

CLASSIC

Hand-Crank MUSIC BOX KIT



Tools you will need:

Standard screwdriver
Phillips screwdriver
Awl
Hand drill (or cordless electric)

Supplies you will use:

Damp Rags
Woodworker's glue
Masking tape
Sandpaper (180 & 600 grit)
Varnish or lacquer

MUSICMAKER'S KITS, INC

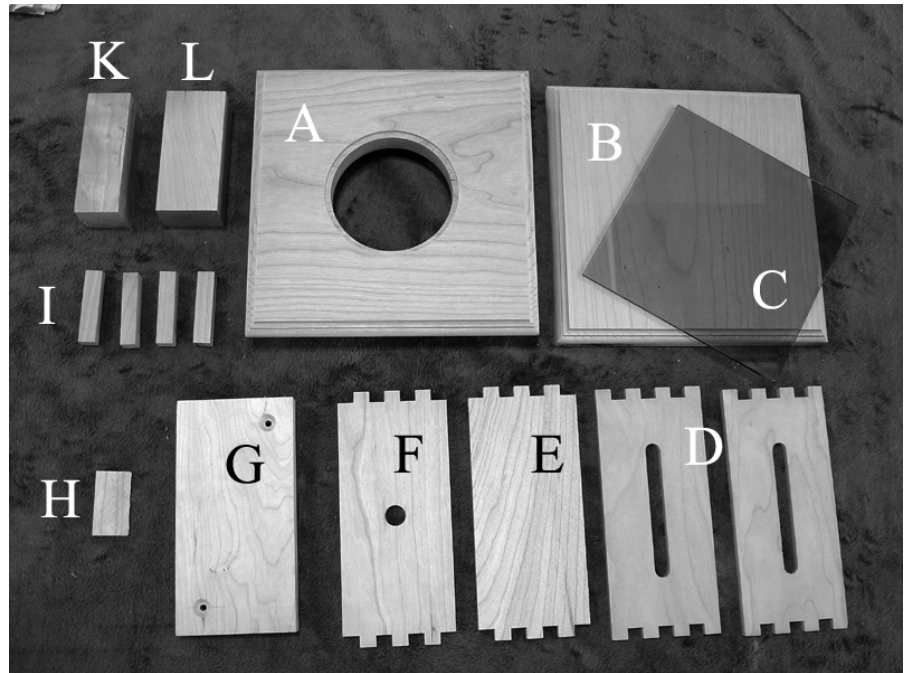
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WOOD PARTS

- A** – Top (with large hole)
- B** – Bottom
- C** – Glass
- D** – 2 Slotted Sides
- E** – Solid Side
- F** – Side with crank hole
- G** – Platform block
- H** – Sloped Guide
- I** – 4 Corner pieces
- J** – Right Guide Block
- K** – Left Guide Block



HARDWARE

- 2 Small Hinges
- 10 Tiny Screws for Hinges
- 9/4" Drill Bit
- 1/16" Drill Bit
- 2 Wood Screws, 1-1/4" long
- 8 Glue Dots on wax paper
- Large Decorative Rosette for lid
- Musical Movement Pack

BEFORE YOU BEGIN

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. We also suggest skimming through the entire directions before beginning, just to get an overview of the project. You may decide that you need to gather more tools or purchase some supplies. Now is a good time to take care of that so you can avoid delays in your project.

A NOTE ABOUT GLUE

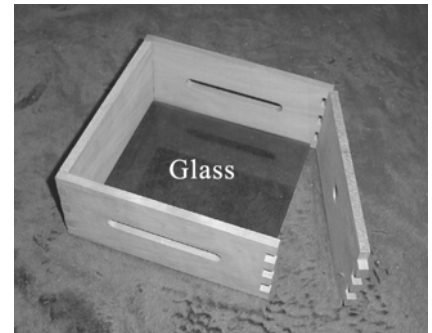
Find a good woodworking glue such as Elmer's Carpenter's Wood Glue or Titebond for this project. Be sure to put enough glue on the joint to wet the entire surfaces to be joined. A good sign of proper gluing is that a little excess will squeeze out around the joint when clamping pressure is applied. Too 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. Most woodworking adhesives "set" sufficiently after 30 minutes of clamping to allow you to proceed. Check your dispenser for recommended drying times.

