

## My Fixes that I applied to my Aodyo Sylphyo

The Sylphyo is a nice and compact wind controller that appeals to many players. However, not everybody is happy with certain features like the lack of keys or certain finger positions, etc. This is why I came up with a few ideas to make the Sylphyo playable for myself.

### Here are the problems\* that I had:

- 1) The little finger positions of the Sylphyo don't match my natural hand position.
- 2) I am used to saxophone fingerings and too many keys are missing for my existing technique.
- 3) Too much air is needed for natural blowing.
- 4) I'm dropping the instrument if I want to use an open fingering while using the slider or rolling.
- 5) I cannot get any reliable fast & precise pitchbend working with the built in pitchbend options.

*\*These deficiencies were existing at the time of writing this – part of it could be solved by the time you are reading it.*

### Here are my solutions:

- 1) For being able to place my pinkies where they should be I simple added some copper tape from the “tone holes” (sensors) to the position where I actually place my little fingers naturally.

My choice was self-adhesive copper tape with a width of 2 cm.  
You might want to experiment with different tapes.

Here is where I put the tape for my left pinky:



And here is what I did for my right pinky:



Two things are important:

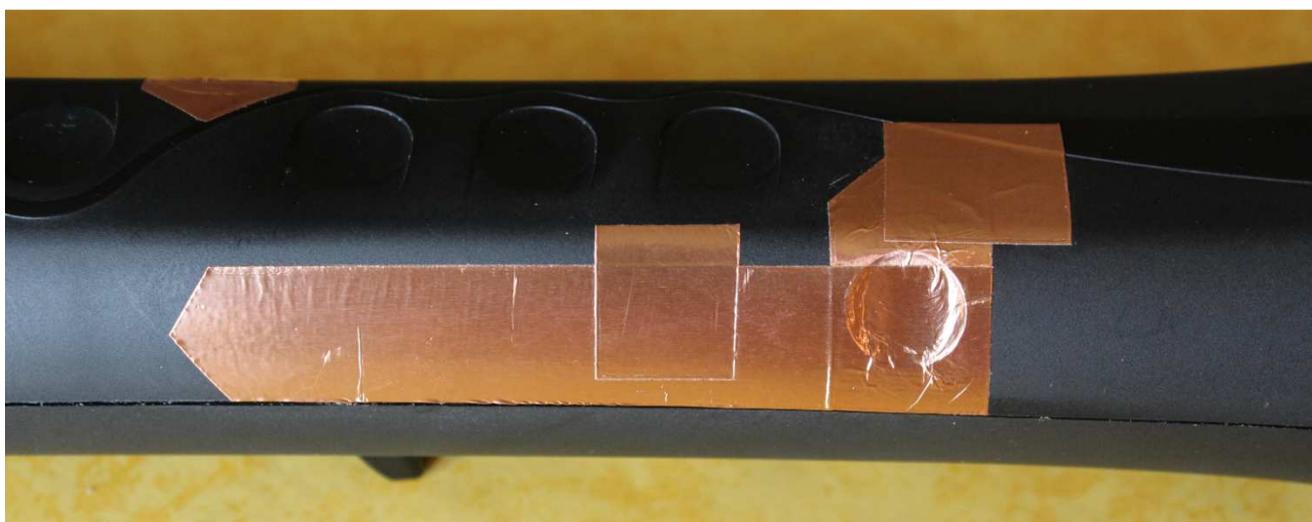
- a) Do NOT come too close to existing sensors or the fingering system will malfunction.
- b) Consider that you might want to use the slider - this is why I extended the right pinky tape a bit downwards.

Please note that these positions are working for my hands!

You might want to check your natural hand position first and place the tapes in your preferred position - making sure to always leave enough distance to the other touch sensors.

Also note that for using the finger bending you might want to evaluate the position of the tapes even further in order to still get a working finger bending.

- 2) For making some missing saxophone keys available that are not existing on the Sylphyo I further extended the right pinky tape up for a saxophone side Bb and an F# trill key.



