



# FORM III

 NATIVE INSTRUMENTS

THE FUTURE OF SOUND

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Special thanks to the Beta Test Team, who were invaluable not just in tracking down bugs, but in making this a better product.

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# 1 Welcome to FORM

Thank you very much for downloading FORM from Native Instruments. This new and exciting synthesizer can be used either with the free REAKTOR 6 PLAYER, or the full version of REAKTOR 6. On behalf of the entire NATIVE INSTRUMENTS team, we hope this product will inspire you.



It is recommended to download and install the latest version of REAKTOR 6 or REAKTOR 6 PLAYER before using FORM. You can update REAKTOR 6 with Native Access. The latest version of the free REAKTOR 6 PLAYER is available here:  
<https://www.native-instruments.com/de/products/komplete/synths/reaktor-6-player/>

## 1.1 Introduction

FORM is a complex yet easy-to-use REAKTOR 6 instrument that lets you take your own samples and twist and turn them into completely different sounds. Use the bespoke Motion Curves or create your own ones in order to get interesting textures and new futuristic sounds. FORM is a powerful instrument with an intuitive interface that lets you get started quickly by simply dragging and dropping a sample into the interface. At the same time FORM offers a multitude of ways to influence the direction of the sound and gives you access to parameters for modulation and to effects so that you may change everything from timbre to length until your samples are far beyond recognition.

When you drag a sample into FORM, the instrument analyses it. After determining the pitches present in the sample, FORM constructs a pitch curve that is superimposed on the sample (see [↑3, The SAMPLE Page](#)). If two or more pitches are present in a section of the sample, FORM chooses the most dominant pitch as the base frequency for that section. Based on this pitch curve, FORM resynthesizes the sample by means of a Pitch Synchronous Overlap and Add (PSOLA) algorithm. This algorithm is able to read the pitch curve, and use it to reproduce the sample at any speed as well as change the sample to any pitch. FORM then lets you play back the sample in different keys and by using the advanced PERFORM section (see [↑6.3, PERFORM](#)), which lets you save up to twelve separate variations of your Sound and play these with your MIDI keyboard.

## 1.2 Document Conventions

This document uses particular formatting to point out special facts and to warn you of potential issues. The icons introducing the following notes let you see what kind of information can be expected:



The speech bubble icon indicates a useful tip that may often help you to solve a task more efficiently.



The exclamation mark icon highlights important information that is essential for the given context.



The red cross icon warns you of serious issues and potential risks that require your full attention.

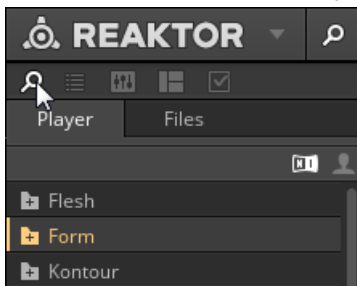
Furthermore, the following formatting is used:

- Text appearing in (drop-down) menus (such as *Open...*, *Save as...* etc.) in the software and paths to locations on your hard disk or other storage devices is printed in *italics*.
  - Text appearing elsewhere (labels of buttons, controls, text next to checkboxes etc.) in the software is printed in **blue**. Whenever you see this formatting applied, you will find the same text appearing somewhere on the screen.
  - Important names and concepts are printed in **bold**.
  - References to keys on your computer's keyboard you'll find put in square brackets (e.g., "Press [Shift] + [Enter]").
- ▶ Single instructions are introduced by this play button type arrow.
- Results of actions are introduced by this smaller arrow.

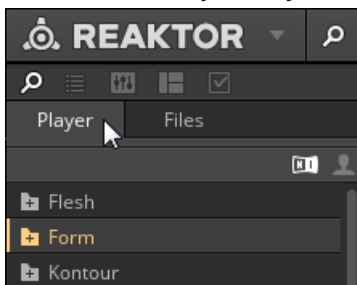
## 1.3 How to Open FORM

This is how to open FORM in REAKTOR or REAKTOR PLAYER:

1. Start REAKTOR or REAKTOR PLAYER.
2. Click the Browser icon to open the Browser

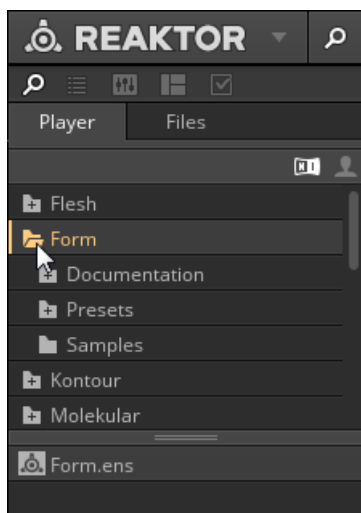


3. Click the [Player](#) tab to show the REAKTOR PLAYER files (or you can open the browser with the [F1] key from your keyboard).

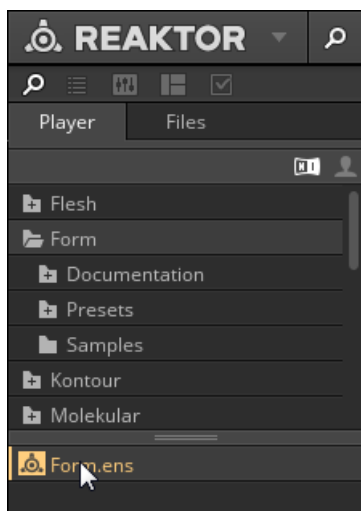




- Click the **FORM** folder. The content of the folder will be displayed in the lower section of the browser.



- Double-click the **FORM.ens** file, or drag it into the main screen.



## 6. FORM will be loaded in REAKTOR/REAKTOR PLAYER:



## 1.4 Getting Started

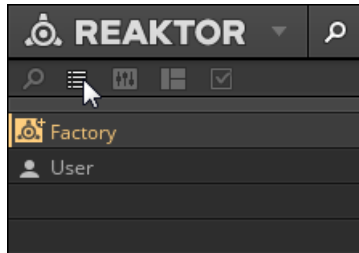
To get you started right away, FORM comes equipped with a library of Factory Presets that you can quickly load from the REAKTOR browser. Doing so will load a sample and set all FORM's parameters to preset values. You can play these as they are, or use them to as a starting point for your own sound manipulations.



Please note that the workflow of browsing and saving user presets has changed in REAKTOR 6.0.3. To save a preset, you do not need to enter REAKTOR's edit mode anymore. By default presets are saved in the global preset saving folders: Windows: `C:\Users\<User>\Documents\Native Instruments\User Content\Form`  
 OS X: `Macintosh HD:\Users\<User>\Documents\Native Instruments\User Content\Form`  
 You can browse for presets stored in the location from REAKTOR's Browser (in Play mode) as well as from the MASCHINE and KOMplete KONTROL Browsers.

## 1.4.1 Loading a Preset

1. Open the Presets tab.

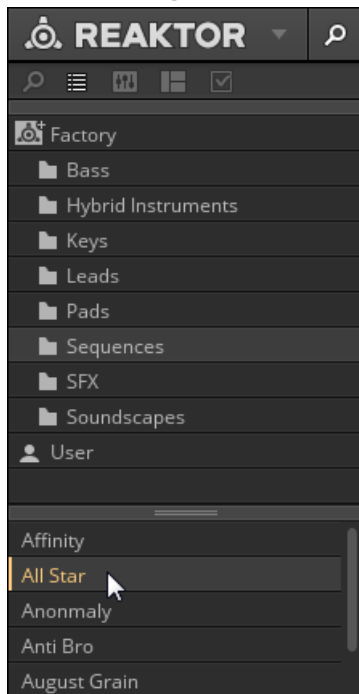


2. Double-click on [Factory](#) to display the Preset folders.

⇒ The list with the [Factory](#) Preset folders is displayed.



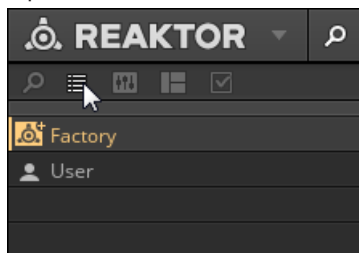
3. Browse through the folders and select a preset from the list below.