ASSEMBLY INSTRUCTIONS:

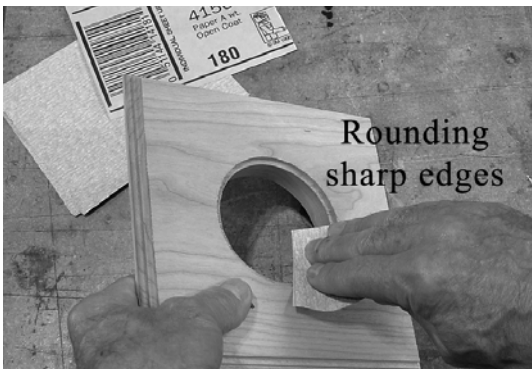
____1. Dry-fit the four sides of the box together to see how they fit. These parts are symmetrical, and you cannot assemble them incorrectly, so it does not matter which way you put them together. Upside down or inside out, they work fine, but if there is a certain grain pattern that you want to show outward, then arrange the pieces the way you like them.

Use the glass to assist you in squaring up the corners, as shown.

When satisfied with the fit, apply glue to the “finger joint” corners and push each corner fully into place. Yes, you are likely to have a mess of excess glue inside and out! Make sure to clean it all up with a wet rag before it skims over. Rinse your rag and scrub the wood again just to make sure, because a thin haze of glue will prevent the finish from penetrating the grain later on, giving the wood a milky haze. Such things are telltale signs of amateur workmanship....

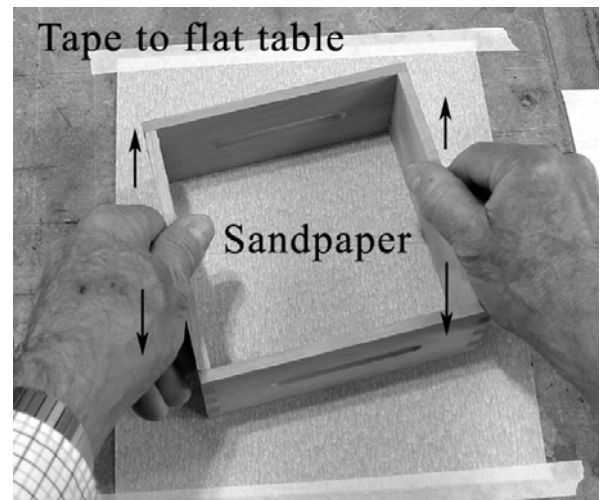


Use masking tape to hold the corners tight if necessary. Check the box for square again before setting it aside to dry. If the glass fits inside, it is square enough. Allow at least 30 minutes drying time before handling the box.

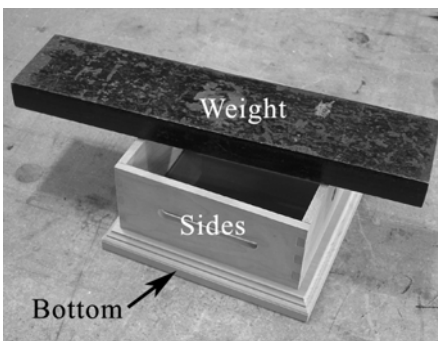


____2. Take time to sand all the wood parts of your kit. Use 150 or 180 grit sandpaper to remove the machine marks and fuzz from all the edges, and to take the sharpness off all the corners. A slightly rounded corner will look sharper than a sharp corner. You want people to remark about how smooth your piece feels when they hold it.

____3. Use masking tape to secure a full sheet of 180 grit sandpaper on a flat work surface with the grit facing up, so you can rub the side assembly on it to level the corners nicely, as shown.



