

# Zero-G PERPETUO: LIVE FLUTE PHRASES MANUAL



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# CHAPTER 1

## INTRODUCING PERPETUO: LIVE FLUTE PHRASES

Performed by a world-class flute and piccolo player from the Liverpool Royal Philharmonic Orchestra and recorded in Liverpool's famous Parr Street studios, Perpetuo: Live Phrases is an 8GB collection of thousands of live recorded 3-bar looped phrases compressed down to 4.6GB using Kontakt's lossless compression technology. Despite recording only one player, the instrument cleverly layers up to 3 different bars in real time for the effective sound of a flute trio, or if you wish, you can dial it down to the sound of a solo flute.

Perpetuo bridges the gap between premium libraries which have excellent control, but can sound artificial on certain passages (such as runs, arpeggion, fast rhythms), and pre-recorded melodic phrases libraries, which can sound dazzling on first listen but have little useful control and can grow tired quickly.

Despite being made from pre-recorded phrases, Perpetuo remains highly controllable. This has been achieved by recording the same patterns across a wide pitch and dynamic range with many scale variations, by choosing patterns that blend in particularly well to a wide variety of musical styles, and then by allowing you to automatically sync to the tempo of your projects with a wide variety of rhythm and scale types all controlled with key switches. Dynamic levels pp to ff can be smoothly crossfaded by mod wheel, the ensemble size can be zoomed from solo to 3 players, and two mic positions (close and room) can be chosen or blended.

And so, you get the advantages of recorded patterns and phrases (that is, fluidity and realism), and yet also many of the advantages of a standard orchestral library (that is, flexibility).

Although it sounds great alone, Perpetuo works particularly well blended with other premium orchestral sample libraries as a way of introducing a new layer of realism into the sound.

### LIBRARY FEATURES

**Arpeggios and Runs (selectable from key switches):** Major, melodic minor, harmonic minor, sus2, sus4, diminished, augmented, minor 6th, minor 7th, 7th, major 7<sup>th</sup>, fifths, eastern, chromatic, whole note and other scales.

**Rhythm Types (selectable from key switches):** 8ths, 16ths, 8th triplets, 16th triplets, quarter note triplets.

**Ensemble Size:** Switchable between Solo, Duo and Trio

**Mic Positions:** Close and Room (with separate volume and pan controls).

**Effects suite:** convolution and algorithmic reverbs, delay, modulation effects, distortion, compression.

**Patch Types: Main** (natural sounding flutes & piccolos with only major & minor patterns loaded by default to save memory), **Hi-Memory** (all scale types loaded), **Mod Wheel Filter** versions (versions of the Live patches, but with the Mod Wheel controlling the filter for a gently synthesized effect) and **Mutated** (processed, sound designed patches).

**Additional Options:** Load and unload scale types to save memory. Play at double or half project tempo. Spread the players from widely-panned to a close central group.

## WHY IT WAS CREATED

Library producer and trailer music composer Dan Graham started out needing a tool that would add realism to his sampled scores on projects that didn't have a budget for live orchestra. In particular, fast runs, arpeggios and simple rhythms remain difficult to get totally convincing even with the best and most expensive collections, and so he set out to create something that could sit well in the mix, based on live phrases for realism, but flexible enough to blend in with any track.

2011's hit library 'Spiritoso: Live Cello Phrases' was the first stage of this plan, followed by 'Luminoso: Live Violin Phrases' in 2012. Now after a year in development Perpetuo extends the principle to flutes & piccolos.

## BENEFITS OF LIVE PHRASES

Because the flautist played the actual patterns you hear, they sound real. They are built from 3 bar loops so that no two notes or consecutive bars sound exactly the same - there is natural variation. When you hear slight legato connections between notes it's because that's what were played, not a clever reconstruction of a legato interval using advanced scripting. And with fast rhythms, you are not hearing the usual round-robin repetition articulations; you are hearing 3 bars of completely different notes being played naturally in slightly different ways, flowing smoothly just as they were performed.