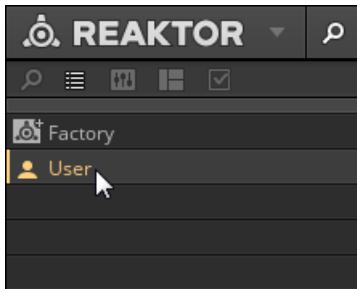
→ The preset is loaded and ready to be played.

## 1.4.2 Saving a Preset

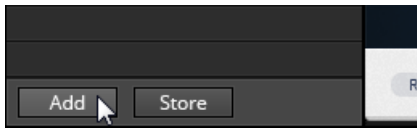
1. Open the Presets tab.



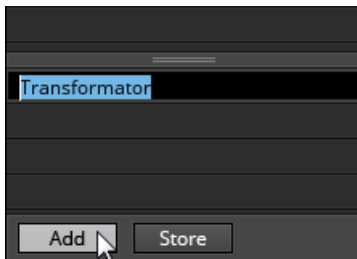
2. Double-click on **User** entry.



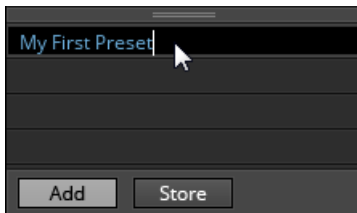
3. Click on the **Add** button at the bottom of the Browser.



- ⇒ An entry appears in the list. By default it contains the highlighted name of the current preset.

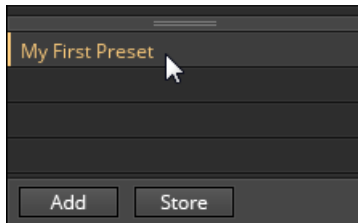


4. Enter the desired name for the preset.



5. Confirm with the Return key on your computer keyboard.

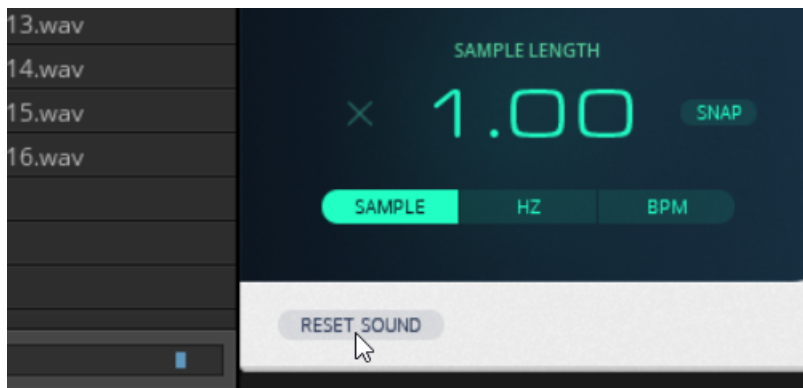
→ The preset is saved.



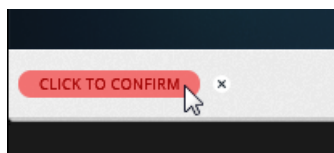
### 1.4.3 Resetting Sounds

In order to really get to know FORM and its capabilities, it can be helpful to start with a clean slate and load your own sample. To set all of FORM's controls to default and load a sample, start by clearing all settings and opening the [SAMPLE SELECT](#) page.

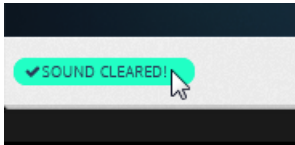
1. To set all controls to default and reset the Sound, including all Performance slots in the [PERFORM](#) section, click the [RESET SOUND](#) button in the bottom left corner of FORM's interface.



⇒ The button will turn into red and read [CLICK TO CONFIRM](#).

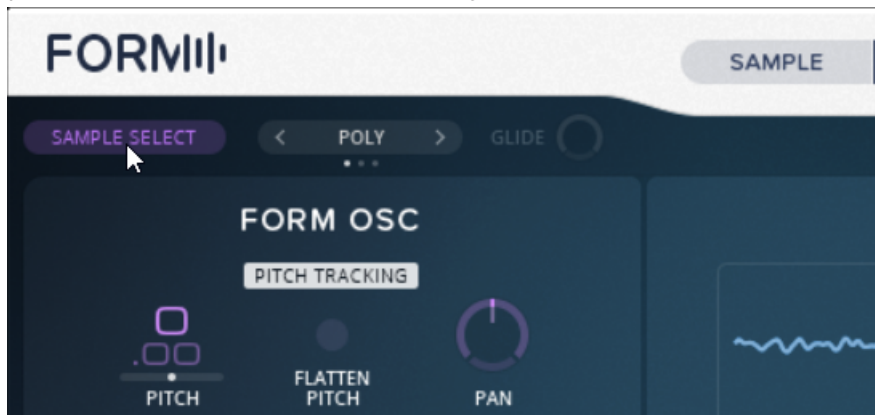


- To confirm your selection and effectively clear the Sound, click the button. Otherwise click the small cross icon to cancel.
- The Sound is reset and the button turns into green reading **SOUND CLEARED**.

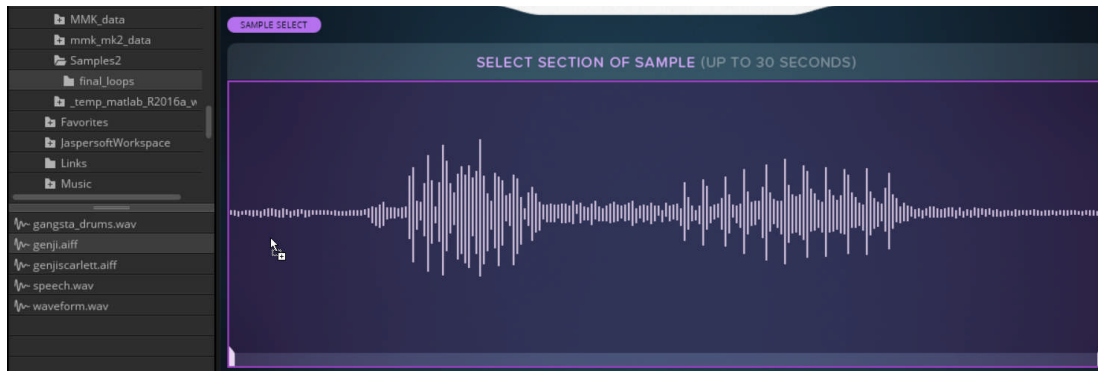


#### 1.4.4 Loading Your own Sample

- To open the **SAMPLE SELECT** page, click the **SAMPLE SELECT** button, located in the upper left corner of the interface, directly below the **FORM** icon.



