

## Pythagoras Monochord

MO-30 P for sound experience and performance



designed by Ingo Böhme

The pythagoras monochord is a onesided overone instrument that is played laying down in a horizontal position. You can use this instrument to explore and teach the relationship between mathematics and music.

### Basic configuration

25 strings tuned in **c**, and 5 bassstrings tuned in **C**.

Ash & cherry wood, size 53 x 12 x 4"

comes with:

tuning key, tuner and some replacement strings.

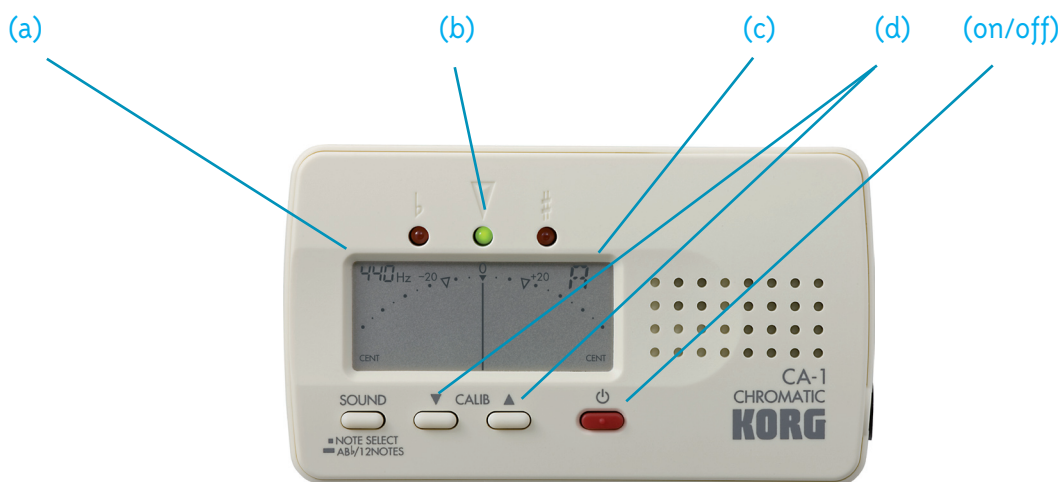
## Recommended tuning c:

25 overtone strings in **c**, 5 braided bass strings in **C** and two braided strings in **g**.

The strings can be tuned a full tone higher or lower than the recommended base tone **c** (**b,c,d**)

The bridges on the monochord side can be moved up or down to change the string length. The default position for the bridge is approximately 2 3/4" from the end.

## The tuner



This compact and easy to use tuner encompasses the whole range of tones from C1 (32,70Hz) to C8 (4186,01Hz) .

Our recommendation for the tuning is to set the tuner to 432 or 440 Hz (**a**).

If there is set an another frequency you can change this by pressing the button (**d**).

This tuner works best when used in a low noise environment.

This tuner displays the notes like this: **C,D,E,F,G,A,B**, no matter which octave .

For example **c'** and **c** will be displayed as „**C**“.

The included tuner is designed to be used in a silent environment if you have to tune in a noisy environment we recommend a clipon tuner (CA-AW3G) or a contact microphone (CA-CM200).

This allows you to tune independent of the noise level around you.

Both are available through feltone.



We ship the instrument pretuned. But because strings and wood are reacting with temperature you will need to tune the instrument upon arrival and after a couple of retunings it will keep its tuning for long period of time.

**Let the instrument rest and acclimate to the new surrounding. After the instrument was unpacked and had rested for a day use the tuning key and the tuner coming with the instrument to tune it.**

## The Tuning process

**Please notice that you only need to move the tuning key slightly, one degree at a time to change the note.**

**For example half a turn of the tuning key will move the tone up several notes and could even cause the string to break.**

The setting for the tuner can be between 440 -432 Hertz (Hz). Use 432 Hz for a natural harmonic tone. If you are playing this instrument together with other kind of traditional instruments use 440 Hz to be compatible. You find more information about this topic in the internet.



### First tuning:

This example assumes you are tuning the instrument to C.

Put the tuning key onto the first peg, plug the string and look at the tuner (Which you have turned on and set to 432 or 440Hz).

-> displayed tone is C and the needle is left from the center or displayed tone is even a deeper note (A# / B)

= the tone is too low, **you need to tighten the string**

--> to tune to a higher pitch you have to move the tuner **clockwise** ↻

-> displayed tone is C and the needle right from the center or displayed tone is even a higher note (C# / D)

= the tone is too high, **you need to loosen the string.**

--> to lower the pitch you have to turn the tuner **counterclockwise** ↻

Just listen to the sound and you will get into it quickly.

**The string is tuned correctly when the needle of the tuner is in the middle and the green LED (b) is on.**

**Tip 1: If you didn't meet the tone exactly, loosen the string a little bit and start it again.**

**Tip 2: Try to match the exact tone with a slow and smooth turn of the tuning key.**

Continue to tune the other strings. Because the pegs are on the right and on the left side, it might be easier to tune the pegs on one side, then turn the instrument around and tune the other side.

