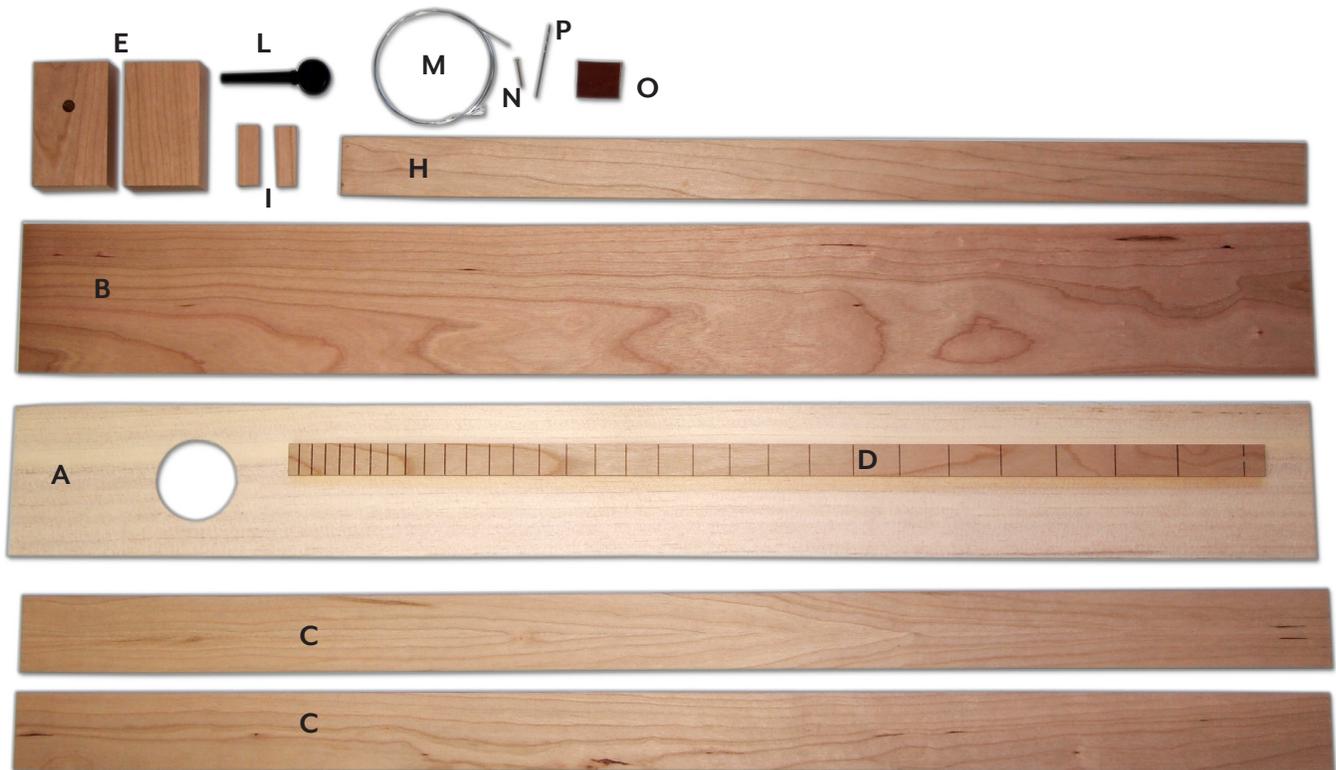




# MUSICMAKERS

## PSALMODIKON KIT Assembly Instructions

Updated January 2019



### WOOD PARTS

- A Soundboard
- B Back
- C Sides (2)
- D Fingerboard
- E End Blocks (2)
- F\* Spacers (2)
- H Pre-Printed Transposition Stick
- I Stop Blocks
- J\* Bridge
- K\* Small Rosette with donut

### HARDWARE

- L Violin Peg
- M .016" Loop End String (+ 1 spare)
- N Tail Pin
- O Leather Scrap (1" x 1")
- P 1/16" Drill Bit
- Q\* 30" fretwire

\* Parts not shown

## BEFORE YOU BEGIN

\_\_\_A. Inventory and inspect all your parts carefully. If anything is missing or defective, please call us right away.

**651-439-9120**

\_\_\_B. It is a good idea to read through the entire assembly instructions before you start, just to get an overview of the project.