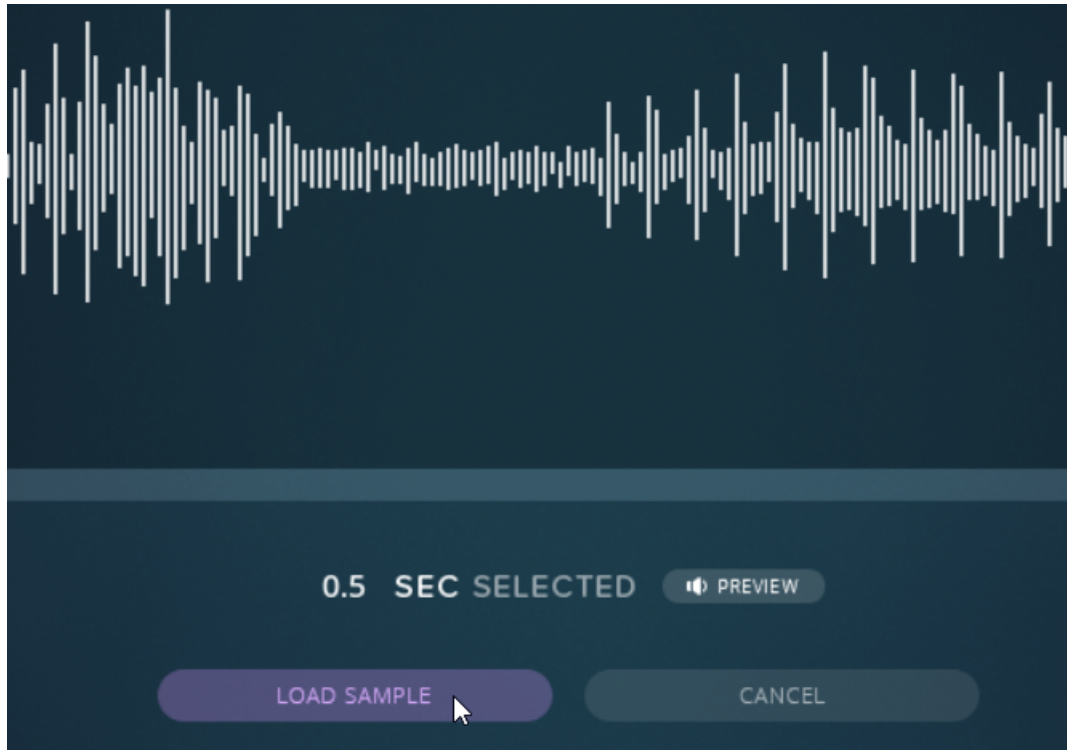
- To load a sample, click and drag it from your user library in the REAKTOR browser to FORM's waveform display, located at the center of the [SAMPLE SELECT](#) page.



The waveform of the sample appears in the waveform display.



- To keep this sample and analyze it for the FORM oscillator, click the **LOAD SAMPLE** button below the waveform display.



If the length of your chosen samples exceeds 30 seconds, a timeframe of 30 seconds will be selected from the sample. You can select the timeframe yourself by clicking and dragging the white handles in each lower corner of timeframe within the waveform display.



For longer samples, a timeframe is selected for analysis

Once you have loaded a sample into FORM, click the [LOAD SAMPLE](#) button, and the instrument will analyze the audio content. Now you can apply FORM's Motion Curves to the audio and create complex and interesting new sounds. You can control and edit these Motion Curves in a multitude of ways and even create your own. Furthermore, you can use the [PERFORM](#) section to save different Curves or even alternative variations of the Sound altogether and play them back using a control octave on your MIDI keyboard.

- ▶ To learn more about the possibilities of FORM, continue reading this document.

## 2 Overview of the FORM Interface

FORM is an interesting instrument based on combining your own samples with FORM's creative Motion Curves. Start by loading a sample into the waveform display of the **SAMPLE** page or on the **SAMPLE SELECT** page and selecting one of the provided Motion Curves in the **MO-TION** section at the center bottom of the interface. Once you have done so, you are already on the way to experiencing the easy-to-use and yet extremely versatile power of FORM.



Overview of FORM's interface.

(1) **The Header:** This section lets you select the page to display in the Main section and holds controls for voicing and to influence the **PERFORM** section. For detailed information, see [12.1, The Header](#).

(2) **The Main section:** The controls displayed here change depending on your selection in the Header. The Main section displays the controls that are available for the [SAMPLE](#), [SOUND](#), and [EFFECTS](#) pages as well as the Motion Curve [CURVE PRESETS](#) and [CURVE EDITOR](#). For detailed information, see [↑2.2, The Main Section](#).

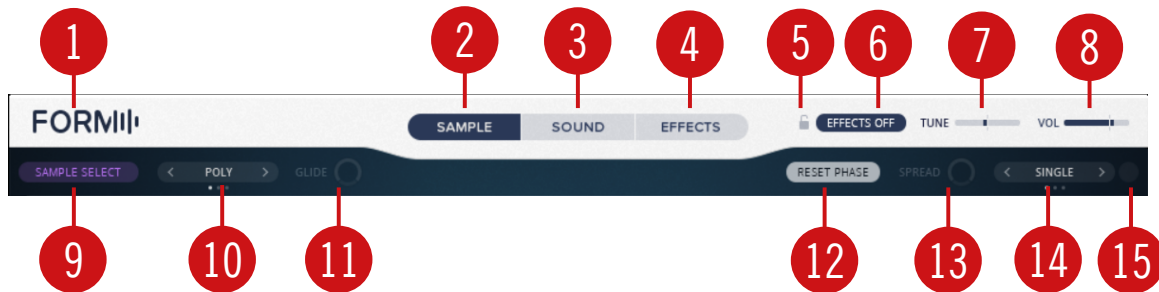
(3) **The Footer:** This area displays the [SPEED](#), [MOTION](#), and [PERFORM](#) sections as well as the Macro controls and is visible at all times. For detailed information, see section [↑2.3, The Footer](#).



Alternatively, you can use FORM's Compact view, which features a streamlined interface and is well suited for browsing presets. For more information, see [↑2.4, The Compact View](#).

## 2.1 The Header

The Header is located at the top of the interface. It is visible at all times and contains a selector that lets you switch between pages to display at the Main section. Furthermore, the Header holds controls for voicing and parameters relating to the [PERFORM](#) section.



The Header

- (1) **FORM icon:** Opens the product credits in the Main section.
- (2) **SAMPLE:** Click this to display and access the waveform of the loaded sample.
- (3) **SOUND:** Click this to access parameters for controlling FORM's oscillators and to control the modulators and filters.

- (4) **EFFECTS**: Click this to access FORM's effects section. It contains both traditional effects like reverb and delay and the new frequency shaping tool.
- (5) **EFFECTS OFF**: Click to bypass all effect units of the **EFFECTS** page.
- (6) **Key lock button**: Switch this on to lock the **EFFECTS OFF** button to its current state (on or off) while browsing through FORM's Presets. This means that you can audition FORM's Presets either untouched or without effect units.
- (7) **TUNE**: Drag the slider right or left to tune the master output up or down, respectively.
- (8) **VOL**: The master volume slider lets you click and drag to set the output level.
- (9) **SAMPLE SELECT**: Click this button to open the **SAMPLE SELECT** page, where you can load and preview your samples.
- (10) **Voice selector**: Select one of three voicing modes:
- *POLY*: Lets you play back your samples using two or more notes simultaneously.
  - *MONO RETRIG*: Monophonic Retrigger mode. Only one note at a time will be played. Envelopes and/or LFOs will be retriggered by every new MIDI Note On event.
  - *MONO LEG*: Monophonic Legato mode. Only one note at a time will be played. Envelopes and/or LFOs will be retriggered only when a MIDI Note Off event is received before the next MIDI Note On event (non-legato).
- (11) **GLIDE**: Sets the amount of time it takes to transition from one note pitch to another.
- (12) **RESET PHASE**: Activate to reset the phase of the oscillators when a key is pressed.
- (13) **SPREAD**: Turn to set the pitch offset for each voice when in **UNISON** and **MULTI MODE**.
- (14) **Perform Voice selector**: This lets you define how the **PERFORM** section will behave. Select one of three different settings:
- **SINGLE**: This mode plays back one active Performance slot.
  - **UNISON**: This mode plays back up to four versions of the active Performance slot, depending on the setting of the Voice Amount button to the right of the Perform Voice selector.
  - **MULTI MODE**: This mode plays back up to four different saved Performance slots simultaneously. The Performance slots being played back are visually reflected in the **PERFORM** section at the bottom right of the FORM interface.