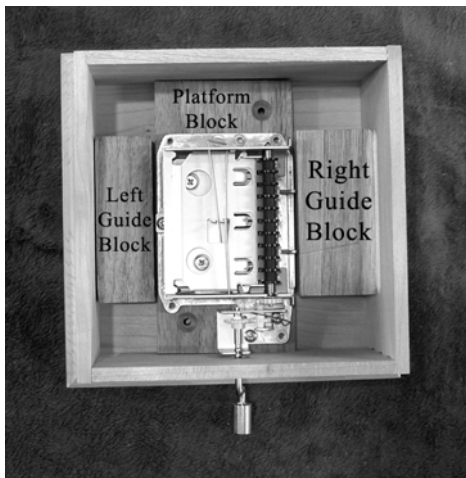
____4. Now you are ready to glue the sides of the box to the bottom. Here is where you can decide which direction you want the grain to face at the front. The front of the music box is where the small hole is drilled for the crank of the movement.



Position the box in the center of the bottom piece. It is pretty easy to center the parts by eye.

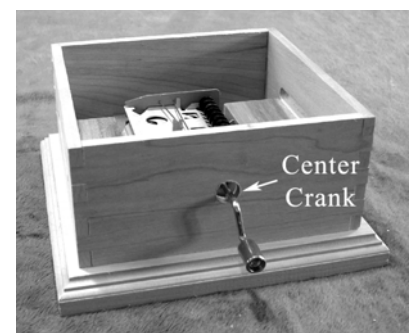
Apply a thin bead of glue to the underside edge of the sides and glue the frame on the bottom piece. Press the frame down and clean up all excess glue completely with a wet rag. Then place a weight on the frame to hold it down until the glue dries.

____5. This is a good time to glue the decorative rosette into the top piece. Orient the top with the grain facing the same as the bottom so you know how to install the rosette. If the rosette is just a symmetrical pattern, this doesn't matter, but if it is a tree or butterfly, then it is important to have it oriented correctly on the lid.



____6. Now you are ready to fit the movement in place. There are three wooden parts that need to fit around the movement: The platform block goes under to lift the movement to the correct height, and the right and left guide blocks will guide the paper strips as they enter and exit the box. These parts will only fit one way, as shown. Dry fit them to make sure you understand.

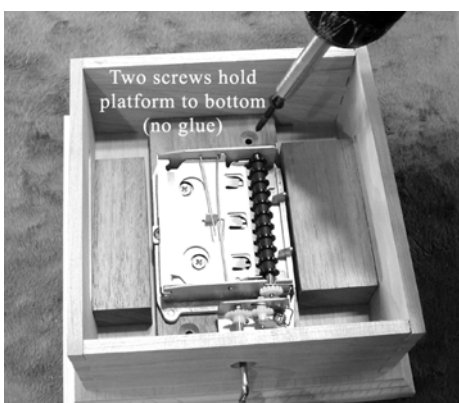
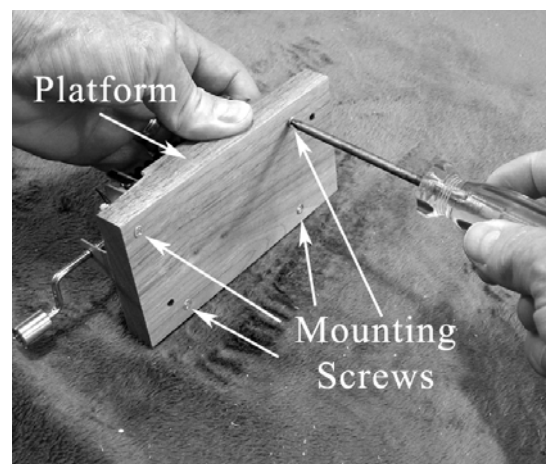
____7. With the movement aligned nicely (crank shaft in the middle of its hole), use an awl or a long nail to punch-mark the positions of the four mounting screws that will go through the platform block.



Then you can remove the parts from the box and drill those four holes through the platform using the 9/64" drill bit provided.

____8. If you have not yet sanded the corners of these interior blocks, do that now. They will look nicer with the corners slightly rounded.

____9. Test-fit the movement to the platform block again, this time fastening the movement to the block with the four screws provided. If the screws do not line up with the movement, you may need to enlarge the holes in the block slightly (to 5/32"). Insert the screws loosely at first so you can shift the movement a little to get all the screws started. Then you can tighten them up and put the movement back into the box.