### A NOTE ABOUT GLUE



We strongly recommend that you use a common woodworking glue like Elmer's Carpenter's Wood Glue or Titebond because they hold the parts more securely than most other adhesives, and they are inexpensive and easy to use. DO NOT assemble the wood parts of this project with 5-minute epoxy or super-glue or hot melt glue. The yellow colored Elmer's or Titebond is best.

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. 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 prominent places.

## SOME OTHER HELPFUL HINTS

**Technical Support:** If you have any questions about the assembly process - please don't hesitate to contact us. Help is just a call or email away.

**Gluing:** Always keep a wet rag handy when you are gluing parts together. You will want to keep your fingers clean so you don't leave gluey fingerprints all over your instrument. Dried glue spots are tough to see on the bare wood, but they show up prominently after you apply the finish!

**Flat, Sturdy Work Surface:** It is best to work on a FLAT and sturdy table. If you don't have a suitable table you can make do with a piece of lumber approximately 35" by 5". Just make sure the lumber sits flat and does not bow or bend.

**Tools:** If you are an extreme novice at woodworking you can complete this project with hardly any power tools. But the use of certain tools can make some of the steps dramatically easier. Talk to your People (neighbors, co-workers, and friends) about this project! Chances are good that someone will have some of the tools you need and would enjoy lending a hand. It is nice to have People!



We have video instructions posted on our website to help you assemble your psalmodikon. Point your browser to <https://www.harppkit.com/psalmodikon-kit.html>

## 1. GLUE THE SIDE PIECES TO THE END BLOCKS.

Begin by laying out your pieces on your flat work surface and dry fit them together as a test run. You will want to be careful that you glue the SIDES so that the nice cherry face is on the outside.

Also pay special attention to the the end block with the hole. This hole is tapered to received the tapered violin peg. The peg will seat in the END BLOCK easily in one direction and will hardly go in the other direction. It is best to insert the violin peg in the END BLOCK and leave it in there while you glue on the SIDES so you are sure to leave the correct side of the END BLOCK facing out.

Pre-tape the SIDES. Put 2 pieces of tape on the cherry face. Be sure to tape both ends! (fig. 1A)



FIG. 1A

Apply wood glue to the sides of the END BLOCKS. (fig 1B)



FIG. 1B

Tape the sides in place. Be careful to keep all the corners and edges flush. And note the orientation of the violin peg! (fig. 1C)



FIG. 1C

## 2. GLUE THE FRAME TO THE BACK.

Before you begin, use a chisel or some sandpaper and clean up any glue squeeze out that might prevent the frame from laying completely flat on the back. To glue the frame to the BACK you are going to apply a small bead of glue around the edge of the frame (fig. 2A) and clamp or use weights to secure it to the back (fig 2C). If you have enough clamps to get the job done - great. If not, you can easily make do with some weights such as several heavy books, a sack of flour, etc. It is nice to lay a board on top of the frame to help distribute the weight but this isn't absolutely necessary.



FIG. 2A

Notice the orientation of the violin peg. Looks backwards right? That is because I have flipped the frame over to apply the glue.



When gluing the frame to the back you will want to pay careful attention to the location of the violin peg. You will notice that it is slightly off-center. Study fig. 2B

It also might help to imagine laying the instrument length wise in front of you from left to right. You want the violin peg on your left side and you want it off-center toward you.



Note: Be sure to place the frame on a flat, sturdy work surface when gluing on the back and soundboard to keep the instrument square and prevent warping

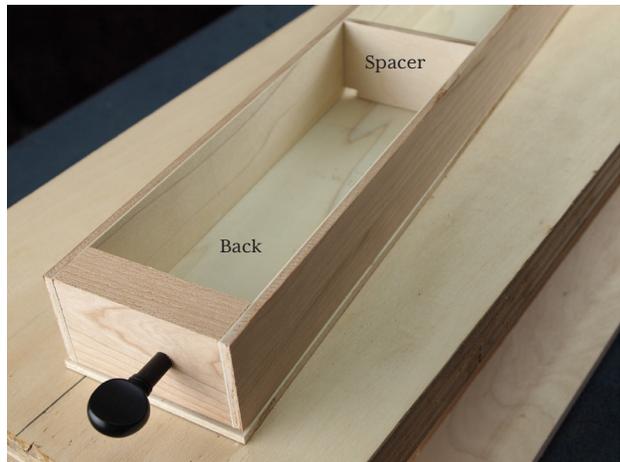


FIG. 2B

Violin peg shown in correct location relative to the back. Also notice that the back overhangs the frame all the way around.