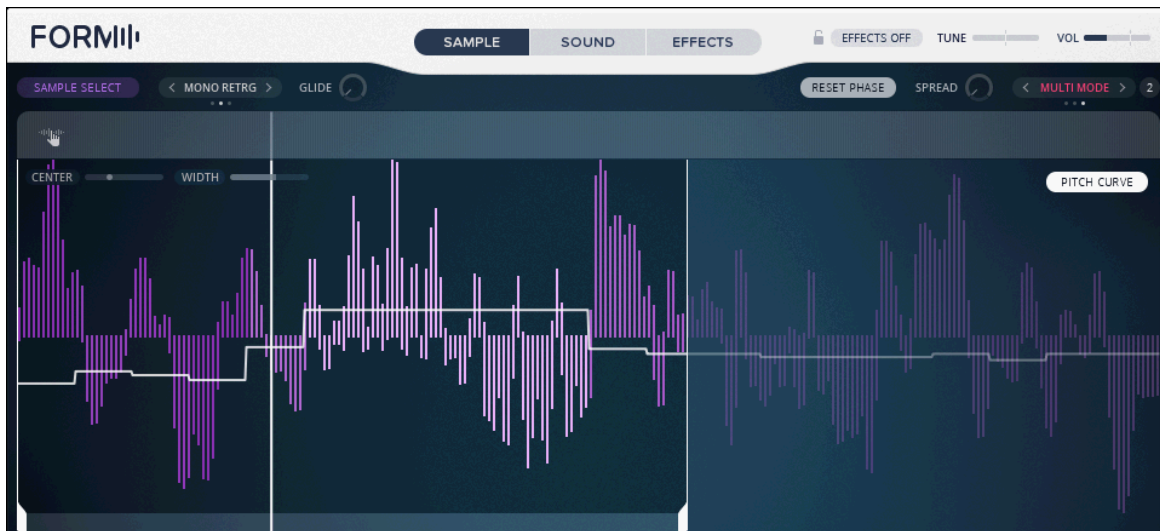
(15) **Voice Amount:** Click this button to set a number (2-4) of voices for the Performance slots to play back simultaneously in **UNISON** and **MULTI MODE**. When doing so, you are using multiple voices to play one note, meaning that you are reducing the total amount of voices you can play back simultaneously. Setting Voice Amount to **2** equals four available notes, whereas setting it to **4** gives you two simultaneously playable notes.

## 2.2 The Main Section

The Main section displays parameters belonging either to the **SAMPLE**, **SOUND**, or **EFFECTS** page, depending on your selection in the Header. This is also the section where you can browse and edit Motion Curves in detail using the **CURVE EDITOR**.

The Main section gives you controls to shape the sound of your sample into something completely different. Using the selector in the Header you can display and control parameters either for the **SAMPLE**, **SOUND**, or **EFFECTS** page.

### The SAMPLE Page



The SAMPLE page

The [SAMPLE](#) page lets you select and load your samples via drag-and-drop. For more detailed information, see section [↑3, The SAMPLE Page](#).

## The SOUND Page



The SOUND page

The [SOUND](#) page lets you shape, edit and modulate the sound of your sample. For more detailed information, see section [↑4, The SOUND Page](#).

## The EFFECTS Page



The EFFECTS page with effect units switched on

The [EFFECTS](#) page lets you further control your output by giving you access to a set of classic and creative effects. For more detailed information, see section [↑5, The EFFECTS Page](#).



## The CURVE EDITOR



The CURVE EDITOR displayed in the Main section.

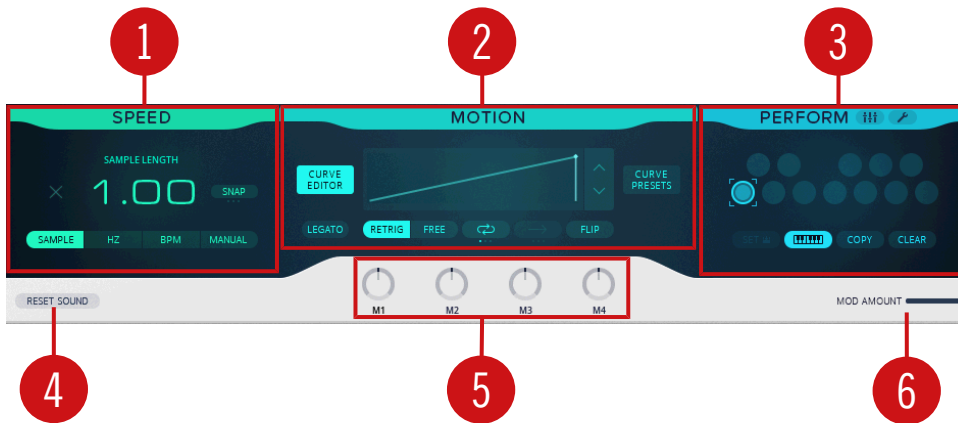
The CURVE EDITOR is called up by clicking the CURVE EDITOR button in the MOTION section in the Footer. It lets you create your own Motion Curves and edit pre-existing ones in full detail. For more detailed information, see section [↑6.2.2, The CURVE EDITOR](#).



The CURVE EDITOR button in the MOTION section.

## 2.3 The Footer

This area contains the **SPEED**, **MOTION**, and **PERFORM** sections as well as the Macro controls. The Footer area is visible at all times, regardless of what parameters you are monitoring in the Main section. The controls are split into three sections, each controlling a different aspect of the sound.



The Footer

- (1) **SPEED**: This section contains controls for playback speed.
- (2) **MOTION**: This section contains controls for the Motion Curves.
- (3) **PERFORM**: This section contains controls for playing and saving variations of the Sound in twelve Performance slots.
- (4) **RESET SOUND**: Click to reset all of FORM's parameters to default, effectively clearing the Sound.
- (5) **Macro controls**: The Macro controls can be assigned as modulation sources for any of FORM's parameter available for modulation. You can set polarity and select one the available labels to organize your macros according to their modulation destinations.
- (6) **MOD AMOUNT**: This slider sets the total amount of modulation being sent to all destinations simultaneously.

## The SPEED Section

The **SPEED** section lets you decide how fast the Motion Curve is played back and in extension the loaded sample. You can choose between syncing it to the tempo of your host or repeat the playback at a given frequency, or at a set speed in relation to the length of your sample. You can also control the playback position manually, with the modulation system, or via host automation. For more detailed information about the **SPEED** section, see section [↑6.1, SPEED](#).



Modulating the speed by e.g. an LFO can add interesting and unexpected textures and variations to your sound.

## The MOTION Section

The **MOTION** section is where you select your Motion Curve and control its settings, e.g. whether the playhead should move freely or retrigger. This is also where you call up the **CURVE EDITOR** to create and edit your own Motion Curves. To get started with Motion Curves, you can also use the **CURVE PRESETS** to load one of the many existing curves. For more detailed information about the **MOTION** section, see section [↑6.2, MOTION](#).

## The PERFORM Section

The **PERFORM** section in the bottom right corner of the interface lets you save variations of the Sound to Performance slots and play these back using a control octave on your MIDI keyboard. This effectively means that you can have up to twelve variations of a Sound and play these back, either one at a time or even simultaneously, depending on the settings for **UNISON** and **MULTI MODE** located in the Header to the far right. For more detailed information about the **PERFORM** section, see section [↑6.3, PERFORM](#).

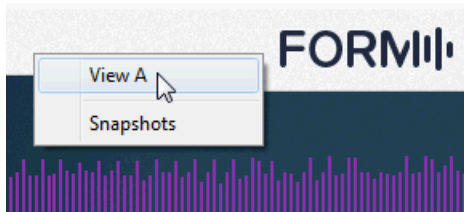
## The Macro Controls

The Macro controls are located at the very bottom of the interface. They can be used as a modulation source to control almost any parameter in FORM's interface. You can assign each Macro control to as many parameters as you want. For more detailed information about the Macro controls, see section [↑6.4, Macro Controls](#).

