unless you have sanded them off), and the string holes in the tail end should be showing upwards.

When satisfied with the fit, glue the frame to the back, using clamps or weights to hold the parts together firmly until dry.



5. Now you can glue the soundboard to the frame. Be sure to line up the centerlines. Position the larger end of the soundboard exactly 1-1/4" from the tail end of the frame, as shown.

Use clamps or weights to hold the parts together until the glue is dry. Make sure the soundboard does not slip out of position as you install the clamps or weights.

TRIMMING & SANDING THE BOX

6. Now you need to trim off the excess soundboard and back material flush with the frame of the instrument. If you have a router, the quickest way to trim around the instrument is to use a flush-trim router bit.

Another quick way to trim the overhang is with a belt sander.

If you don't have power tools like these, you can manage just fine with a coarse sanding block. The soundboard and back materials are quite soft, so they will sand easily.

7. Notice the punch-marks around the head end of the soundboard, marking the proper locations for the 22 tuning pins included in the kit. Use a sharp 3/16" drill bit (included) to drill these 22 holes straight down into the solid cherry wood to a depth of 1-1/4". We suggest wrapping some masking tape around your drill bit to mark the proper depth, as shown.

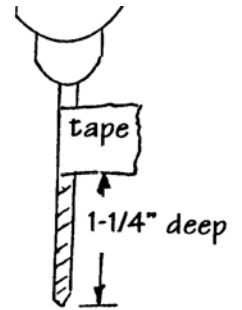
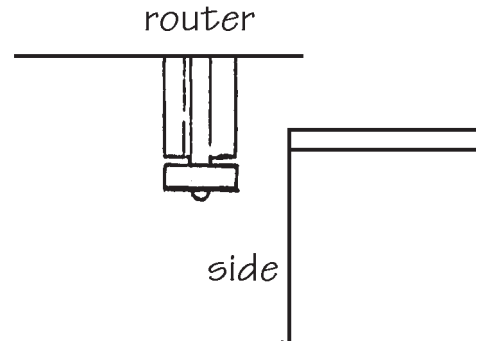
8. Now is a good time to do final sanding. Notice that the outside of the frame may need to be smoothed out a bit to make a nice-looking instrument. We use a belt sander for this step, but an electric palm sander will work quite nicely too. Of course, if you don't have power tools, then you'll have some hand sanding to do here. Take the time to do a nice job on this step because it will pay off in the appearance and feel of the finished instrument.

9. You need to round over all the edges of the box generously to make the instrument smooth and pleasing to hold in your arms. We use a 3/8" radius round-over bit in our router for this job, running it around both the front and back of the instrument. Note that the router bit will miss the exposed frame at the top of the tail end. We round that end with an electric palm sander or sanding block. Again, if you have no router or power sander, you can easily do this rounding by hand with a sanding block.

10. Now you can glue the rosette in place in the soundhole. The hole is cut slightly oversize on purpose for easy fit, and you'll find that this gap between the rosette and the soundboard adds dimension to the rosette, outlining it nicely all around.

Squirt a small bead of glue on the ledge around the hole and center the rosette in place, making sure the design is oriented the way you like it, and that the spacing is even all the way around the edges.

WA-LA! Your Reverie Harp is now ready for the finish. There are several finishes that will work fine for your instrument, and some are easier to apply than others. We give a few suggestions on the following page for selecting a nice-looking coat to protect your handiwork and enhance the beauty of the wood.



APPLYING THE FINISHING

STAIN -- STAINS are coloring agents and should only be used if you dislike the natural color of the wood. We usually do not apply stains to our projects, especially when they are made with naturally beautiful hardwoods such as on this project. These woods look very nice with just a clear finish. But, if you want to color the wood differently, your staining should be accomplished before applying a surface finish such as oil, varnish, or lacquer.