We have included two spacers that will help to keep your instrument square. Put one spacer in about a third of the way from either side. (fig 2B) Put the notched side down so it doesn't accidentally touch any glue squeeze-out. Do this after you have applied the glue and positioned the frame in place and right before you put the board and the weights on top.



Note: The spacers provided are temporary - remove them before gluing the soundboard.



FIG. 2C

### —3. GLUE ON THE SOUNDBOARD

Before you glue on the SOUNDBOARD, select which side you would like facing out. You might also want to sign and date the inside of the back before you glue on the SOUNDBOARD

If you are installing a rosette in your psalmodikon, you will want to glue the wood donut under the soundhole at this time. Be sure to put the donut on the inside face of the soundboard; that is, the face you don't want to see when playing.

Place a small bead of glue around the outside edge of the donut. (fig 3A)

Position the donut so a small ledge is visible all the way around the soundhole. Clean up any glue squeeze out. (fig 3B)

Set a weight on the donut and let dry for 30 minutes. (fig. 3C)

**Follow the same procedure you used to glue on the back:**

Apply a bead of glue all the way around the edge of the frame.

Place the SOUNDBOARD on your flat work surface with the good side facing down.

Set the frame on the SOUNDBOARD being careful to check for a small amount of overhang all the way around the frame. Double check that the soundhole is on the opposite end from the violin peg.

Add some weights and let dry.



FIG. 3A



FIG. 3B



FIG. 3C

### —4. TRIM THE EDGES FLUSH

Now is a good time to trim off the overhang. There are several ways to do this. Choose the one you are most comfortable with and have at it!

- Use an electric hand sander
- Use a router with a flush trim bit
- Plane the edges flush with a hand plane.
- Make a sanding block by gluing some 100 grit paper on a flat piece of wood and sand the edges flush



Be mindful that it is easy to sand through the thin outer cherry veneer of the sides! But that doesn't mean that you should.

## 5. PREPARE THE FINGERBOARD



It is important that you are working on a **STURDY** surface when pounding in the frets!!

Begin by placing the long length of **FRETWIRE** over one of the slots cut in the **FINGERBOARD**, so the end hangs over the edge of the wood just 1/16" or so. Position the **FRETWIRE** so that the 'tang' will be driven down in the fret slots. (fig. 5A)

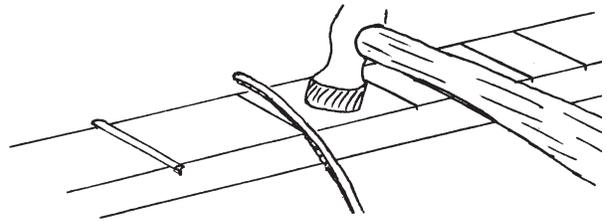


FIG. 5A

Use a hammer to lightly tap the **FRETWIRE** into the slot, until the crown of the fret contacts the wood surface. Yes, the **FRETWIRE** is slightly curved, but it will straighten as you tap it in.



**HINT:** Tap one end of the wire in first, then the other end, and finally the middle. **DO NOT OVERWORK THE WIRE!** You should be able to install each fret with four or five taps, total. If you have difficulty with a fret, you can use a chisel to pry it back out of the wood, straighten the wire with pliers, and install it again.

When the **FRETWIRE** is securely held by the wood, use a wire cutter to clip off the excess, as close to the wood as possible. (fig. 5B)

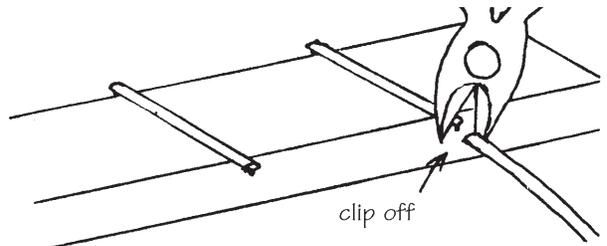


FIG. 5B

Proceed to the next fret slot in the same way, and so on until all frets are installed.

After the frets are all installed, we like to look them over very carefully to make sure each one fits all the way down against the wood. If one fret stands higher than another, it may cause buzzing problems later. Now is the time to take care of the problem. We generally find that a few good taps from the hammer are sufficient to seat any frets that are too high. But make sure you are working on a very firm surface. A bouncy table will only make this job impossible.