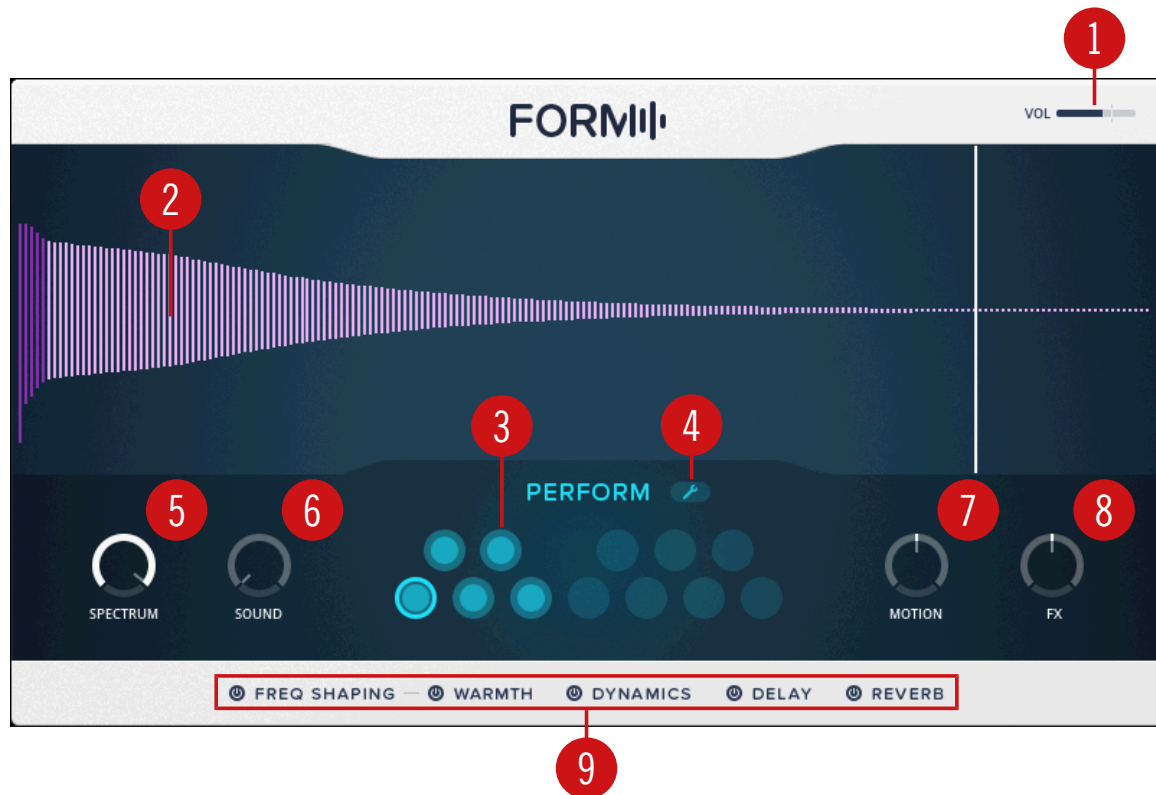
## 2.4 The Compact View

The Compact view is ideal for browsing and playing presets. Its focused interface lets you change key parameters with the four Macro controls. Each preset comes with its own set of Macro control assignments, specifically chosen to bring out key aspects of the sound.

- ▶ To switch to Compact view, right-click in FORM's Header and select *View B* from the context menu.



- FORM is now displayed in Compact view.



Compact view

- (1) **VOL**: The master volume slider lets you click and drag to set the output level.
- (2) **Waveform display**: Displays the waveform of your loaded sample.
- (3) **Performance slots**: Click any slot to switch to it, resetting all parameters to their saved state. For more information, see [↑6.3, PERFORM](#).
- (4) **Perform settings button**: Click to show the Perform settings, where you can set up the control octave for switching between Performance slots from your MIDI keyboard. For more information, see [↑6.3, PERFORM](#).
- (5) **Macro 1**: This knob controls all parameters assigned to the first Macro control. For more information, see [↑6.4, Macro Controls](#).

(6) **Macro 2:** This knob controls all parameters assigned to the second Macro control. For more information, see [↑6.4, Macro Controls](#).

(7) **Macro 3:** This knob controls all parameters assigned to the third Macro control. For more information, see [↑6.4, Macro Controls](#).

(8) **Macro 4:** This knob controls all parameters assigned to the fourth Macro control. For more information, see [↑6.4, Macro Controls](#).

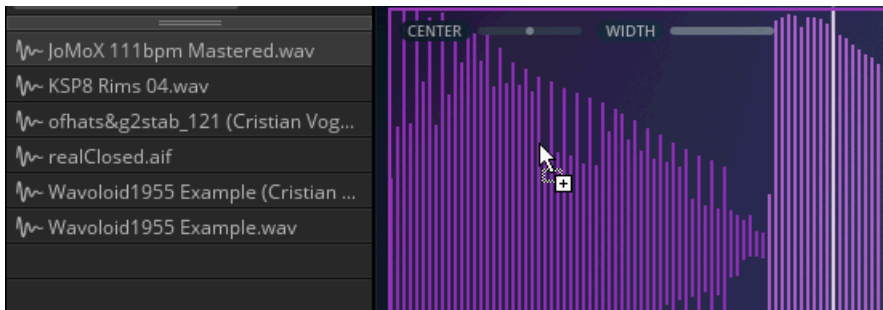
(9) **Effects switches:** Click to enable or disable the individual sections on the [EFFECTS](#) page. [WARMTH](#) is only available when [FREQ SHAPING](#) is enabled. For more information, see [↑5, The EFFECTS Page](#).

## 3 The SAMPLE Page

The [SAMPLE](#) page displays the waveform of your loaded sample. Just as with the [SAMPLE SELECT](#) page, you can drag and drop samples directly into the Waveform display on the [SAMPLE](#) page. Aside from loading samples, the [SAMPLE](#) page allows you to view the pitch curve, control the playback of the sample, and adjust the selection that is used for playback.

### Loading a Sample

1. To load a sample into the [SAMPLE](#) page, click and drag a sample from the REAKTOR browser into FORM's Waveform display.

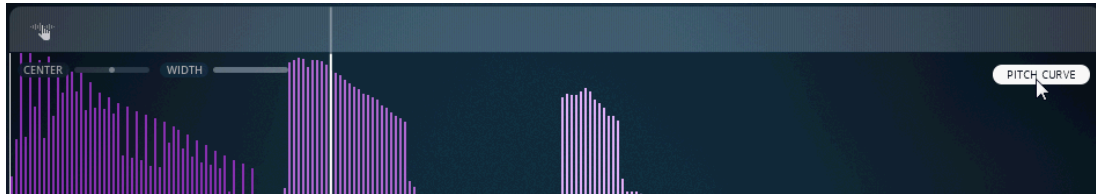


- ⇒ The [SAMPLE SELECT](#) page opens automatically.
2. Click the [LOAD SAMPLE](#) button in the [SAMPLE SELECT](#) page to analyze the sample's audio content in order to use it for synthesis.

### Pitch Curve

The pitch curve represents all pitches that FORM has detected in your sample. You can display the pitch curve on the [SAMPLE](#) page. It is not available on the [SAMPLE SELECT](#) page. Displaying the pitch curve can be helpful when deciding on a time frame for your sample, as you may end up with different-sounding timbres depending on the pitch of the loaded sample. Furthermore, it can be used as a modulation source for parameters.

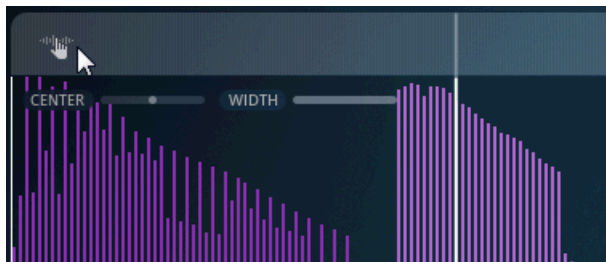
- ▶ To display the **PITCH CURVE**, click the **PITCH CURVE** button to the far right.



## Sample Playback Controls

Whenever FORM is playing back your sample, the **SAMPLE** page indicates where the play head is located at any given point. This can be especially helpful if you are using a Motion Curve that loops, or if you are modulating the playback speed.

