



## EWI Basics

The EWI / EVI - invented in the 1970s by Nyle Steiner - is probably the best working wind controller that is available as of the time writing this information.

However, to get the most out of it one must understand how it works and how to achieve the best results.

While older instruments like e. g. the violin have common playing techniques that are widely agreed on (even though there are different schools and approaches) there is little information on how to play or set up the EWI in an optimized way.

Beforehand I would like to mention that there is never one single way to go. But in any case the physical principles should be respected for a well working result.

As a developer of the DynaSample instruments I am very interested in usable and clean MIDI data coming from a controller. This allows me to determine reliable information on the musical intentions of the player that can be applied to create variations in sound, articulations and much more in a sound generator.

While various information is gathered during playing the range of possibilities coming exclusively from breath data is seriously underestimated. Playing soft to loud or opening and closing a low pass filter barely scratch the surface of what can be done.

Unfortunately not all wind controllers are able to provide such an accurate output as the EWI does. Even the EWI – if not set up and played correctly – will not work well.

This is why I would like to provide some information on the basic EWI technique after spending many years of playing it and experimenting to get the optimal results.

This comes also from the point of view of what a sound generator expects in order to not just turn a note on and off like many software or hardware instruments still do until now.

Pitchbending is another very important source of MIDI information that is NOT covered here.

Since music is working with time in all dimensions - from pitch frequencies to rhythms and much more - one must understand that the timing of the midi data coming from a wind controller is also crucial to determine the articulation quality that the player intends from a musical point of view. This is happening inside of the controller for creating velocity and in the sound generator for creating techniques like velocity (only if needed), vibrato, flutter tongue, string releases, etc.

For this to work correctly both the setup of the controller and the playing technique are very important. A clean fingering technique that avoids double notes (which are breaking note transitions) should never be underestimated!

This information does not provide any detailed technical setup instructions for individual controllers. It tries to explain the background information needed to understand the problems that arise from wind controller playing.

## How to blow

Do this first without your instrument:

1) Put a finger in your mouth and seal your lips around it.

Then try to blow. You will notice that this doesn't work – no air passes!

2) Blow again while relaxing the corners of your mouth (keeping the center of your lips in contact with your finger). Now the air escapes on the sides of your mouth and you can blow freely without actually blowing air "through your finger".

However, you should **\*think\*** that you are blowing into your finger!

*History:*

*The EWI / EVI was originally (in the 1970s) a fully closed instrument with zero air passing through it. The technique described above was the only way to let you actually blow for having a wind instrument feeling and allow fluent articulations like tonguing, etc.*

Mouthpiece:

Bite lightly onto the mouthpiece with your upper and lower teeth. Do not apply any force - just gently keep it from moving around. Reserve any force for actually using the bite controller to send data. Find the position of your teeth on the mouthpiece where your bite controller works most efficiently.

Blow like you did before and you will build up air pressure inside of your mouth and mouthpiece.

This **\*air pressure\*** is what is being registered by the EWIs pressure sensor and used as "breath control" - not the actual air flow. Since the pressure sensor is closed air does not even move in this area.

You can regulate the amount of air that you are using from (almost) "nothing" to "a lot" with the opening of your lips. This technique lets **\*you\*** - and not the instrument - control how much air you use.

Tongue:

Do not tongue directly on the mouthpiece!

Place the tip of your tongue on the roof of your mouth and articulate with a "da-da-da" or "ta-ta-ta" - depending on how hard you want to articulate. For faster articulations in a non-staccato tenuto style some people also use "da-dl-da-dl-da-dl". For fast double tonguing use "ta-ka-ta-ka".

*Tonguing directly by closing and opening the mouthpiece with the tip of your tongue will result in poor articulations. You will only get "on / off" but no nuances in between.*

*However, the internal sounds of the EWI (as of the date of writing this) do not register any articulation nuances anyway. But it's generally a good idea to do this correctly from the start to avoid creating bad habits.*

Make sure that your breath sensitivity is rather high so that you can get loud without having to work hard!

*Having to blow hard limits your velocity range. The full range is mandatory for a responsive attack behavior of the XPression and XpressO. It is also needed for all percussive instruments (like piano, mallets, etc.) on any sound generator.*

*Velocity is used on these sounds for the volume at the start of the note only. Breath control cannot change their level anymore during sustaining the note. "Dropped" notes are usually caused by bad velocity.*

For information about the calibration of the EWI5000 and EWI Solo please read here:

[https://dynasample.com/downloads/EWI5000\\_setup\\_for\\_use\\_with\\_the\\_XPression.pdf](https://dynasample.com/downloads/EWI5000_setup_for_use_with_the_XPression.pdf)

*The reason for this behavior is that a low breath sensitivity requires more air and therefore more time to build up breath pressure to the maximum level since the way to go is longer.*

*The EWI measures your breath after about 20ms of each new note and outputs it as a MIDI note (including the note pitch and the velocity information).*

*If you need e. g. 40 ms to reach the full volume instead of 20 ms you will be at approximately 50% when the note is created. This means you can never reach the full velocity range.*

*For producing the maximum velocity in the scenario described above you would have to double the internal latency. Doubling the velocity value does NOT work as the build-up curve is usually quite unpredictable and would lead to inaccurate values.*

The EWI5000 and the EWI Solo have a setting called Capture Delay or "CT" which is by default set too low to function correctly. Set it to a higher value (like "5") on the EWI5000 and EWI Solo. Otherwise your velocity measurement will be taken too early and will therefore be too low and inaccurate.