Sanding the frets flush with the edge of the **FINGERBOARD** can be a bit of a challenge. The best tool for this is a belt sander. (fig. 5C) Hand sanders and files tend to wiggle the frets too much and cause them to become loose in the slots. Small bench-top belt sanders are pretty common in many hobbyist home shops. This would be a good time to check with your people!



FIG. 5C

## \_\_\_6. SAND AND ROUND OVER THE PSALMODIKON

It is a good idea to do most of your sanding on the body of the psalmodikon before you glue the FINGERBOARD in place. Take your time and do a nice job. Your work here will pay off handsomely on the finished instrument. Do the following and be proud:

- If you have any gaps between the top or bottom and the sides, you can fill these with wood filler. Wood filler is available at any hardware or home supply store... or maybe even from your People!
- Soften all the edges of the box with some 100 grit sand paper, a file, or even a router with a round-over bit.
- Sand out any scratches and smooth things out with some 180 grit sand paper. Sand with the grain whenever possible!
- Go the extra mile to make your instrument a fine piece of workmanship by using some 320 grit sand paper over the entire body.

## \_\_\_7. GLUE THE FINGERBOARD IN PLACE

The FINGERBOARD is positioned so that it sits one inch in from the long side and the first fret is 1-1/2 inches from the end. (fig. 7)

Make a few light marks on the top to help you position the FINGERBOARD.

Glue the FINGERBOARD in place using weights (books or sacks of sugar) You don't need that much weight - maybe 5-10 pounds total. If you use more than that you risk putting a dip in the fingerboard which can cause string buzzing problems.

## \_\_\_8. GLUE THE STOP BLOCKS IN PLACE

These STOP BLOCKS serve to hold the transposition stick in place. You will want to sand the STOP BLOCKS before gluing.

Glue the first STOP BLOCK in place. Position it on the edge by the violin peg. (fig. 8A)

Use the transposition stick to mark the location of the other STOP BLOCK and then glue that in place. (fig. 8B)

FIG. 7

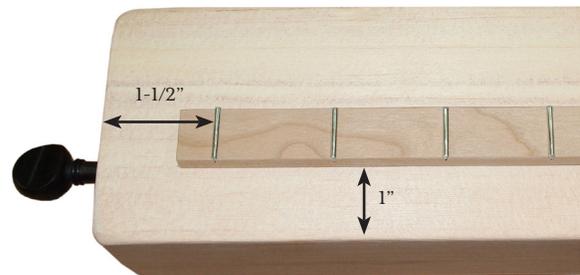


FIG. 8A



FIG. 8B



## \_\_\_9. SAND AND FINISH

Carefully inspect your psalmodikon and do any final sanding before you apply a finish.

You will NOT apply a finish to the top of the FINGERBOARD or the violin peg. Cover the top of the FINGERBOARD with masking tape before finishing the rest of your instrument. You can then leave it unfinished or you can apply some Boiled Linseed Oil.

Don't forget to put some finish on the BRIDGE and, if you purchased a rosette, sand and finish that as well. Putting finish on the TRANSPOSITION STICK is a matter of personal preference

### **General Finishing Guidelines**

**DECORATING** -- You may decorate the front of your instrument with paints, woodburning patterns, or most any form of decoration you desire. We often recommend applying one coat of varnish as a sealer before painting. That way, you can easily wipe off any mistakes in your decorating, and when you have it just right, you can varnish over the paints to seal and protect the decorations.

**STAINS or DYES** -- These are coloring agents and should only be used if you want to change 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 best with a clear finish. But, if you want to color the wood, your staining should be accomplished before applying a surface finish such as oil, varnish, or lacquer.

**OIL or WAX** -- Be very cautious about using an oil or wax finish. If this type of finish gets into the tuning pin holes, it will act as a lubricant, and you may have trouble keeping the instrument in tune. Oil finishes 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. Some people are fond of a beeswax finish for a natural look, but it can show water spots if it gets wet, so you may end up needing to re-wax or touch up the surface in the future.

**POLYURETHANE VARNISH** -- Any regular varnish will work fine on this project, but we think a wipe-on (gel) polyurethane is the easiest to apply because it does not drip or sag -- just wipe on a thin coat and wipe off the excess. Our complete finishing kit includes a half-pint can of satin gel polyurethane (instructions printed right on the can), plus sandpaper sheets, and foam applicator for the first coat. The advantages of this finish are its simple application, minimal odor, good durability, 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.