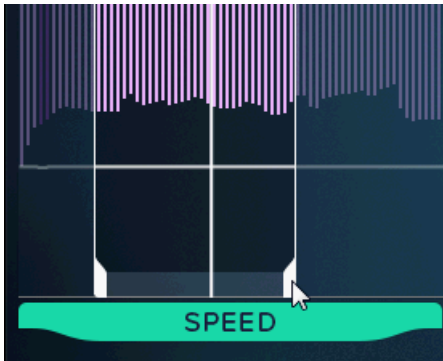
- ▶ To manually set the location of the play head along the time axis, click and drag the touch strip at the top of the Waveform display.



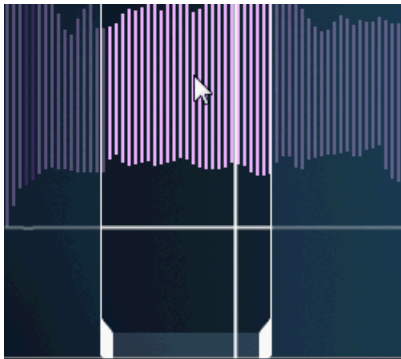
You can also change the position and the size of the sample selection, which lets you focus on a specific section of the sample, restricting the playback accordingly.



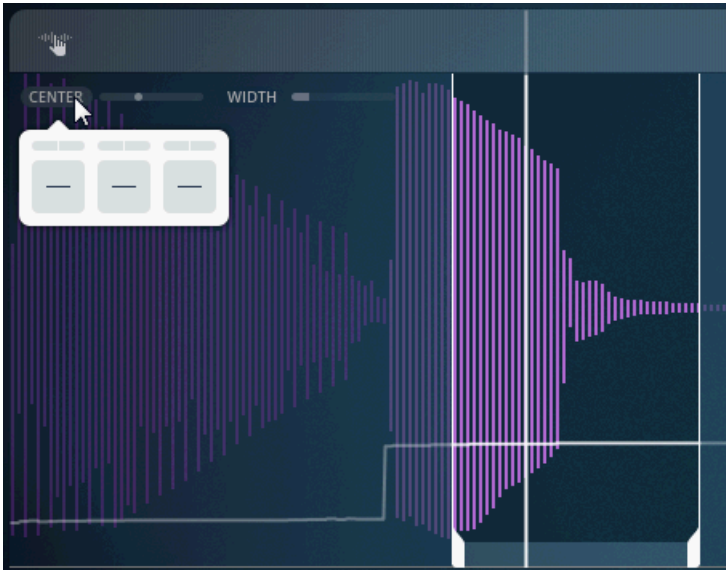
- ▶ To change the start and the end point of the selection, click and drag the handles at the bottom.



- ▶ To change the position and the width of the sample at the same time, click into the selection and drag the mouse up and down to adjust the size of the selection, as well as left and right to change its position in the sample.



Alternatively, you can use the dedicated **CENTER** and **WIDTH** controls in the top left corner of the waveform display to change the position and the size of the selection. They can also be modulated, allowing you to change the selected portion of the sample dynamically.



## Zoom

In order to get a more detailed view of a specific region of the sample, you can zoom in on the waveform.

- ▶ To zoom in on your waveform, right-click the waveform and drag the mouse cursor downward. To zoom out, right-click-and-drag it upward instead.
- ▶ To move the visual part of the waveform sideways while zoomed in, right-click the waveform and drag the mouse cursor left or right.

## 4 The SOUND Page

Use the controls on the **SOUND** page to precisely shape the sound you are looking for, and to modulate parameters and thus make the sound evolve over time. To open the **SOUND** page, click **SOUND** in the Page selector in the Header.

The **SOUND** page is divided into five separate sections, each with its own controls. It is worth noting, however, that certain controls, e.g., the **DEFORM** knob in the **OSC FX** section greatly influence the controls of the **FORM OSC** section. Likewise, the controls in the **MODULATION** section can be assigned to modulate just about any parameter of the FORM instrument. To learn more about the sections of the **SOUND** page, keep reading below.



The SOUND page

(1) **FORM OSC**: This section gives you control over frequency-related parameters, such as **PITCH** and **FORMANT**.

(2) **ADDITIVE OSC**: This section lets you add another oscillator to mix with the sample you loaded in order to create a more powerful sounding output. The **ADDITIVE OSC** is also used as a modulator for FM modulation of the **OSC FX** unit.

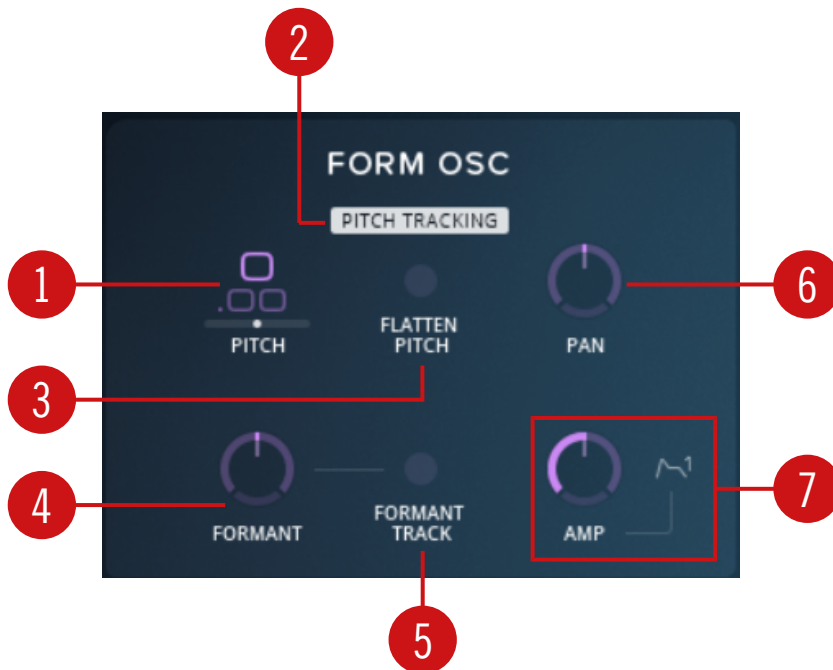
(3) **OSC FX**: This section holds parameters controlling the output sound. Controls for FM and stereo modulation are available, and you can also choose the degree to which you want to deform the sound entirely.

(4) **MODULATION**: This section contains an advanced collection of modulators, ranging from envelopes and LFOs to creative side-chain modulation, in which two modulators e.g. multiply each other, with the resulting signal being used to modulate any other parameter of FORM.

(5) **FILTER**: This section contains a polyphonic multimode filter with corresponding controls.

## 4.1 The FORM OSC Section

The **FORM OSC** section is where you can control the output of FORM's audio engine. FORM analyzes the audio content of your sample and then uses it to synthesize new sounds. In the **FORM OSC** section you can set parameters relating to FORM's audio engine, such as pitch tracking and formant fine-tuning.



#### FORM OSC

- (1) **PITCH**: Click and drag the numbers up or down to transpose the oscillator pitch. The upper digit displays the amount of semitones by which you are transposing the pitch. The lower digits are cents ranging from  $-50$  to  $+50$ . Setting the cent value to  $-50$  will effectively jump to  $+50$  of a smaller semitone value.
- (2) **PITCH TRACKING**: Is automatically switched on unless you activate the **DEFORM** function in the **OSC FX** section, which effectively overrides the **PITCH TRACKING**.
- (3) **FLATTEN PITCH**: Flattens the pitch curve to the key you press on your MIDI keyboard. Note however, that the sample pitch curve in its original form is still available as a modulation source.
- (4) **PAN**: Pans the audio from to the left or right.
- (5) **FORMANT**: Turn this either direction to shift the formants of the waveform.

(6) **FORMANT TRACK**: Switch this on to adjust the formant of the waveform automatically in relation to the pitch of each note.

(7) **AMP**: Sets the amplification level for the **FORM OSC**. The amplifier is hardwired to the envelope **ENV1** in the **MODULATION** section of the **SOUND** page.

## 4.2 ADDITIVE OSC

As some samples lack audio content in certain areas of the frequency spectrum, FORM comes equipped with an extra oscillator that can be used to fill out your sounds. Use it to achieve richer sounds in the frequencies corresponding to the level set by the **OCTAVE** control.