## FLEXIBILITY

This collection is built around the principle of flexibility. The tempo will fit your project. The same patterns were recorded at 3 dynamic levels, pp (pianissimo - soft) mf (mezzo forte - medium loud) and ff (fortissimo - loud) and by controlling this with your mod wheel you can make the patterns constantly undulate, expressively following the crescendos and diminuendos of your compositions. You can also use this mod wheel control to accent particular notes and therefore create syncopations and rhythmical emphasis tailored exactly to the music.

**As a case in point, with the 'Rhythms' patch you can automate the different rhythm key-switches (e.g. 8ths, 16ths, 8th triplets) in fine detail in your sequencer, and therefore build your own custom rhythm patterns, and finally add accents by automating the mod wheel dynamics.**

## THE HIDDEN POWER OF THE UNOBTRUSIVE

Whereas some of the patterns might start to sound too recognizable if overused, others are very neutral, for example "Up Down 8ths" which simply goes up and down from root to fifth, or 'Rhythms' played on one note. These are simple patterns which will blend well within a complex piece of music yet impart that elusive quality of realism, expressiveness, humanity and live playing which is still missing from many orchestral libraries. You may find these 'Up Down' and 'Rhythms' instruments to be the ones you keep going back to.

## 3 x ROUND ROBIN

These instruments have a 3 x round-robin effect created by randomizing the start point of the 3 bar loops, which greatly helps realism by avoiding machine-gun effects.

## REQUIREMENTS and RECOMMENDATIONS

Kontakt's Time Machine 2 algorithm requires Perpetuo to run entirely in memory. Although you can keep memory low by not loading up unused scale types, for maximum flexibility it is recommended that you use this in a 64bit environment with over 4GB RAM. **A full version of Kontakt 5 or above is needed.**

## CHAPTER 2

# USING PERPETUO: LIVE FLUTE PHRASES

### UI: Main Tab



At the bottom of the ui there are 3 tabs: Main, Effects, and Master EQ. When you first load any instrument by default it loads with the 'Main' tab active.

### Key Switches:

At the bottom of the UI there's a big keyboard just over an octave in length. This shows which scale or rhythm types are available (e.g. Major, Suspended 2nd, etc.), what key to find them on, and what switch is currently selected.

To help you remember them, the choice of notes for key switches makes a sort of sense – they are usually on a note that would have an important function if the key was in C. For example in C, Eb is the note which makes in a minor key. This is only a bit of a rule of thumb though – there were often too many variations to make it completely intuitive. Also you'll see above that 'Maj' appears twice on the C and E notes which is just because both notes seemed equally intuitive to represent the major key – it's just the same scale triggered by two different notes.

## Scale Types:

Different instruments have different chord or scale types, chosen according to what would be the most suitable for each instrument. It's highly recommended that you listen to all the possibilities to get a sense of the different emotional effects of the different scale and chord types

The chords and scales you will encounter in most instruments are:

- **Maj (major)**. The basic western major scale
- **Min (minor)**. Minor chord / arpeggio.

The available options for run and arpeggio instruments are different and consist of:

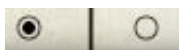
Run Types:

- **Chrom (chromatic)**. Scale where every interval is a semitone. Great for filmic runs, it belongs to no standard scale so remains ambiguous and flexible, with an emotional effect of urgency and danger.
- **East (eastern)**. A major scale but with flattened 2<sup>nd</sup> and 6<sup>th</sup> notes (e.g. in C, Db instead of D and Ab instead of A). A very colourful magic carpet ride of a scale.
- **Whole (whole note)**. A scale where every interval is a whole tone. An immediately filmic, ethereal effect often used by Debussy, and anyone since who needed to score a dream sequence or angel.
- **Harm m (harmonic minor)**. One of the two main types of minor scale, with a 7<sup>th</sup> (e.g. in Am, a G#).
- **HW (half-whole)**. A scale following a regular interval pattern of half-whole-half-whole etc. It has a nice ambiguity, not being a standard scale type, and avoiding the urgent danger of too many semitones, or the ethereal otherworldliness of too many whole notes.
- **Mel m (melodic minor)**. The other type of minor scale, with a flattened 7<sup>th</sup> (e.g. in Am, a G natural).
- **b7 (flat 7<sup>th</sup>)**. Otherwise known as a 7<sup>th</sup> scale (e.g. a Bb instead of B natural in the key of C major).
- **WH (whole-half)**. Similar to half-whole but the other way around.