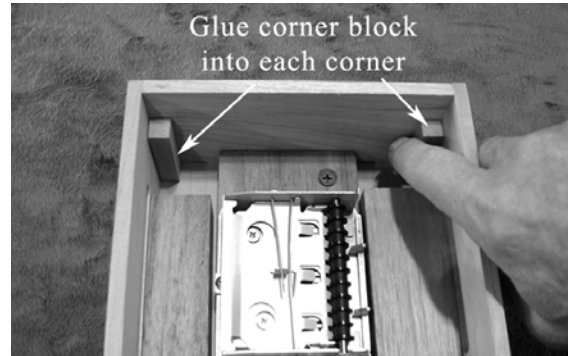


____10. With the movement centered between the two spacer blocks, install the two wood screws through the platform into the bottom of the box to hold the movement in place. No glue here – you want to be able to remove the movement. (Pilot holes help.)

____11. Now is a good time to glue the two spacer blocks in position, on either side of the movement. Just use a small amount of glue on the bottom and one side of the blocks, and press them into position, centered on the slots on each side of the box, as shown. Allow 15-20 minutes for drying.

____12. Glue the four corner pieces into the box too. These are to support the glass. A small amount of glue works best – it’s hard to clean up the excess in such small spaces.

____13. Once the spacer blocks and corner blocks are secured, you can remove the movement and platform block again to prepare for applying finish to the box, inside and out. Take the movement off the platform block too.



Check over all the wood parts to make sure they are smooth and ready for your finish. Don’t forget the little wedge of wood called the “sloped guide”.

Here are some suggestions and options for applying finish:

STAINS--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 cherry or walnut. 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 varnish or lacquer.

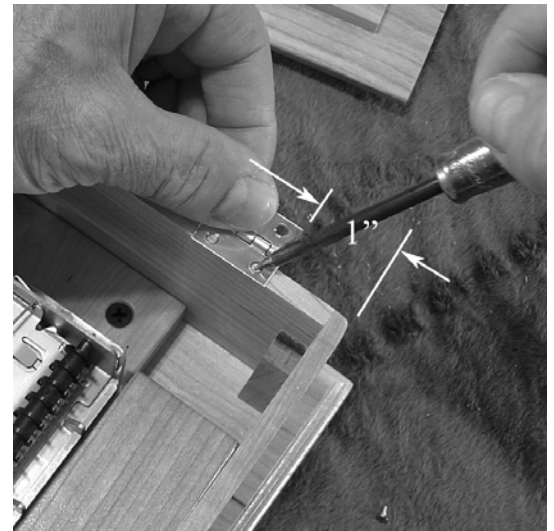
OILS – We suggest not applying finishing oil to this project because you will not be able to get the glass to stick to the corner blocks if they are coated with oil.

VARNISH -- Any regular varnish will work fine on this project, but we like our wipe-on polyurethane called GEL TOPCOAT that we offer in our Musicmaker’s Finishing kit. The complete kit includes sandpaper sheets, foam applicator, and a half-pint can of satin gel-urethane varnish (instructions printed right on the can). The main advantage of a gel finish is that it does not drip, run, or sag while it is wet. You can even tip the can over without making a mess! It is the easiest and most successful varnishing system we’ve seen, and the project will really look nice after about five thin coats are applied to the outside surfaces (some people apply ten coats!). Note that you will be sanding lightly with 600 grit paper between coats of finish.

LACQUER -- Many professional instrument makers still use lacquer for their finish. The most readily available lacquer is called Deft Clear Wood Finish (semi-gloss). 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 principle advantage of this finish is its quick drying time, but the disadvantage is the strong odor of the toxic lacquer fumes. In fact, this product is not available in some states because of environmental laws. If you work outdoors or in a well ventilated space, however, you might like this finish very well. It only takes 2-3 coats for a beautiful protective finish.