### ADDITIVE OSC

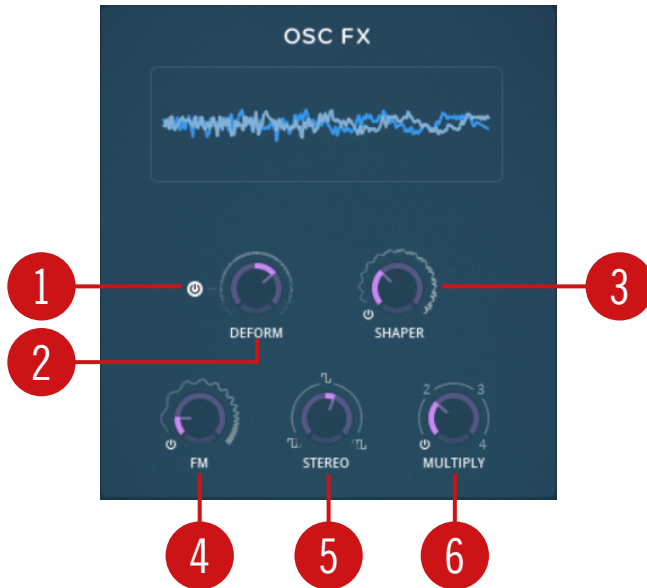
(1) **OCTAVE**: Click and drag to add a set of predefined harmonic pitch offsets in relation to the **FORM OSC**. This can be useful for adding bass as well as for driving frequency modulation, which is set by the **FM** knob in the **OSC FX** section (see section [↑4.3, OSC FX](#)).

(2) **WAVEFORM**: Turn this control to set the waveform of the additive oscillator. For a pure sine waveform, turn the knob all the way to the left end stop. For a soft saw-type waveform, set the knob to the center position. For a soft square-type waveform, turn the knob all the way to the right end stop.

(3) **VOLUME**: Sets the volume of the additive oscillator.

## 4.3 OSC FX

The **OSC FX** section contains controls for shaping FORM's oscillator, such as frequency modulation and a wide stereo effect. The display at the center of the section visualizes the oscillations playing in real time.



OSC FX

(1) **DEFORM** on/off: This switch activates or deactivates the **DEFORM** function, which effectively overrides the **PITCH TRACKING** function of the **FORM OSC** section. Doing so flattens the pitch, regardless of the setting in the **FORM OSC** section, and lets you use the **DEFORM** knob to destruct the sound.

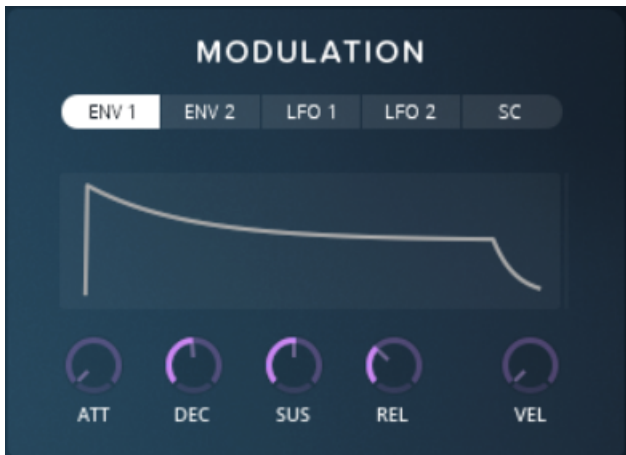
(2) **DEFORM** knob: Turn this knob in either direction to set a pitch and manually introduce a type of sonic destruction effect that effectively deforms your sound.

(3) **SHAPER**: Turn this knob clockwise to shape the waveform segments in FORM's oscillator.

- (4) **FM**: Turn this knob clockwise to set the level of frequency modulation by which the **ADDITIVE OSC** FM modulates the **FORM OSC**.
- (5) **STEREO**: This bipolar knob jitters the play head position between the left and right channels.
- (6) **MULTIPLY**: Turn this knob clockwise to increasingly compress the waveform and introduce more harmonic content.

## 4.4 MODULATION

The advanced **MODULATION** section lets you assign and define modulation and even cross-modulation of almost any parameter in FORM's interface, particularly on the **SOUND** and **EFFECTS** pages, but also in the **SPEED** section. Modulation is defined as an offset to the set value of each destination parameter, and is indicated by a white pin just outside the interface element. The indicator moves to reflect the speed and set depth of the modulation source.



MODULATION



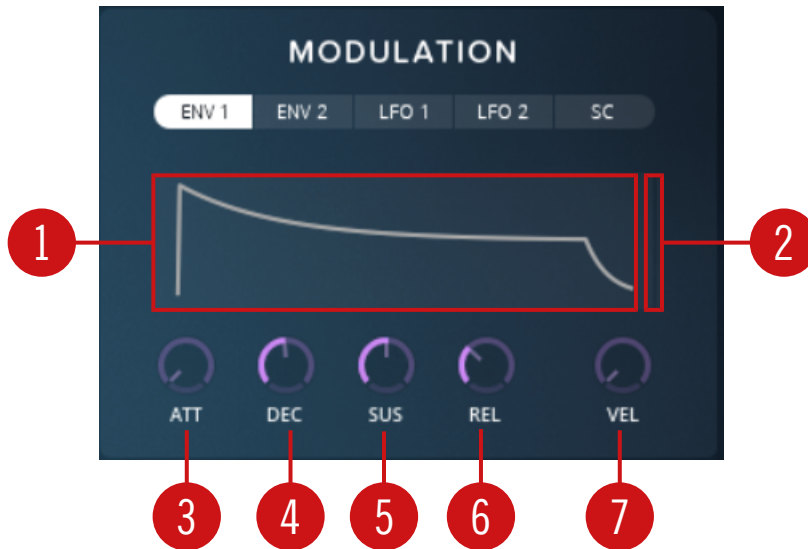
## Modulators

There are five different modulators available in the [MODULATION](#) section. It is worth noting, however, that many more modulation sources can be used, such as FORM's Motion Curves, the macro controls in the Footer, and the pitch-bend wheel on your MIDI keyboard. Each modulator can be assigned to as many destinations as you want.

The modulator selector lets you select which modulator to display, but all modulators are active simultaneously. Available modulators are [ENV1](#), [ENV2](#), [LFO1](#), [LFO2](#), and [SC](#). Both envelopes and both LFOs are identical in terms of provided controls, and the side-chain modulator allows you to combine the signals of two of the other modulators and use the resulting output signal as source for modulation assignment.

### 4.4.1 ENV

[ENV1](#) and [ENV2](#) are identical in terms of available parameters. They come equipped with knobs for attack, decay, sustain, and decay, as well as a velocity control. Note however, that [ENV1](#) is automatically assigned to the [AMP](#) knob in the [FORM OSC](#) section of the [SOUND](#) page. This means that [ENV1](#) always sets the amplitude envelope of the oscillator and thus can have a great influence on the output sound.