OIL -- An oil finish will give your wood a low luster appearance, bringing out the natural color of the grain, but it tends to soak into the wood and appear dry and "thirsty" after awhile. The principal advantage of an oil finish is that it can be applied and wiped dry immediately, so you can proceed to installing hardware (and strings) right away. The disadvantage of oil is that it usually does not give much surface protection or sheen, although there are some brands that include waxes and/or varnishes to give more surface build-up and luster. If you want a hand-rubbed oil finish, be sure to purchase the highest quality oil designed for hand-rubbing.

VARNISH -- Any satin or semi-gloss varnish will work on this project, but we like a wipe-on polyurethane best. We offer this type of clear top coat, called MUSICMAKER'S INSTRUMENT FINISH. Our complete finishing kit includes instructions, sandpaper sheets, tack cloth, foam applicator, and lint-free wiping cloth, along with a pint can of semi-gloss polyurethane varnish with instructions printed right on the can. The advantages of this finish are its simple application, durability, minimal odor, and deep, soft luster.

LACQUER -- Many professional instrument makers use lacquer for their finish. The most readily available lacquer is called Deft Clear Wood Finish. It is best to purchase a can of liquid to brush on as a sealer coat first, and then use an aerosol can of the same product to spray on the final coats. The advantage of this finish is its quick drying time, but the disadvantage is the strong odor of the toxic lacquer fumes.

OUR BEST ADVICE: AVOID GLOSS FINISH unless you are an expert with spray equipment! Glossy finishes show off every speck of dust and irregularity in your sanding. Satin or semi-gloss is much easier for the amateur.

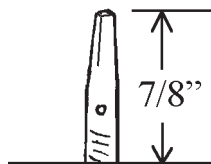
So go ahead -- choose your weapon and apply the finish of your choice, following the instructions on the container. Sand between coats with fine (400-600 grit) sandpaper or #0000 steel wool. Consult instructions on the can for proper drying time.

**We also recommend polishing the brass tube with fine (#0000) steel wool and wiping a thin coat of varnish on it to prevent tarnishing.
Be sure to de-bur the ends of the tube if they are rough.**

If you are not totally happy with the finish on your instrument when dry, try smoothing it out with #0000 steel wool and applying a coat or two of paste wax (the same product used on wood floors) to bring out a nice luster.

INSTALLING HARDWARE AND STRINGS

____ **11.** Once the finish is dry you can install the tuning pins. Use a hammer to tap them in, threaded end first, until they stand about 7/8" above the wood surface, as shown.



____ **12.** Push the brass eyelets into the holes in the Tail End.

____ **13.** Position the curved brass tube near the tail end of the instrument, on the groove routed to fit. Double-check to see that it sits flat in the slot without rocking. If one end sticks up a little, try flipping the tube over, or bending it slightly to get a flat fit. Use piece of masking tape to hold it in place until you install a couple strings.



____ **14.** Notice that you have 2-4 strings of each size in your string set. The idea is to string the instrument so both sides are identical, with the heaviest strings in the middle and the lightest strings at the outside positions.

We have included 22 tiny washers with the strings. Thread one washer onto each string before installing. This will prevent the "ball-end" of the string from digging into the wood at the tail end, thereby stabilizing the tuning more quickly.

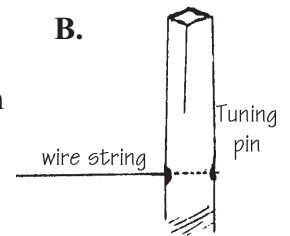
Begin with the lightest strings, marked .012". Thread them through the two outermost holes in the tail end of the instrument, pulling them until the ball-end rests in the shallow groove at the back end of the frame. These two strings will be wound attached to the outermost tuning pins at the head end. Study the process on the next page carefully so you understand how best to wind the strings around the tuning pins.

Note: Stringing is a bit of an art. It is important to do a nice job here so you don't end up with sharp ends of wire that can poke a finger or catch on clothing as people handle the instrument.

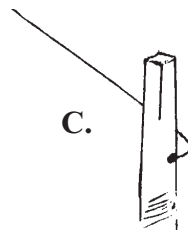


A. Begin
by trimming the string about 2-3 inches longer than necessary to reach the tuning pin.

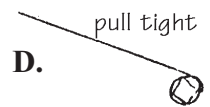
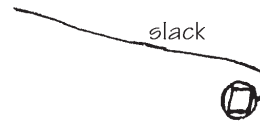
B. Pull the end of wire back and insert it into the tuning pin so it just barely shows through the other side of the pin, as shown.