## 10. PREPARE FOR STRINGING

### Drill a 1/16" hole through your violin peg.

Locate the hole by seating the peg firmly in the instrument and use an awl to make a punch mark about 1/4" out from the end of the instrument. (fig. 10A) If you don't have an awl you can put some tape on the peg and mark it with pencil.

Hold the peg firmly over a scrap piece of wood when drilling the hole in your violin peg to prevent any tear-out when the drill bit comes through the other side. (fig. 10B)

Mark the location of the tail pin as show in fig. 10C You want your string to run down the center of the FINGERBOARD. So locate the pin accordingly. It should be roughly 1-3/8" from the left long side. Putting it about 3/8" in from the end works great. Just as long as the pin goes into the END BLOCK. (fig. 10C)

Hammer the pin in place, leaving the head 1/8" above the wood so you can hook the string on it.

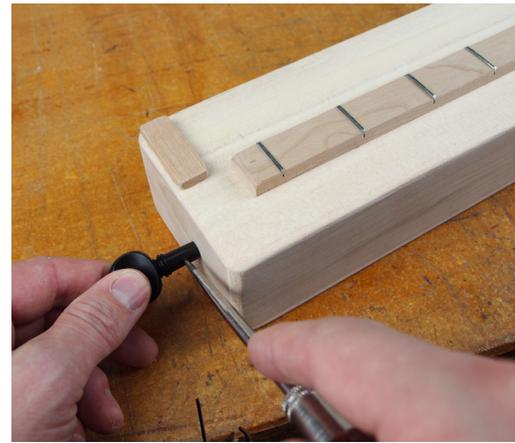


FIG. 10A



FIG. 10B

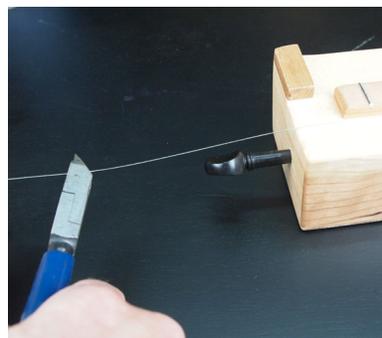


FIG. 10C

## 11. INSTALL THE STRING



Put the loop end of the string over the tail pin and tape it in place.



Pull the string up to the violin peg and cut it so the end extends about 3" past the peg



Thread the string in the hole just far enough that the end goes all the way through the peg but doesn't extend out of the peg.

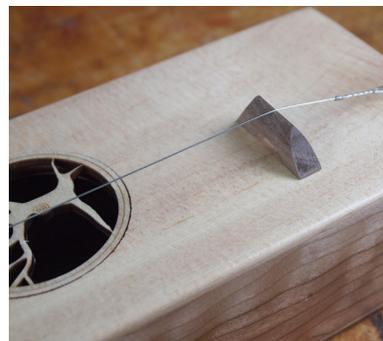
## INSTALLING THE STRINGS (CON'T)



Holding the string loosely in position, turn the violin peg 1/2 turn and then pull on the string to “kink” it. Keep tension on the string and continue to wind the peg until there is just enough tension to hold it in place.



Insert leather under the string to prevent the string from digging into the wood.



Insert the bridge. The bridge should sit 28-1/2” away from the first fret.



The violin peg is tapered. If the peg is slipping, push it deeper as you tighten the string.

Use an electronic tuner or a piano and tune the string to G3 (G below Middle C)

You can fine tune the position of the bridge to give you the best intonation. To do this - pluck the open string and take a reading on your electronic tuner. Fret the string (push the string down on the fingerboard) just behind the thirteenth fret\* and take another reading on your tuner. This note should be exactly one octave higher than the open string.

*If the fretted note is sharp - slide the bridge toward the tail pin.*

*If the fretted note is flat - slide the bride toward the fingerboard.*

Take another reading and adjust the bridge as necessary until you get a perfect octave.



