

How to play the three-stringed diatonic

HURDY-GURDY

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The hurdy-gurdy described here is of the three-stringed Medieval & Renaissance type, with a diatonic keyboard, adjustable tangents, and of treble size. Having made and restored hurdy-gurdies of many kinds and sizes, I chose the three-stringed diatonic type as the most satisfying and pure to play for myself and to build for others. Tenor and bass pitched hurdy-gurdies have also existed in Medieval times and should perhaps be revived as well.

Since no instruction book or method for this type of hurdy-gurdy exists today, I shall try to pass on enough information on tuning, adjusting, and on playing for the novice to get started.

The hurdy-gurdy is perhaps the oldest known stringed instrument with a keyboard. The strings are activated by a rosined, hand-cranked wheel. A melody and two drone strings (low drone and octave higher second drone) sound at the same time. A very small amount of cotton is wrapped around the string to make indirect contact with the turning wheel. As long as the wheel is turned, a tune can be played by gently pressing tangents against the melody string, The drone strings can be temporarily disengaged if only the melody is wanted.

On diatonic hurdy-gurdies all tangents are movable not only for “focusing” the intervals, but can be moved a semi-tone up or down and thus can be set to play scales in modal, in major, or in minor keys. In addition, the open strings can be tuned to different intervals relative to each other. The diatonic hurdy-gurdy is in no way inferior to the chromatic keyboard hurdy-gurdies of the Baroque, but offering many advantages over the six-stringed Baroque type. (MORE is not BETTER!!!)

Three different sets of strings are available. Each set will work on the **Minnesinger**, as well as on our **Balladeer** models. As long as the sounding string length is about 34 to 35 centimeters, the strings will also work on hurdy-gurdies made by others. The difference is in the **gauges** chosen for a given pitch level: The higher the desired pitch, the thinner the string, the lower the desired pitch, the thicker the string.

Unless ordered otherwise, we will supply new instruments with strings for playing in the key of **-D-**, or a semi-tone higher in **-Eb-**. (Same set of strings tuned higher or lower within the range indicated)

For playing in the keys of -D- or -Eb-

Key of -D-

Tune the low drone to -d’-, high drone to -d’’- melody string to -a’-,

Key of -Eb-

Tune the low drone to -eb’-, high drone to -eb’’- melody string to -bb’-,

Type of String:

Melody string	Gut (always)	0.028” to 0.029” diameter
High drone string	Monofilament nylon or gut	0.020” to 0.021” diameter
Low drone string	Nylon, wound with silver plated copper	0.030” to 0.031” diameter

For playing in the keys of -C- or -Bb-

Key of -C-

Tune the low drone to -c’-, high drone to -c’’- melody string to -g’-,

Key of -Bb- (bagpipes play in that key)

Tune the low drone to -Bb’-, high drone to -bb’- melody string to -f’-,

Type of String:

Melody string	Gut (always)	0.030” to 0.031” diameter
High drone string	Monofilament nylon or gut	0.021” to 0.022” diameter
Low drone string	Nylon, wound with silver plated copper,	0.033” to 0.034” diameter

For playing in the keys of -A- or -G-

Key of -A-

Tune the low drone to -a-, high drone to -a'-, melody string to -e-,

Key of -G-

Tune the low drone to -g-, high drone to -g'-, melody string to -d-,

Type of String:

Melody string	Gut (always)	0.036" to 0.037" diameter
High drone string	Monofilament nylon or gut	0.023" to 0.024" diameter
Low drone string	Nylon, wound with silver plated copper,	0.039" to 0.041" diameter

Low drone strings made of gut with silver or copper winding will sound excellently also if the proper gauge is chosen, but will cost several times as much as wound nylon strings. String gauges needed vary according to the sounding string-length and tuning of the particular hurdy-gurdy model. The stated dimensions and materials will give good results. Increases or decreases in increments of 0.001" to 0.002" in diameter will make a noticeable difference!

Since the hurdy-gurdy can be tuned in many ways, the novice hurdy-gurdy player should get acquainted with a simple system of expressing interval relations by the use of numbers and / or syllables (-do-re-me-). The tuning of the hurdy-gurdy for a particular piece of music can then be quickly identified regardless of the actual pitch level.

Success or failure to create a good sound on any hurdy-gurdy depends mostly on the amount of contact the strings have with the wheel. The first step should be the tuning of all strings to their proper pitch. This is very important as the success of all further adjustments depends on the strings being on their maximum tension for a given pitch level. The wheel must be well rosined and free of any grease or fat on its surface. Use a good quality violin bow rosin. Grind the rosin into a very fine powder and apply some of this powder to the wheel with your left-hand forefinger while turning the crank with your right hand.