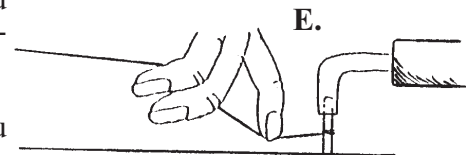
C. Use the tuning key to turn the pin clockwise about 1/2 turn, leaving the string loose enough so it does not pull out of the little hole.



D. Then pull the string with your hand to kink the end where it enters the hole, much like "setting the hook" when fishing.



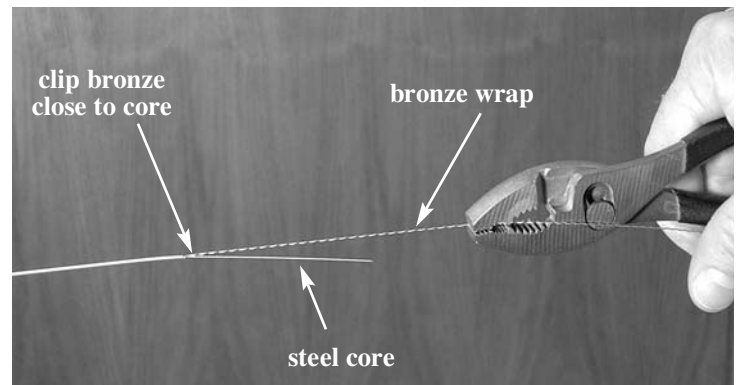
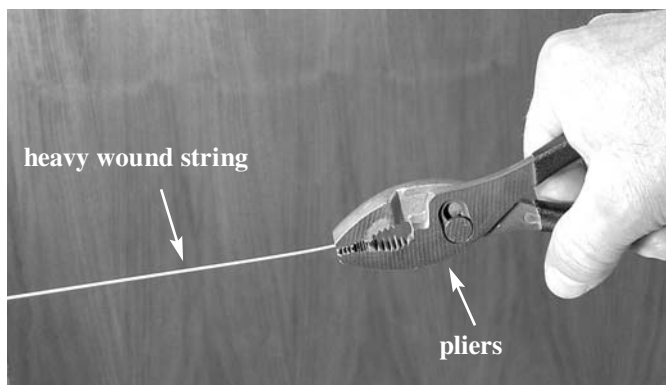
E. Turn the tuning key with one hand to finish winding up the slack as you hold the excess wire with your other hand. Don't over-tighten the string - you may break it. Just take up the slack so the string is taut.



F. Repeat this procedure with all strings, increasing the wire sizes as you move in toward the center of the instrument.

HINT: When you reach the heaviest wound strings (size .056") you'll find it difficult to fit them into the holes in the tuning pins. Here's how to solve that problem:

Once you have trimmed the string to length, grip the wound end with a pliers and pull the winding off the steel core back as far as the tuning pin. This is quite easy to do, and it will not harm the strings at all. When you have peeled off enough of the bronze wrap to wind around the tuning pin (about 3"), clip off the curly bronze material as close as you can to the core. Then you can wind the string onto the tuning pin like the other strings.



If you happen to break a string at any time, consult the String Chart on the next page to determine the proper size replacement. We are happy to sell replacement strings (individually or in full sets), or you can shop for them locally. These are standard ball-end acoustic guitar strings, so you should be able to find individual replacements from any music store.