Arpeggio Types:

- **Min6 (minor 6<sup>th</sup>)**. Minor chord with an added 6<sup>th</sup> (e.g. F# added to an Am). This is your perfect mystical fairytale chord!
- **Min7 (minor 7<sup>th</sup>)**. Minor chord with added flattened 7<sup>th</sup> (e.g. G added to Am).
- **Sus2 (suspended 2<sup>nd</sup>)**. Chord containing a 2<sup>nd</sup> note instead of third (e.g. a D instead of E in the key of C).
- **Sus4 (suspended 4<sup>th</sup>)**. Chord containing a 4<sup>th</sup> note instead of a third (e.g. an F instead of E in the key of C). This one really wants you to resolve it to the major chord.
- **Dim (diminished)**. Flattened 3<sup>rd</sup> and flattened 5<sup>th</sup> (e.g. in C, Eb instead of E and Gb instead of G). Lazy classical-era composers liked these, because they get you from any chord to any other chord without much hard work. Composers stopped using them so much after Wagner when they realised they could just jump to the other chord without bothering to go through anything.
- **5<sup>th</sup> (fifth)**. In C this would be just the notes C and G. Because these two notes are compatible with so many other chord types, it's highly recommended to use this option where you just want some strings chugging away anonymously in the background like an acoustic guitar to gel together a complex rock, hip-hop, dance or pop track.
- **Aug (augmented 5<sup>th</sup>)**. Chord with a sharpened 5<sup>th</sup> (e.g. in C, G# instead of G natural). This gives an instant filmic, otherworldly quality and is the natural companion to a Whole Note run, because it is made up of notes from a whole note scale.
- **7<sup>th</sup> (7<sup>th</sup> chord)**. Major chord with a flattened 7<sup>th</sup> (e.g. a Bb instead of B natural in the key of C major).
- **Maj7 (major 7<sup>th</sup>)**. Lovely bittersweet chord – major with a 7<sup>th</sup> note added (e.g. a B added in the key of C).

## Load / Unload Buttons:



By default each instrument loads with the most common scale or chord types: usually major, minor and fifths. Clicking each circle allows you to load and unload all the other possibilities into memory. If you've gone 64bit and have plenty of RAM, you could load them all up and save the new nki so that next time you'll have them all available.

## The Mod Wheel Expression Monitor



All the patterns were recorded at three levels: pp, mf and ff, which you can glide between using your Mod Wheel. As you do this the attractive LED-like display shifts colour from cool blue to red, for helpful visual feedback.

*Using the Mod Wheel to control the dynamics is an essential part of bringing this library to life.*

### MOD WHEEL TIPS:

#### Using the Mod Wheel for Expression

By changing the Mod Wheel level throughout a piece of music, a simple flute or piccolo accompaniment can sit in a mix continuously evolving and expressing the dynamics of the music – swelling into fills and dropping down where needed. This way, the simpler Perpetuo instruments like the **Up Down** instrument and the **Rhythms** instrument can glue together a mix with a sense of expression and live performance, while blending in exceptionally well.

#### Using the Mod Wheel for Realism

Plenty of Mod Wheel movement will greatly increase the realism by making sure that the flute or piccolo part is always evolving, not repeating itself.

#### Using the Mod Wheel for Accenting Notes

Another important use of the Mod Wheel is to accent particular notes. This is especially important with the **Rhythms** instrument, which could get repetitive if left running with no expression. By accenting certain notes within a bar, you can get realistic sounding syncopated effects.

## The Players Control



Each instrument usually defaults to solo, the minimum. You can increase your ensemble to Duo or Trio by left clicking your mouse and dragging upwards.