Aodyo was nice enough to add the EWI (alt.) fingerings upon my request where the right pinky key changes the pitch one semitone up instead of a whole tone down.

For this reason the Bb side and F# trill work only with the EWI (alt.) fingerings.

With a combination of this EWI (alt.) fingering system and the tapes it is possible to play all saxophone fingerings from low D up the middle C# with the exception of Bb bis.

This will definitely make an existing saxophone fingering technique work well on the Sylphyo.

3) When the Sylphyo ships from the factory it needs a massive amount of air.

Way too much for playing long musical phrases without running out of breath before the end of the phrase. Aodyo offers a “Breath adjustment kit” which had unfortunately not been available in the past. For this reason I used a standard inexpensive ear plug to close off the airflow completely.



Playing like this requires a technique that is known from the EWI which originally had no airflow by design. You need to let the air (that usually passes through the instrument) escape on the corners of your mouth.

What happens inside of the instrument is that the air pressure increases as usual. This can be measured by the pressure sensor in the exact same way as if the air was passing through the instrument.

More detailed information on this blowing technique can be found here:

[https://dynasample.com/downloads/EWI\\_Basics.pdf](https://dynasample.com/downloads/EWI_Basics.pdf)

If you are playing with such a closed system it is necessary to readjust the breath parameters for getting the full breath range without overblowing.

Mine is set to Minimum 500 and Range 2250. Your settings might be different. Use this as a starting point.

In any case you should use the “Linear” curve for a more dynamic breath response.

You should also set the velocity range to the maximum of 127 for getting the best articulation response.

Make sure to send only one single breath CC to the XpressO. Use either CC2 or CC11.

*You can definitely ignore the warnings from Aodyo about excessive breath build up and humidity issues. If played correctly there is less air pressure and humidity since no air actually passes through the instrument. EWIs have been played with the same basic type of pressure sensors for more than half a century without damaging the instruments. You might want to remove the plug for drying when not using the Sylphyo for playing.*

*However, since the air passes now on the outside of the instrument something like a hair tie or similar should be used on the mouthpiece to avoid dripping (see picture of my custom mouthpiece which is described below).*



4) Holding an instrument with the fingers that are used for playing is a No-Go for any instrument.

Imagine holding a piano with the same hand that you use for playing while giving a piano recital!

Violin players always make sure that their left hand is never used to support the instrument on the neck. If done anyway the player will run into serious limitations that make playing most of the advanced repertoire impossible.

There are some exceptions like the Boehm Flute that uses the right pinky for holding but this is cleverly incorporated into the fingering system. Other instruments like the saxophone might use the left thumb for holding and playing the octave key. However, different joints of the thumb are used for each function.

On the Sylphyo you need to use all fingers including both thumbs for playing and holding.

This means that a fast and at the same time relaxed fingering technique is not possible since you need to rebalance the weight of the instrument depending on the current note you play or the thumb motion you need. If you want to use the slider while changing octaves your instrument becomes rather unstable since both thumbs are moving at the same time.

Holding the instrument with the original mouthpiece is difficult since it is slippery.

How can you use the roll technique quickly and precisely when you have no finger on top of the instrument? If you do have a finger on top it will be automatically used for holding during the rolling and cannot be moved anymore without redistributing the weight to another finger first. This takes extra time that will slow your technique down.

Playing a completely open fingering like a C# with all top fingers off the instrument and using the slider down at the same time will make you drop the instrument immediately.



My solution was to change the mouthpiece for another type that can be used for holding the instrument.

In my case I used a Melodica mouthpiece (see picture above) that I made fit with a 3D printed adapter (see picture to the left).

I added some padding (as used by sax or clarinet players) on both top and bottom of the mouthpiece to be able to hold the instrument with my teeth.

Now the instrument is stable without using any of the top fingers.