Also the breath sensitivity is by default much too low on these EWIs.

General Observation:

Make sure to stay always relaxed with both your mouth and your fingers!

## Fingerings

Use the EWI fingerings for woodwind style playing!

The EWI fingerings were created for the EWI to work best. Like saxophone fingerings were created for the saxophone and are not simply taken from another instrument like the flute or oboe!

The EWI fingerings give you almost endless alternative fingerings (approximately 4,000 of them). Almost all basic fingerings are identical with the saxophone fingerings.

*(Please note that the EWI and saxophone fingering charts have been reversed on all Akai manuals!)*

*The EWI fingerings are actually "brass style" fingerings where every valve / key is always active. There are only three exceptions to this system to achieve better saxophone compatibility.*

*1) K3 (A) changes to a semitone down if K1 (B) is not pressed – this is for the standard saxophone C fingering.*

*2) K8 (first finger on your right hand) changes to a semitone from a whole tone down if K4 (G) is not pressed.*

*3) Key 2 (Bb bis) has no function if both K1 and K3 are pressed - otherwise it is a semitone down.*

*(Please note that K5 (G#) and K7 (side Bb) use the same electrical sensor pin - so they do not add up!)*

*Once you look at it this way the argument that the EWI fingerings don't follow any acoustic behavior of wind instruments because it is electronic is false! It follows perfectly the behavior of **\*brass\*** instruments – but not woodwinds (!) – once you accept the three exceptions mentioned above.*

Other fingering options like sax or flute, etc. are not recommended. They cannot be used like on the original instrument due to the lack of certain keys for each instrument.

This means that you would have to relearn quite a few key combinations anyway – even though you think you knew the fingerings already. So IMHO these fingerings are useless and do not make any sense for the EWI at all . . .

If you are a brass player you might want to go for the EWI fingerings.

The EWI fingerings are close to the brass fingerings but not always exactly the same as commonly used by most brass players. They require some practicing until you are accustomed to playing the half octave with your left index finger and always finger the first (low) octave from C# to C while changing octaves with your left thumb. So you need to coordinate two hands instead of one with an acoustic trumpet.

*Using the first finger of your left hand is often used on piccolo trumpets for the additional fourth (quart) valve.*

## Holding and Octave Rollers

Hold your EWI with an angle of about 45 degrees or higher to your body. It should look like an oboe or clarinet and not be hanging downwards like a tenor sax.

Support the weight with your right thumb and stabilize the instrument by biting very lightly (i.e. without triggering the bite controller). With the optimal angle the EWI should balance almost by itself on your right thumb. Your right thumb is between the pitchbend plates without touching any of them.

All fingers are completely relaxed and are never used for holding the instrument (except for your right thumb). The worst thing to do is supporting the weight with your left thumb!

I think it is a good idea to include octave changes pretty much immediately in your daily practice routine instead of avoiding them.

One thing that makes the octave rollers work best is a correct thumb position.

- 1) Put your thumb on a 90° angle to the rollers – always in contact with the ground strip.
- 2) Put your thumb inwards (to the right) as much as possible without touching the glide strip (i.e., going beyond).  
*(This gives you the maximum surface for an optimal electrical contact.)*
- 3) Your wrist always moves in parallel with the rollers.  
Do not keep your wrist in one place and move or turn your thumb!  
If you do turn your thumb, you will change angles and each octave transition will be different and thus unpredictable.
- 4) Your thumb should be flat in between two rollers trying to cover almost the entire space to the next roller up and down. This way it takes almost no time to hit the next octave in any direction.

*You will notice that you need to turn your wrist and your pinkie, ring finger and middle finger will move upwards. When changing octaves your entire hand moves with the roller position to keep the 90° angle and you need to readjust your upper finger positions.*

*Your top fingers will not be in an optimal position if you play like this but usually they can easily adjust and don't cause any real trouble like your thumb will if you do it differently.*

- 5) Just **\*touch\*** the rollers - NEVER PRESS or apply any force !!!  
Do not support the weight of your EWI with your left thumb! This can drastically slow down the speed of your thumb moving on the rollers.
- 6) Make sure to always have contact with the ground strip. I. e. DO NOT **\*lift\*** your thumb away from the rollers.
- 7) For using the glide strip move your entire hand (except top fingers) towards or away from the glide strip.  
The best way for using the glide strip without interfering with the octave rollers is by moving your left elbow down (more glide) or up (less glide).  
Clearly separate the octave and glide strip movements. These are independent movements - each on its own axis.
- 8) Keep checking frequently if your position is still correct!  
I still do after many years!

### Additional information:

*The octave rollers shouldn't really be placed in parallel to the top keys because your hands are not built like this. The thumb is on a 130° angle to the other fingers and not on a 180° angle.*

*However, since you don't have any choice you should accept minor problems with your top fingers rather than going for big trouble with your thumb and the octave rollers . . .*