The large ensemble effect is being created by layering 3 bars from 1 player, and although it does therefore sound a bit different from a real room full of players, this layering does add much of the thickening and widening effect you would expect from an ensemble. So, for the absolute maximum realism you might prefer to go Solo, but for the thickest sound, Trio is best. Which you choose will depend on whatever sounds best in your piece.

## Mic Setup



They were recorded with a single close mic on one flute or piccolo and a stereo pair of U87s in an XY pattern at 15 feet.

The two mic positions sound quite different, so it's best to play around and find the right blend for your piece. The Close mic alone has the benefit of a more tight focus. The Room mics have the benefit of adding depth, size and colour to the sound. Blending them uses more memory but produces a nice balance between the tightly focused close sound and the more open and vague room sound.

## Tempo Sync



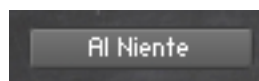
By default Perpetuo will sync to your host sequencer. When you select the **'Host Tempo' pull-down menu** you have the option to double or half the tempo, or even alter it into a triplet division relative to the host tempo. Note though that unless you're looking for an interesting polyrhythm or syncopated effect, it's better to use the true triplet nki instruments than stretch 4/4 patterns into triplets, for more natural bar-start accenting. You also have the option to switch off host sync and put in a manual value using the tempo peg.



The **Trigger Sync** option delays the start of a note until the start of a beat. This can be very useful when auditioning, because it makes sure that every note you play is triggered in time with each other. So, for example if you play a chord using the 'Rhythms' nki, you will hear them all chugging together in time, instead of a badly triggered mush. This option is also useful for live playing or recording a performance, ensuring that everything sounds in time.

For sequencing, where you have control over the note starts and the ability to quantize, it will be better to leave this option switched off.

## Options



**'Al niente'** is an Italian musical term meaning 'from nothing'. When this is selected the Mod Wheel fades up from silence instead of starting from a quiet but audible pp. This might be very useful if you wish to use the Mod Wheel (or CC1 automation) to fade Perpetuo completely in and out of a piece.



Direction

**Direction** triggers the patterns from midway through the bar instead of at the start. The result is a whole new set of patterns – arpeggios that come down instead of up, rhythms with accents in the middle of the bar and so on.

Extend Range

**Extended Range** stretches the pitch range below and above the recorded two octaves. Because the pitch shifting makes the sound a bit artificial it was left off by default, but in a busy mix you should find the extra notes useful and quite convincing.



**Player Spread** allows you to make the stereo spread of the players wider or narrower. This is not the same as artificial mono-izing or stereo enhancement. What is happening here is that each of the 3 bars is being layered together in real time in a different pan position, and with this control you can choose how widely separated those pan positions should be. The default 100% sounds well balanced. 200% gives a wide stereo sound, while 0% gives you a narrower, tightly focused sound, but not a mono sound – on the Room Mic you are still hearing the flutes & piccolos recorded with stereo microphones for a natural ambience.

## UI: Effects Tab



When you first select the 'Effects' tab (at the bottom of the Perpetuo UI), it defaults to the 'Easy Edit' screen, giving you a snapshot of available and selected effects, with their main controls available. For more detailed editing click the 'Easy Edit' tab and go into the detailed settings for each effect type.

There is a nice impulse reverb available by default but for the best possible results you are encouraged to disable all effects and use the best plugins you have.

## UI: Master EQ

This is offered to allow you to quickly tweak the tone, but as with the effects it is highly recommended you use a higher quality third party EQ plugin instead.

# CHAPTER 3

## INSTRUMENTS GUIDE

The Instruments folder has 4 different groups of sound:

1. Main (realistic, minor and major only loaded by default to save memory)
2. Hi-Memory (all scale types loaded)
3. MW Filter (like live with a handy mod wheel filter added).
4. Mutated (morphed with sound design techniques).

### 1 - Main

These are the realistic sounds, playing back the patterns recorded. The different types of pattern are:

#### **Slur and Stac** (Staccato)

**Slurring** is playing the run or arpeggio in one breath, with no gaps between the notes, while **staccato** is each note played separately and shorter in length.