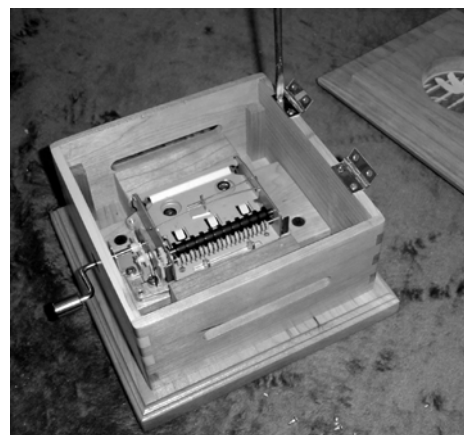
So, choose your weapon and finish off all the wooden parts for this project (don’t forget the little wedge piece).

____14. Fastening the lid to the box with hinges is OPTIONAL, but it makes the finished box much more classy. Start by installing one leaf of each hinge to the side of the box opposite the front (the one solid side with no holes through it). Position the hinge about 1” from the corner, and center the holes of the hinge on the edge of the wood. Use an awl to punch mark the center of each hole, as shown.

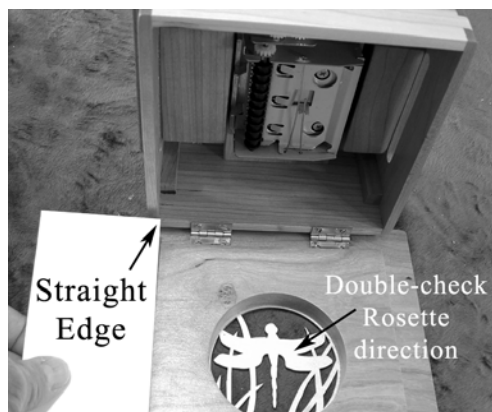




Punch-mark the screw centers and use a 1/16" drill bit to bore shallow pilot holes for the tiny screws. This will make it easier to install the screws, and it will prevent the wood from cracking.



You'll need a small screwdriver to fit the slots of these tiny screws.



____15. Once the hinges are fastened to the box, open them half way and tip the box on its back with the top of the box in placed under the hinges so the hinges rest in the ledge, as shown. The ledge will help you keep them aligned as you mark the positions for the screws.

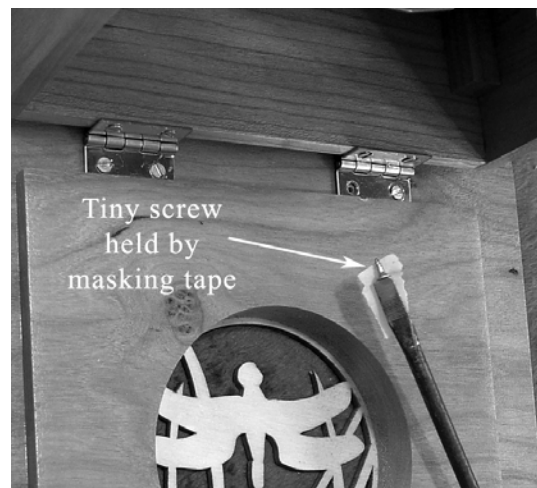
CAUTION: Use a straight-edge to align the top with the box, making sure the raised center of the top will fit between the sides.

Also double-check how the rosette is oriented. It needs to be oriented correctly when the top is closed.

____16. When the top is properly aligned, punch-mark and drill pilot holes for the small hinge screws. It is difficult to hold these tiny screws in your fingers, so we suggest putting a small scrap of masking tape at the end of your screwdriver to hold the screw, as shown.

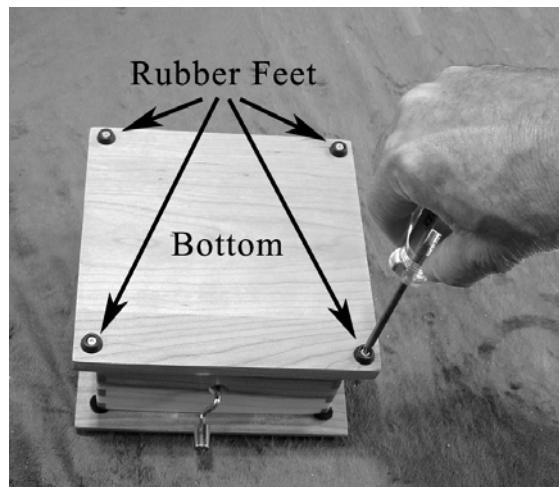


____17. When you have the hinges installed, you can apply the felt pads under the four corners of the lid so it won't be noisy when you close the top.