### Second tuning:

We recommend a proper tuning every day for at least two weeks. Don't worry if you don't have time every day, even if you tune every other day it just takes a little bit longer for the instrument to stabilize.

After this period the tone will be stable for a long time and even under changed conditions. Perhaps you think that tuning is a lot of work. But this procedure helps you to connect to the instrument, to hear the right tone, the overtones and other sound phenomena.

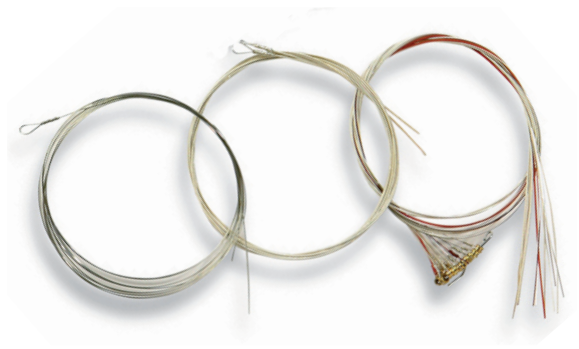
**If you use sound in pedagogic or therapeutic settings, you can use the event of tuning as a kind of awareness test.**

**For a clear, overtone rich sound, a proper tuning is very important!**

## How to replace a broken string

If a string is broken, first remove the string and the rest of the string from the peg.

Keep the pearl as you will need it for the replacement string. Then (important) turn the peg counterclockwise so the peg is pushed out of the wood **and you can see the first thread of the peg emerging!!** The hole in the peg should point toward the string side!!



The peg will be sticking out higher than the other pegs.

If you don't do this the peg will be pushed deeper and deeper in the wood during the tuning process and either the peg will break or the wood will split.

- 1.)After removing the broken string and take the new string , put it on the nail, insert the pearl and then pull the string through the peg hole on the other side of the instrument.
- 2.)Take 1/2 inch of the end of the string and bend it down at a 90 degree angle, using your fingers or a small pliers. Then pull the string back so the bent down piece of the string points downwards at the peg. You want the first two windings of the string to go over the bent down piece of string. If this sounds confusing just look at the other pegs which already have strings on them so you see the end result.
- 3.)Start to turn the tuning key clockwise to slightly tighten the string. Guide the string so that the first two windings of the strings will be over the bent down end of the string the next ones below that.
- 4.)When there is no more slack but the string is not tight yet you can start the tuning process. But first make sure the string at the end of the pearl is in the notch of the wood.

Now you can start the tuning process as described on page 3.

**Important only use the original strings as they are custom made to fit the instrument.**

## How to play

### **Monochord** - creates a relaxing overtone rich sound

If you intend a relaxing effect we recommend to play smooth and steady on the monochord strings to create an even sound wave. Imagine a small, long wave that rolls back and forth on the beach.

a.) Put one finger (middle or ring finger) of the right (or left) hand in the center of the first string and run it smoothly across all strings. Before the finger is at the end, the finger of the other hand starts at the first string. You can alternate both fingers fluently. After a short period you will hear bright overtones coming up and rolling with the movement of your fingers.

b.) Now after you have established the basic tone you can start varying the tone: Try out what happens when you play with the tip or the center part of the finger. By keeping the „flow“ movement of the fingers, move one finger to another part of the strings and play there - other overtones will come up .

c.) Also the strength and speed of your motion changes the sound quality.

## Check out our videos on YouTube at the feltone products channel!

Here you will find more information about our instrument, examples how to play them, tuning tips and more.

[www.youtube.com](https://www.youtube.com/channel/UCVsN6xeKSfgwZODzRAMt38g) -> channel enter **Feeltone**

or

<https://www.youtube.com/channel/UCVsN6xeKSfgwZODzRAMt38g>

## Care and warranty instructions

Wood is a natural material that is alive and reacts with the temperature and humidity. Treat the instrument like you would treat a violin, harp or other fine wood string instruments.

All string instruments appreciate an even room temperature to stay in tune. If the air is too hot and dry, the wood can dry out and it can form cracks!

We recommend to keep the **humidity between 50%-60%!!!**

Care Instruction and Tips to create the best environment for your Instrument:

Don't expose the instrument to extreme temperatures, chose a moderate room temperature.

You can use an air humidifier during the heating period in the winter month or if you live in a dry climate.

Plants in the room with the instrument will help to regulate air moisture.

**Important: especially if you have floor heating, never set a wood instrument on the floor as this will destroy your instrument by drying out the wood which will result into the wood cracking.**

Please note that our warranty is voided, if the instrument was exposed to high temperatures or dry air.

## Enjoy your New Instrument



## Feedback

We love to hear back from you about your experiences, suggestions or comments while working with our instruments.

You can email us at: [info@feltone.com](mailto:info@feltone.com)

Customers from the United States please contact: [gabriele@schwibach.com](mailto:gabriele@schwibach.com)