#### **Arpeggios ('Arp')**

These are the notes of a chord playing in a sequence, either in 8<sup>th</sup> notes (quavers) or 16<sup>th</sup> notes (semiquavers). A wide range of arpeggio types are available using the key switches, from the more common major and minor to more interesting options like diminished, 6ths, 7ths, suspended 4ths etc.

**Runs** play all the notes in a scale, not just those on the chord triads. Like arpeggios, you will find many types of scale on the key switches.

The **Polyrhythm ('PolyR')** instruments have three-note accenting within a 4/4 meter. The effect is that the accent keeps drifting onto different beats in successive bars, an effect which can help the part to feel more natural and less mechanically repetitive. Try it and see if it works with your piece. Exposed in the mix it could make a 4/4 piece seem to be in 6/8 and confuse the listener, which could be a good thing, if you're a master of mystery and obfuscation.

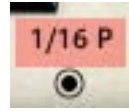
#### **Rhythms – IMPORTANT!**

There is only one Rhythms instrument, **but this may be the most important nki in the whole library**, because it is incredibly flexible. Unlike all the other instruments, this only plays one note but in different rhythm patterns, chosen using key switches. Benefits of the rhythms instrument are:

- (a) You can play whatever notes you want rather than being bound by a preset pattern
  - (b) By **automating the key switches** in your sequencer you can build up complex rhythms – almost any rhythm that you could want. There is more on this in Chapter 4 – Tips.
  - (c) Of all the instruments, the Rhythms blend the most discretely into a piece, gently imparting expression and realism without being obvious.
  - (d) Quickly repeating rhythms are often the weakest part of even the best orchestral sample libraries, and this instrument, which really excels in this area, can really help to hide the fakery.
- Rhythms Note #1:** The rhythms were recorded with the player asked to **accent the first beat of every bar**. Players will often do this naturally to emphasize the bar starts, and having this

as part of the rhythms instrument helps realism and also gives a sense of urgency and momentum to the sound.

### **Rhythms Note #2: Polyrhythm 16ths**



As well as the 1/16 regular 16ths, you will notice '1/16 P' on the E keyswitch. This has a 3-note accent offering a syncopated effect.

**Tremolo** is played with short gaps in the note to create a trembling effect, working best with Trio.

### **Up-Down**

This has a two-note up-down quality. Using the GUI (Main/Options/Direction) you can switch the Up Down pattern to a Down Up pattern.

As with the Rhythms instrument, these **blend exceptionally well into arrangements**, giving a sense of realism and expression without jumping out of the mix. By sticking to two notes, they allow other parts of the mix to express the melody and harmony while doing a great job of gluing the sound together.

### **Velocity Stac**

Short staccato sound. While almost all instruments have dynamics controlled by the Mod Wheel, it is more natural to play a short staccato instrument using velocity to control dynamics.

## **2 – Hi Memory Sounds**

These are the same as the main sounds, but have all scale types loaded in by default. It takes more memory but can be more convenient to audition the different key switches this way.

## **3 - MW Filter Sounds**

These are the same as the Main sounds, but with the Mod Wheel mapped to a filter. These can be handy to bring an instant hybrid synth edge to whatever pattern you wish to use.

**Filter Tip:** if you load both the Live and MW Filter versions at the same time it uses no extra memory, and so you could have each on a different MIDI channel and switch between them as you see fit.

## **4 - Mutated Sounds**

Sound design techniques have been used under the hood to take the sounds off into glorious organic-synthetic soundtrack territory. The pitch ranges have been extended by stretching the sounds across the whole keyboard, allowing you to use it as a powerful, inspiring pad or pattern-generating synth. The result can be quite hypnotic, organic and dream-like.