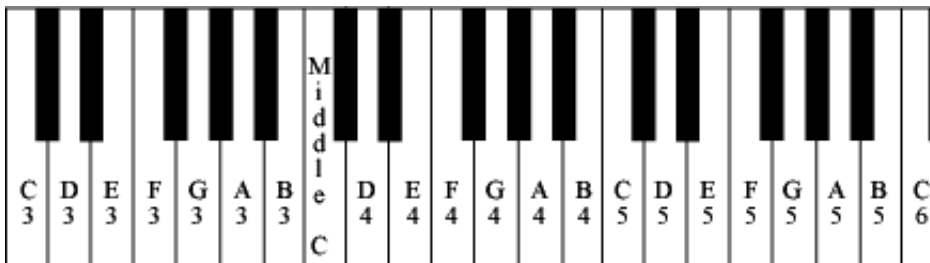
Tuning the Reverie Harp

15. It is best to use a chromatic electronic tuner to help ensure perfect accuracy of tuning (be sure to get a chromatic one - not just a guitar tuner). If you don't have access to one of these devices, you can tune to a piano, or go to our website (harpkit.com) and click on our "free on-line tuner".

We have provided you with several tuning templates that you can cut out and place under the strings to assist you in tuning. The **Care-Giver's Guidebook for Reverie Harp** by Peter Roberts provides a more detailed explanation of the different tunings.

Reverie Harp String Chart					
REVSTRG	FULL SET OF 22 STRINGS				\$30.00
STRING	NOTE *	GAUGE	VIBRATING LENGTH	CODE	PRICE
1	E5	.012 Steel	11.5 inches	BALL012	1.00
2	D5	.014 Steel	12.88	BALL014	1.00
3	C5	.016 Steel	14	BALL016	1.00
4	A4	.018 Steel	14.88	BALL018	1.00
5	G4	.020 Steel	15.75	BALL020	1.00
6	E4	.025 Bronze Wound	16.38	BALL025	1.50
7	D4	.025 Bronze Wound	16.88	BALL025	1.50
8	Middle C4	.032 Bronze Wound	17.25	BALL032	1.50
9	G3	.032 Bronze Wound	17.62	BALL032	1.50
10	E3	.042 Bronze Wound	18	BALL042	1.50
11	C3	.056 Bronze Wound	18	BALL056	1.50
12	C3	.056 Bronze Wound	18	BALL056	1.50
13	G3	.042 Bronze Wound	18	BALL042	1.50
14	A3	.032 Bronze Wound	17.62	BALL032	1.50
15	Middle C4	.032 Bronze Wound	17.25	BALL032	1.50
16	D4	.025 Bronze Wound	16.88	BALL025	1.50
17	E4	.025 Bronze Wound	16.38	BALL025	1.50
18	G4	.020 Steel	15.75	BALL020	1.00
19	A4	.018 Steel	14.88	BALL018	1.00
20	C5	.016 Steel	14	BALL016	1.00
21	D5	.014 Steel	12.88	BALL014	1.00
22	G5	.012 Steel	11.5	BALL012	1.00

*(The notes shown above are for the standard "Reverie Tuning")



reference keyboard

An electronic tuner is quite useful to keep your harp in tune. You can also use the free online tuner at Musicmakers' website - www.harpkit.com/freetuner

16. (Optional) If you'd like to add a strap to the instrument, we recommend placing the mounting buttons on the sides of the box, near each end, at about the 1:00 and 7:00 o'clock positions, as indicated here.



CONGRATULATIONS! You have assembled a beautiful instrument that anyone can play. We hope you find it to be very enjoyable to use for a good long time. If you find interesting applications for this instrument, please give us a call or send a note by email. We'd love to hear how this new invention gets put to use.

Cleaning The Reverie Harp

If you are using your Reverie Harp in a hospital setting and need to keep it disinfected you can wipe down the instrument and strings with the alcohol based disinfectant wipes commonly found in hospitals.

ACCESSORIES AVAILABLE FOR THE REVERIE HARP

FINISHKIT	Musicmaker's Instrument Finishing kit
REVSTRG	Spare set of 22 strings
STRAP2	Strap with two mounting buttons
REVBAG	Padded gig bag for Reverie Harp
REVBK-01	Care-Giver's Guide Book for Reverie Harp
CA- 30	Electronic Tuner, chromatic

MUSICMAKER'S KITS, INC

**PO BOX 2117
Stillwater, MN 55082**

651-439-9120

www.harppkit.com