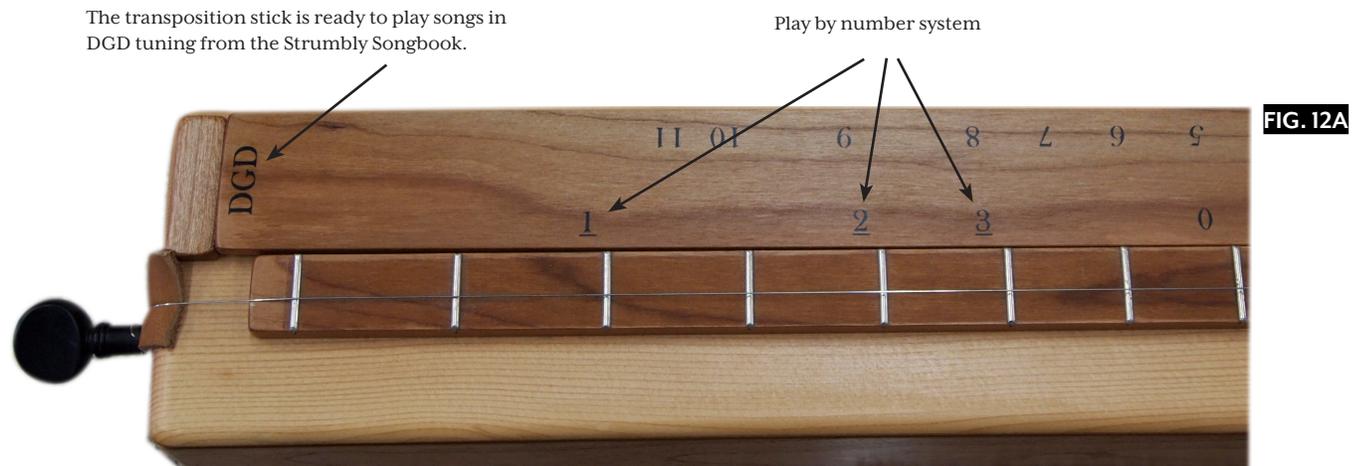
\*The psalmodikon uses a “zero fret” system. This means that the string sits on a fret instead of in a nut when it is open (unfretted). So when you are checking the intonation to locate the bridge you are really fretting it at the 12th fret to get the octave if you count the first fret as zero.

## 12. UNDERSTANDING YOUR TRANSPOSITION STICK

The system of numbering the frets and playing music from numerical notation is quite old with it's use on the Psalmodikon dating back to at least 1825.

Your transposition stick comes pre-printed. There are four numbering systems, one on each side of the stick, front and back. This allows you to read and play all the music in both our Strumbly songbook and the Sifferskrift songbook.

To orient your transposition stick correctly, place the tuning system you want to use near the tuning peg. (fig 12A)



### TRADITIONAL SIFFERSKRIFT

The Nordic-American Psalmodikonforbundet (pronounced - psalmodikonforbundet) has produced an excellent book of music for the Psalmodikon that uses Sifferskrift. Many of the songs are arranged in four-part harmony! This book can be ordered through Musicmakers. Maybe some of your People will be inspired to build their own psalmodikons...?

The Sifferskrift book will explain in detail how to read music using the Sifferskrift notation.

### STRUMBLY SONGBOOK

The Strumbly Songbook includes over 125 songs, most of which can be played on the Psalmodikon!! In order to play these songs you will set your transposition stick to the tuning called out in the Strumbly Songbook

### If you purchased a violin bow

Tighten your bow by twisting the screw. (fig. 12B) How tight? A good rule of thumb is to tighten the bow until you can fit a pencil between the hair and the stick. (fig. 12C)

If you have purchased a brand new bow, you will need to apply rosin to your bow. It is a bit tricky to get rosin on your bow the very first time. We recommend that you scuff the rosin with some low grit sandpaper, a file, or even scissors. (fig. 12D) Rub your bow hair back and forth over the rosin several times. Try out your bow. You should feel it grip the string and it should produce a tone. If you feel the bow sliding or slipping across the string then you need more rosin.

Once you have an initial coat of rosin on the bow you shouldn't need to scuff the cake of rosin any more.

**ALWAYS LOOSEN YOUR BOW BEFORE YOU PUT IT AWAY!**

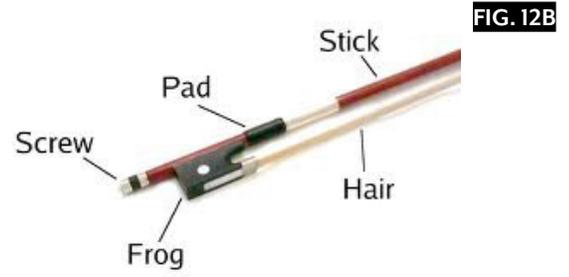


FIG. 12B



FIG. 12C



FIG. 12D

## 13. HOW TO PLAY YOUR PSLAMODIKON

Playing your psalmodikon is simple, though not necessarily easy! Place the psalmodikon on a table so the end with the violin peg is on your left.