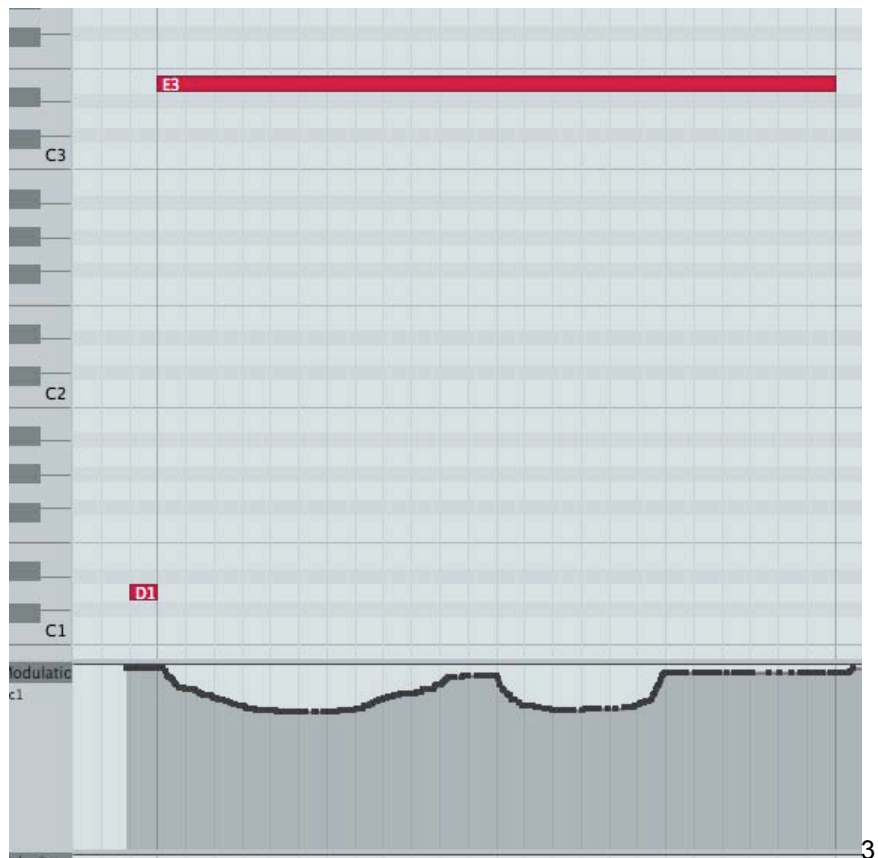
## CHAPTER 4 TIPS

Here we present some tips to help you get the best out of the library.

### Tip #1 – Use the Mod Wheel for expression and realism

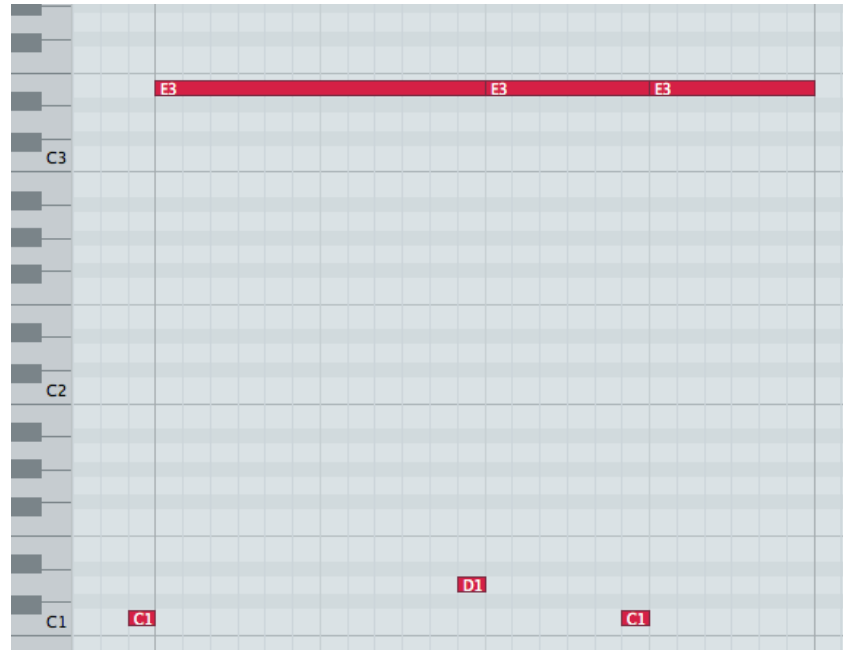
Just to labour the point, for expression and realism, **keep moving that Mod Wheel**, and automate the CC1 controller in your sequencer so that it's always moving across the piece of music. This will help the flute & piccolo patterns fit in with your music by rising and falling in intensity, and will add realism by preventing it sounding repetitive.