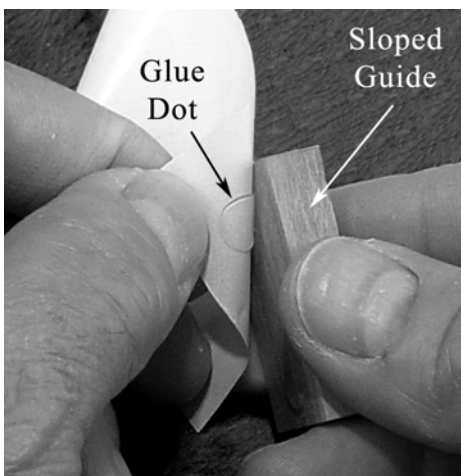


____18. Now you can install the movement in place again, tightening the 4 machine screws into the platform block and two wood screws to hold the platform block down against the bottom of the box.

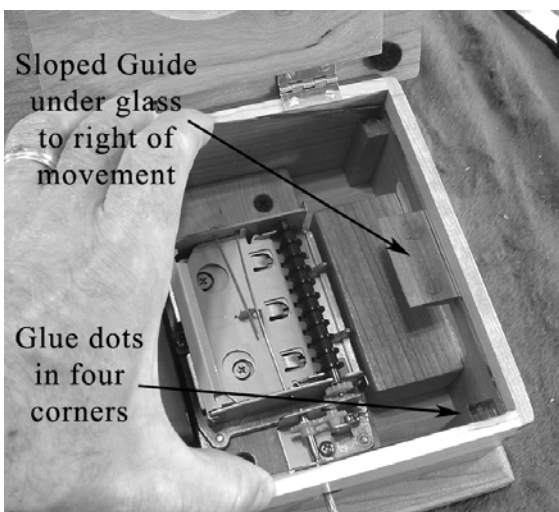
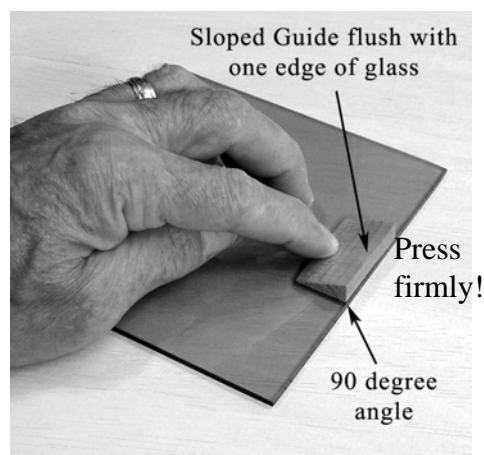
____19. Turn the whole music box upside down and install the four rubber feet close to the corners of the bottom, as shown. Use the same 1/6" drill bit to drill pilot holes for the screws.



The glass is the last piece to install. Take time now to clean it completely on both sides. A paper towel dipped in some warm water with a little white vinegar will remove dirt without leaving streaks and smears.

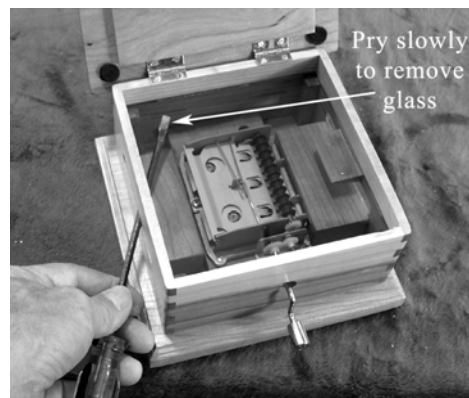


____20. Before adhering the glass in the box, you need to glue the little sloped wooden guide flush with one edge, as shown. Use two of the glue dots to hold this wood piece to the glass. Superglue or 5-minute epoxy will also work well, if you prefer.



____21. Apply a glue dot to each of the corner blocks inside the music box. Orient the box with the crank handle facing you, and then orient the glass so the sloped guide block is underneath the glass on your right side. Now you can lower the glass onto the glue dots and press it down.