Use your left hand to fret the string. You will get the best tone if you fret the string just behind the fret.

You can pluck or bow the string to play. If you are using a bow, bow the string about halfway between the bridge and the soundhole. Getting a good tone with the bow requires some practice. Make sure there is enough rosin on the bow and experiment with the downward pressure until you get a pleasing tone.



Practice a few of the songs on the following pages. Invite your People over and give them a demonstration. I'm sure they will be curious!! Maybe one of your People plays guitar and can play along with you?

**SONGS USING STRUMBLY BOOK**

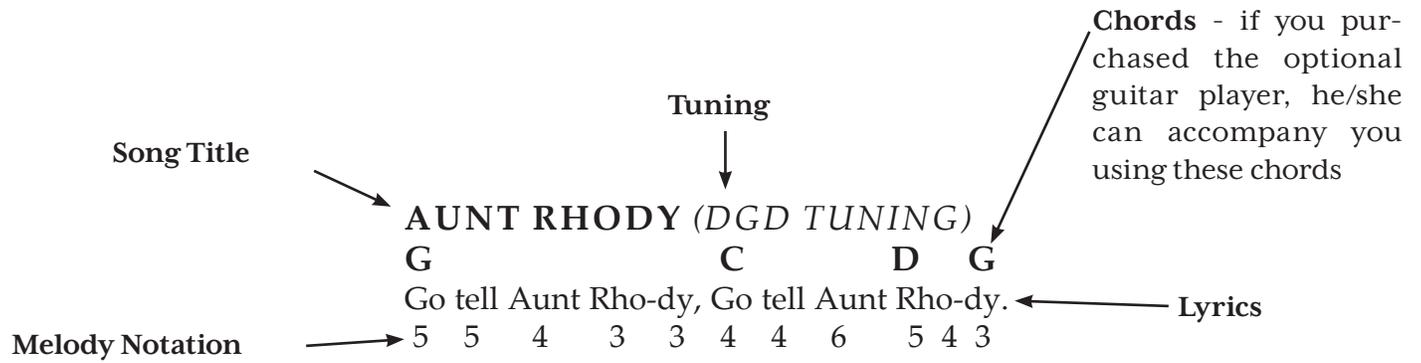


Diagram explaining the Strumbly Notation

**Twinkle Twinkle Little Star (DGD Tuning)**

Twin-kle Twin-kle lit-tle star. How I won-der what you are.

3 3 8 8 9 9 8 6 6 5 5 4 4 3

Up a-bove the world so high. Like a dia-mond in the sky.

8 8 6 6 5 5 4 8 8 6 6 5 5 4

Twin-kle Twin-kle lit-tle star. How I won-der what you are.

3 3 8 8 9 9 8 6 6 5 5 4 4 3

**The Farmer in the Dell (DGD tuning)**

**G G D**  
The farmer in the dell, the farmer in the dell. Hi Ho the Der-i-o, the farmer in the dell.

0 3 3 3 3 3 4 5 5 5 5 5 8 8 9 8 5 3 4 5 5 4 4 3

**Oh Shenandoah (DGD tuning)**

**D G C G**  
Oh, Shenandoah, I long to hear you, away, you rolling river

0 3 3 3 4 5 6 9 8 11 10 9 8 9 8 5 8

**C Em G D G**  
Oh, Shenandoah, I long to hear you away, I'm bound away, cross the wide Missouri.

8 9 9 9 5 8 5 4 3 0 3 0 3 9 8 3 4 5 3 4 3

### Down In The Valley (DGD tuning)

**G** **D** **D** **G**  
Down in the valley, valley so low. Hang your head over hear the wind blow.  
0 3 4 5 3 5 4 3 4 0 4 5 6 4 4 3 2 3

**G** **D** **D** **G**  
Hear the wind blow dear, hear the wind blow. Hang your head over hear the wind blow.  
0 3 4 5 3 5 4 3 4 0 4 5 6 4 4 3 2 3

### Ode to Joy (Beethoven's 9th) (DGD tuning)

5 5 6 8 8 6 5 4 3 3 4 5 5 4 4  
5 5 6 8 8 6 5 4 3 3 4 5 4 3 3  
4 4 5 3 4 5 6 5 3 4 5 6 5 4 3 4 0  
5 5 6 8 8 6 5 4 3 3 4 5 4 3 3