### Tip #2 – Use the Mod Wheel for accenting notes



This image shows how you can use the Mod Wheel (and CC1 Automation) to **accent notes**. If you create a sequence using the Rhythms Instrument with just 8<sup>th</sup> notes playing, by increasing the Mod Wheel on certain beats a syncopated rhythm can be created.

### Tip # 3 - Create custom rhythms in your sequencer



With the Rhythms instrument, you can create complex custom rhythms by sequencing the key switches – for example having 2 beats of 16ths, 1 beat of 8ths and 1 beat of 16ths, as per the example above. To do this you need to re-trigger the pitched note (above it's a C1) whenever the rhythm changes, and it is advised to place the key switch note a 16<sup>th</sup> note before the new rhythm begins, to give Kontakt a chance to register the key switch.

### Tip #4 - Use negative delay in your sequencer (or trigger the samples early)

Part of the greatness of the flute and piccolo sound is in the attack transient, which comes in fairly slowly, reaching the peak of the attack around 30ms. Because we recorded the whole attack it will have the effect of always appearing a little late, peaking 30ms after the beat. The remedy is to set up a negative delay in your sequencer. Try values between -20ms and -30ms to get it locking in properly. Alternatively move all the notes before the beat by trial and error until it sounds in time.

### Tip #5 - Keep going back to Rhythms

The **Rhythm** Instrument has a great quality of being able to sit in a mix without being obvious, and unlike all the others allows you to play any notes and chords that you like. It's a flexible, general musical tool.

### Tip #5 – Use your own reverbs and EQs

If you have great reverb and EQ plugins of your own, disable the Kontakt versions and use yours instead. The supplied Impulse reverb is pretty good, but you may have better. The Kontakt EQ is quite neutral but there are many better sounding EQs out there, especially if you're looking for some vintage character.

### Tip # 6 - Use it as glue for your tracks by hiding it in the mix

It sounds great when heard loud and proud, but it has a whole extra role when somewhat hidden in a mix, especially with the more subtle Instruments like **Rhythms** and the **Up Down** Instruments. In a complex mix it will be barely audible because of the rich sound and repeating quality, and yet it will glue a track

together like hi-hats or acoustic guitar strumming, while adding a beautiful halo of feeling, *especially if you automate that Mod Wheel expression.*

#### **Tip #7 – Blend it with your other flute & piccolo libraries**

Mixing in the more natural, flowing sound of Spiritoso with the more expansive rich sound of the best string libraries will result in a sound better than either alone.

#### **Tip #8 – If you drop under 110bpm, use Double Tempo**

Below 110bpm the Kontakt Time Machine 2 algorithm will start to sound grainy. A useful remedy is to select 'Double Tempo' in the Tempo Sync tab. The flip side is that above around 150bpm, "Half Tempo" starts to sound more natural than the Host Tempo.

#### **Tip #9 – Ending a loop well**

Being made from looped patterns, ending a series of loops can be a problem, much like the problem of getting out of any good groove. One option could be to use the Velocity Staccato instrument, which would allow you to end on a short staccato chord. Alternatively, you can fade out or distract the listener with a sudden change of arrangement at the end of the loop.

#### **Tip #10 – Velocity controls Attack Time**

Play softly for a slow, soft attack, and hard for a fast attack time.

## **FINAL WORDS**

With its live, fluid phrases and incredible level of control, Perpetuo: Live Flute Phrases is a unique product that will add a new level of realism to your orchestral sequences.

Enjoy!

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