Only the thumbs are needed to support the weight - so you still need to rebalance between the left and right thumb. The above mentioned limitation of the slider bending during an octave change is still there - but you will not drop the instrument anymore in such a case.

Generally my fingering technique has vastly improved with using the copper tapes for a natural arm and hand position as well as with the change of the mouthpiece for not having to use my fingers for holding the instrument any longer.

The only difference is that for rolling I need to roll my head now.

*(As long as rolling is not fixed I will avoid it anyway!)*

5) Up until now using pitchbend in both directions has never worked for me on the Sylphyo.

Being able to bend to both directions and holding the bend state is essential for many techniques on the XpressO like auto-portamento, string position changes, etc.

This immediately rules out finger bending as you cannot hold the pitchbend up position while changing notes.

Using the slider set up to Pitchbending up or down is not working correctly as of now.

When putting your thumb down on a lower place before blowing and trying to bend back up it will reverse the direction.

*(The same reversing behavior can be seen when using the roll function before playing a note.)*

When using the top edge the direction does not get changed anymore as it is the case when using the slider center but placing the thumb below the top edge does not give you any bending at all. So, when starting to move up the pitch will jump all the way down too late and then it starts going back up. This means that hitting a note from below is more like gambling instead of being reliable. Placing your thumb exactly to the maximum down position is next to impossible.

What does work as it should on the slider is using CC1 for the center.  
Unfortunately CC1 gives you a modulation (vibrato) effect but no bending.

This is the reason why I added two global remappings to divide the slider into two sections for bending up and down with a “dead” zone in between for having a safe center pitchbend area.

For setting up a perfectly working pitchbend up/down you need to do this:

Set up the slider (center) on the Sylphyo to sending CC1.

Now you can remap the sliders CC1 to pitchbend up with the first global remapping and pitchbend down with the second remapping.

The first part uses (in this case) the slider values 0-28 for bending up. They must be reversed and scaled in order to have the correct direction and range.

On the Xpresso this looks like this (in [Global]/CC1 Scaling Source and Curve, etc.):

Remapping 1 - bending up:



Remapping 2 - bending down:



The first part remaps CC1 to (internal) CC135 “pitchbend up”. It limits the input to the values from 0 - 28. Then scales it up to the full range of 0 - 127 and reverses it.

The CC needs to be copied instead of replaced in order to keep having it available for the second part.

In the second part CC1 gets remapped to (internal) CC136 “pitchbend down”. The input range is limited to the values 36 - 64 and the scaled to 0 - 127.

As you will notice I used only half the slider because the full slider is much too long for quick changes. It would require changing your hand position so much that placing your top fingers correctly becomes very difficult.

You will also notice that the values from 29 to 35 do nothing in order to have a stable pitchbend center.

The only downside at the moment is that taking off your thumb will send pitchbend all the way up. I’m looking into a solution to keep it in the center . . .

Another issue coming up was: how to find the center position?

If you cannot play normally with the pitchbend in the center you will be most likely out of tune.

What I did was first finding the position on the slider where the output value is exactly 32 - my center.

*(You can use the XpressO MIDI-Monitor for finding the position of this value.)*

Then I made myself a marker with adhesive tape exactly at this position.



I rolled it up a bit to feel it better as you can see by the lighter color on the bottom edge of the tape.

It can be felt well enough to know where the center is without disturbing any thumb actions.

In case that you would like to use two different controllers like e. g. the slider and elevation I recommend using the second pitchbend with the (internal) CCs 137 and 138 for bending down instead of CC136.

I. e. use CC135 (up) and CC138 (down) to avoid the two pitchbends interfering with each other.

You can set the range of both pitchbends separately in each direction.

The auto-portamento function can also be activated separately for the first and second pitchbend.

A word on vibrato:

Vibrato is always executed with the perfectly working breath vibrato of the XpressO.

Shaking the instrument would require holding it with the fingers that are being used for playing.

I cannot recommend such techniques while using your fingers for something else.

Now I finally have all the tools that I need for making music with the Sylphyo!