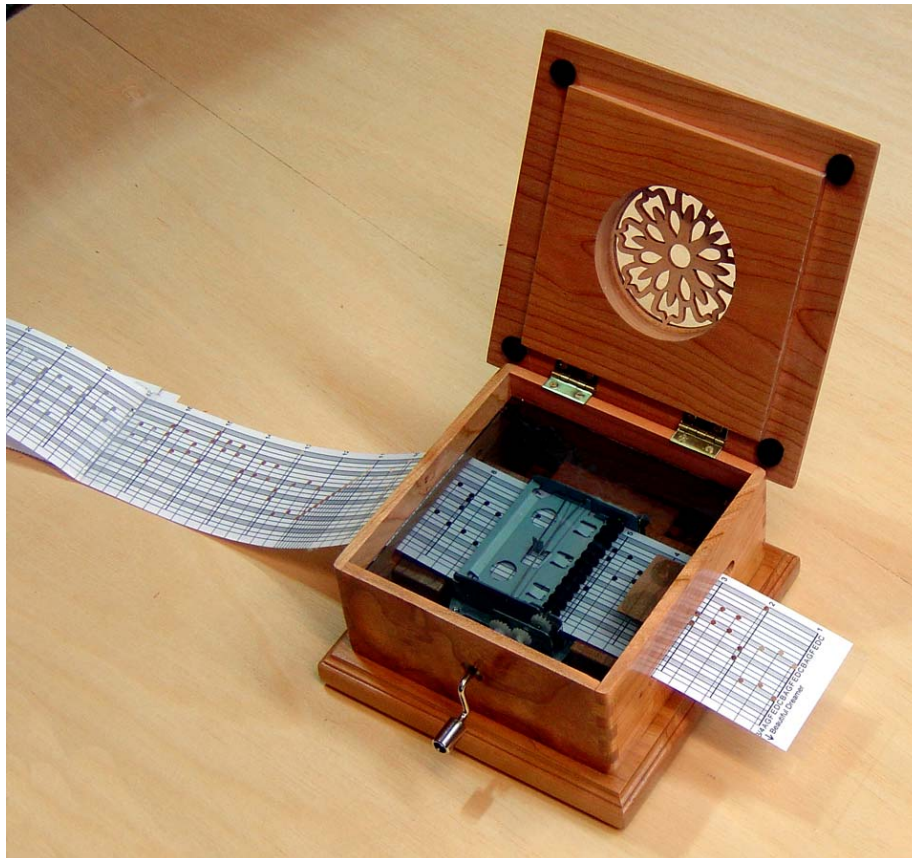
NOTE: If you are human, like we are, you'll probably need to lift the glass out to clean off a fingerprint under the glass or something. You can do this quite easily by inserting a screwdriver into one of the slots in the side and prying slowly and gently up against the glass, as shown. The glue dots will still be OK to re-use, so you can make the correction and set the glass right back into place again.



VOILA! You have a beautiful music box to display in your living room or to give to a special friend or relative. We hope you have enjoyed this woodworking project.

Test the operation of the movement using the pre-punched strip enclosed. With the crank handle facing you, insert the paper strip into the slot on your left. The song starts where the title is printed. Feed the strip all the way into the slot as you turn the crank clockwise.

DO NOT TRY TO PULL THE PAPER STRIP OUT. Just keep turning the crank to feed it all the way through. The crank only works one direction (clockwise) – it does not work in reverse.



SONG STRIPS

We are continually expanding our collection of song strips for these hand-crank music boxes. Go to our web site, www.harokit.com/musicbox, to select the tunes you wish to order. You can download them and print them on heavy paper from your own computer. Then you just cut the sections out, tape them end-to-end in proper order, and punch the notes as marked (complete instructions are on-line with the songs).

You may also learn how to arrange and plot out your own songs on the blank strips provided with the movement. There is special software available for programming your own song strips on a computer. This is the ultimate tool for customizing the music for your music box, allowing you to play the arrangement on the computer before you print and punch the paper. The software is available from www.ktabs.theirhouse.org.

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