**Home on the Range** (DGD tuning) - **Play along online!!** - browse to [www.harppkit.com/play](http://www.harppkit.com/play) and scroll toward the bottom of the page

**G** **C** **G** **D**  
O give me a home where the buffalo roam where the deer and the antelope play.  
0 0 3 4 5 3 2 1 6 6 6 5 6 8 3 3 3 2 3 4

**G** **C** **G** **D** **G**  
Where seldom is heard a discouraging word and the skies are not cloudy all day.  
0 0 3 4 5 3 2 1 6 6 6 6 6 5 4 3 2 3 4 3

**G** **C** **G** **D**  
Home, home on the range where the deer and the antelope play.  
8 6 5 4 5 0 0 3 3 3 3 2 3 4

**G** **C** **G** **D** **G**  
Where seldom is heard a discouraging word and the skies are not cloudy all day.  
0 0 3 4 5 3 2 1 6 6 6 6 6 5 4 3 2 3 4 3

### If You're Happy And You Know It (DGD tuning)

**G** **D** **G**  
If you're happy and you know it clap your hands. If you're happy and you know it clap your hands.  
0 0 3 3 3 3 3 3 2 3 4 0 0 4 4 4 4 4 4 3 4 5

**C** **G**  
If you're happy and you know it then your face will surely show it.  
4 5 6 6 6 6 1 1 6 6 5 5 5 4 3 3

**D** **G**  
If you're happy and you know it clap your hands.  
3 3 4 4 4 3 2 0 1 2 3

**You Are My Sunshine** (DGD tuning) **Play along online!!** - browse to [www.harppkit.com/play](http://www.harppkit.com/play) and scroll toward the bottom of the page

**G** **C** **G**  
You are my sunshine, my only sunshine You make me happy when skies are gray.  
0 3 4 5 5 5 4 5 3 3 3 4 5 6 9 9 8 6 5

**C** **G** **D** **G**  
You'll never know dear, how much I love you. Please don't take my sunshine away  
3 4 5 6 9 9 8 6 5 3 3 4 5 6 4 4 5 3

**Simple Gifts** (DGD tuning)

**D** **G** **D**  
'Tis the gift to be simple, 'tis the gift to be free, 'tis the gift to come down where we ought to be.  
0 0 3 3 4 5 3 5 6 8 8 6 5 4 3 4 4 4 3 4 5 4 2 0

**D** **G** **D** **G**  
And when we find ourselves in the place just right 'twill be in the valley of love and delight.  
0 3 2 3 4 5 5 6 8 8 6 5 3 4 4 4 5 4 4 3 3 3 3

**Skip To My Lou** (DGD tuning)

**G** **D**  
Skip, skip, skip to my Lou, Skip, skip, skip to my Lou,  
5 3 5 5 5 8 4 2 4 4 4 6

**G** **D** **G**  
Skip, skip, skip to my Lou, Skip to my Lou, my darlin'.  
5 3 5 5 5 8 4 5 6 5 4 3 3

**The Water is Wide** (DGD tuning)

**G** **C** **G** **Em** **D**  
The water is wide, I cannot cross over and neither have I wings to fly.  
0 3 3 4 5 4 4 3 1 0 0 3 3 2 3 5 6-5 4

**G** **C** **Em** **C** **G** **D** **G**  
Build me a boat that can carry two and both shall row my love and I.  
4 5 6 8 6 6 5-4 5 4 3 1 0 0 1 3 3

**Red River Valley** (DGD tuning)

**G** **C** **G** **D**  
Come and sit by my side if you love me. Do not hasten to bid me adieu.  
0 3 5 5 5 5 4 5 4 3 0 3 5 3 5 8 6 5 4

**D** **G** **C** **G** **D** **G**  
But remember the Red River Valley and the one who has loved you so true.  
8 6 5 5 4 3 4 5 8 6 1 1 0 2 3 4 5 4 3

The Psalmodikon is a one string instrument that comes to us from Norway and Sweden. In the early 19th century violins were not allowed in Scandanavian churches because they were used to accompany dancing. Most rural churches couldn't afford a piano or an organ. So this simple instrument, along with a numbered notation system called Sifferskrift, became a popular way to teach hymns to the congregation.



The Musicmakers Psalmodikon is modeled after this instrument that was brought to America in 1860 by Norwegian immigrant Gurina Wikjer.



Musicmakers  
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