Our hurdy-gurdies have special containers built into the keyboard box. One container for powdered rosin, the other for cotton. The strings, without any cotton on them, should be so close to the wheel that only a faint sound is heard when turning the wheel. If the strings are touching the wheel firmly, the notches in the bridge are already too deep. This can be corrected by laying a small amount of cotton under the string at the notch in the bridge. Should the string be too high over the wheel, reverse the procedure: Use a fine needle file and deepen the notches in the bridge until the strings barely touch the wheel when it is turned. This procedure will have to be repeated from time to time because climatic changes cause wood to shrink or expand, resulting in an unbalanced string to wheel contact and faint, or harsh sound.

When the bridge is properly adjusted, the wheel rosined, and the strings tuned, you are ready to apply cotton to the strings. Cotton for a hurdy-gurdy is like horse hair to the violin bow. The cotton acts as a buffer between the string and the wheel, avoiding scratchy noises. The "trick" lies in the right amount! Take a small flake of cotton (small snowflake size) and, while turning the wheel, bring it in touch with the string and the wheel, allowing the wheel to "grab" the cotton and wind it around the string. Do this to all three strings until the quality and volume of sound are well balanced. **Using too much cotton is a common problem!**

Keep tuning the instrument to precise pitch and apply powdered rosin freely, particularly when the instrument is new. The speed of turning the wheel varies according to the diameter of the wheel, but a speed of approximately one turn per second is close enough until you find your own speed. Turn the crank clockwise only, NEVER BACKWARDS, as the cotton on the strings will come unraveled, causing you much more work. As you will notice after playing a while, the intensity of the sound increases with wheel velocity, allowing a modest dynamic differentiation. In general, as one plays towards and in the highest pitch-range, a gradual increase in wheel velocity will make the highest notes sound cleaner and with more of a singing quality. Practicing will be necessary to produce a satisfying and pleasing sound.

All good hurdy-gurdies have movable tangents, like movable frets on viols or lutes. The purpose is twofold: Firstly, on any hurdy-gurdy, to enable the player to “focus” the pitch of each tone up or down as the need may arise, and secondly, (on diatonic hurdy-gurdies only) to allow programming of scales for different modes: Each tangent can be moved the equivalent of a semi-tone by swinging it to either left or right. Unlike the chromatic keyboard of later hurdy-gurdies which require a complex left-hand technique, the diatonic hurdy-gurdy keyboard can be played with one pattern in any mode. The tangents should never be glued to the key shafts. The friction fit of the tapered tangent stem works like a friction peg of a violin. The result of any adjustment to the tangent position should be checked by playing a few notes and only after the open strings are well tuned and balanced.

It is advisable to use a shoulderstrap while playing -wether sitting or standing- **and with the lid open**, to allow quick access to the tangents. On all of our diatonic Hurdy-Gurdies we now identify do-fa-do (1-4-8) with keys and tangents of a different color. (Harps use a similar system for string identification) When tuning the open strings to 1-5-8 (do-so-do) intervals, **a major scale begins on the 3rd key from the left.** (Similar to the 3rd fret of a lap dulcimer)

Place your left hand over the keyboard box and place your fingers on the key-buttons: The small finger on the 3rd button from the left, the ringfinger on the 4th button, the middle finger on the 5th button, the forefinger on the 6th button. The thumb should always stay in touch with the keyboard or lid, respectively, giving the four playing fingers a constant reference point. Small indentations in the keyboard and the lid identify positions for the thumb. For visually impaired people we identify the “home” position (3rd button from left) with an indentation in the keyboard-button as well.

Because most melodies require more than four notes in a row, or involve jumps, the left hand has to move to bring the fingers to higher or lower keys. This is called changing positions. Different tunes require different positions. Work out the best fingerings for a given piece of music and write the fingerings over the notes. With practice your playing technique will advance sufficiently to result in pleasing sounds.

It is also possible to use the Hurdy-Gurdy with only the melody string sounding. The two drone-strings can be temporarily disengaged by lifting them onto the higher notches of the two bridges. The remaining melody string can play a soprano or alto voice of a multi-part composition where the drones are not desirable.

Another use of the hurdy-gurdy is as a drone instrument while playing a three-holed, one-handed tabor-pipe, or a one-handed, 4-keyed pentacorder. (Pentatonic Recorder)

Medieval and other music suitable for hurdy-gurdy is available from Susato Press.

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Instruments, rosin, shoulderstraps, and individual strings by gauges and materials are listed on our website.