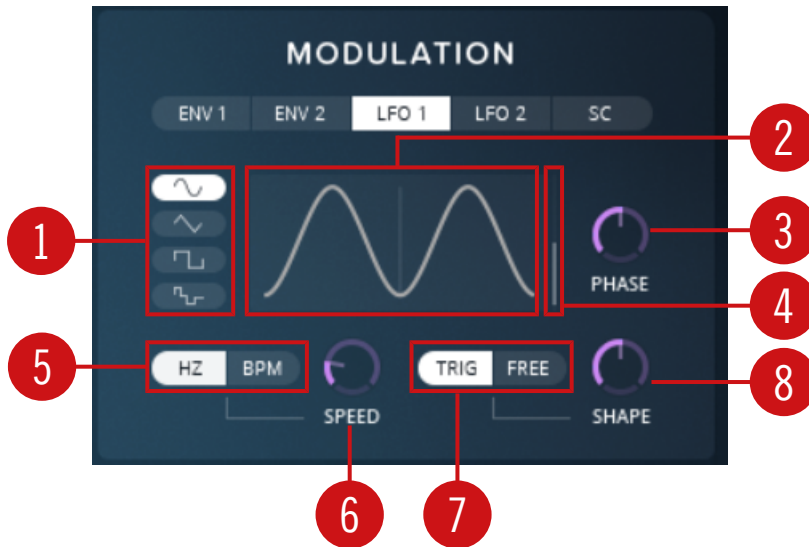


#### ENV

- (1) **Envelope display:** The shape of the envelope is displayed here. If envelope parameters are being controlled by other modulators, the modulation will be reflected as an offset to the envelope in real time.
- (2) **Envelope indicator:** This indicator reflects the velocity at which the envelope moves through each of its phases.
- (3) **ATT:** Turn this to set the attack time of the envelope.
- (4) **DEC:** Turn this to set the decay time of the envelope.
- (5) **SUS:** Turn this to set the sustain level of the envelope.
- (6) **REL:** Turn this to set the release time of the envelope.
- (7) **VEL:** Turn this to set the velocity sensitivity with which the entire envelope moves through all its phases.

## 4.4.2 LFO

LFO1 and LFO2 are both identical in terms of available parameters. They each come equipped with four different waveforms that can be further defined using the [SHAPE](#) control, as well as parameters for [SPEED](#) and [PHASE](#).



LFO

(1) **Waveform selector:** Select one of the four different waveforms. Available for selection are sine, tri, square, and random. Each of these can be defined in further detail using the [SHAPE](#) control. The selected waveform, in its form set by the [SHAPE](#) control, is reflected by the waveform display.

(2) **Waveform display:** The shape of the LFO signal is reflected visually here.

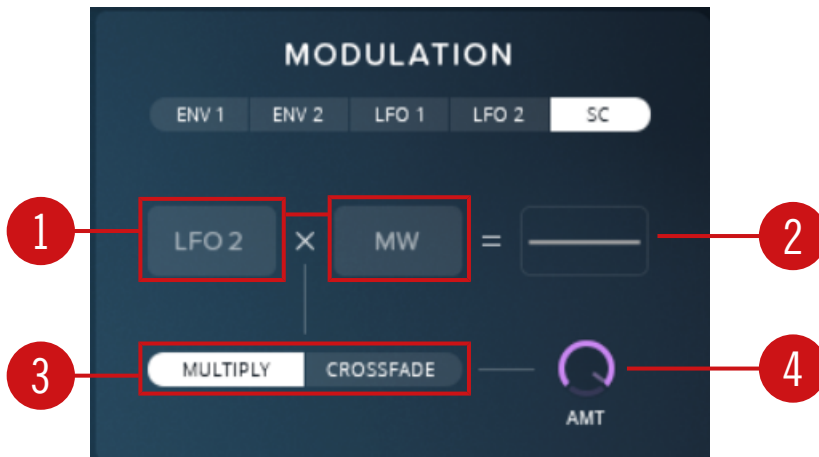
(3) **LFO indicator:** This indicator reflects the speed at which the LFO moves through its oscillations. Every time the signal passes the zero crossing, at the velocity set by the [SPEED](#) control, the polarity switches. If the waveform selector is set to random, the LFO indicator will move randomly.

(4) **PHASE:** Turn this to shift the starting position of the phase in the LFO signal along the time axis.

- (5) **HZIBPM**: Select either Hz or note values as scale for the **SPEED** control.
- (6) **SPEED**: Turn this to set the speed at which the LFO operates. Depending on your selection, the **SPEED** can be set either in Hz or as a note value (**BPM**), ranging from either 0 to 30 Hz or 32 *Bar* to 1/96 note, respectively.
- (7) **TRIGIFREE**: Select either triggering or free mode for the **SHAPE** control. When set to **FREE**, LFO phases can differ from one polyphonic voice to another.
- (8) **SHAPE**: Turn this to further define the shape of the LFO waveform.
- For **sine**, **SHAPE** moves from spike wave at fully left, via sine at center, to pulse or square at fully right.
  - For **tri**, **SHAPE** moves from falling saw at fully left, via triangle at center, to rising saw at fully right.
  - For **square**, **SHAPE** acts as pulse-width control.
  - For **random**, **SHAPE** moves from time-wise random signal at fully left, via stepped random signal at center, to smooth-edged random signal at fully right.

### 4.4.3 SC

The side-chain modulator uses two modulators as sources and uses their corresponding output signals as input signals. The input signals are then combined, either by multiplication or by crossfading. The resulting signal can then be used as output modulation signal for modulation assignment to other parameters.



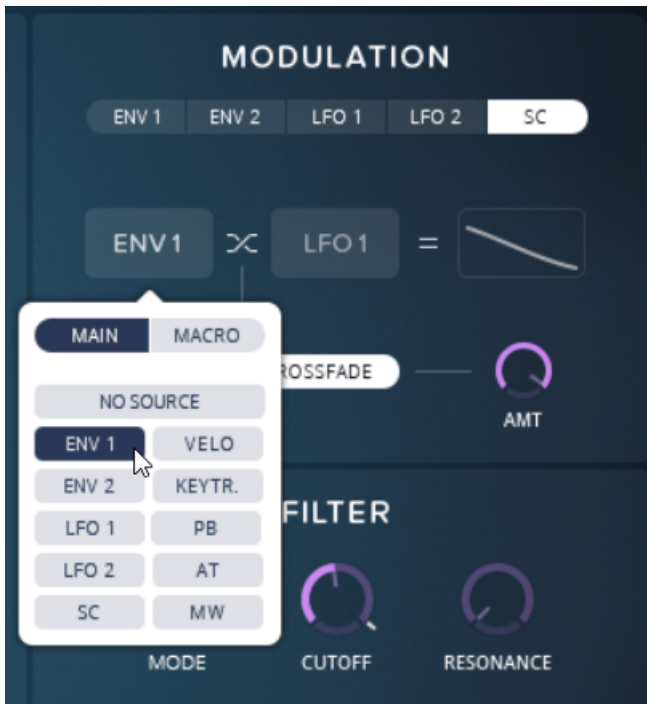
SC

(1) **Modulator slots:** Click each of these slots to open its **modulation assignment menu**, which displays all available modulators for the slot. Select one of the modulators from the menu for the corresponding slot by clicking their buttons in the menu.

(2) **Signal display:** The shape of the resulting output signal is reflected here.

(3) **MULTIPLYCROSSFADE:** Select the algorithm mode by which the SC modulator will combine the two modulation signals. **MULTIPLY** takes the signal from each modulator and multiplies their values by each other, whereas **CROSSFADE** switches back and forth between the signals.

(4) **AMT:** In **MULTIPLY** mode, this knob fades from outputting only the modulator in the left slot at fully left, to full multiplication of both modulation sources when set fully right. In **CROSSFADE** mode, the **AMT** knob functions as a crossfader.



Selecting a modulator as input

#### 4.4.4 Assigning Modulation

Any FORM parameter that is available for modulation can be assigned to up to three modulation sources simultaneously. To do so, follow the steps below.

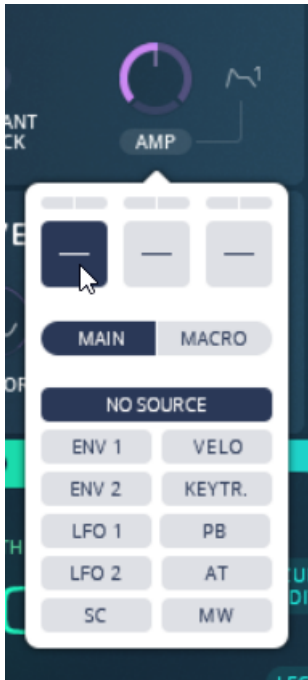
1. To open the modulation assignment menu, click the parameter label directly below the parameter.



The modulation assignment menu will open and display the three modulation slots for the chosen parameter.



- To select a modulation source, click one of the three modulation slots and the modulation source menu will open.

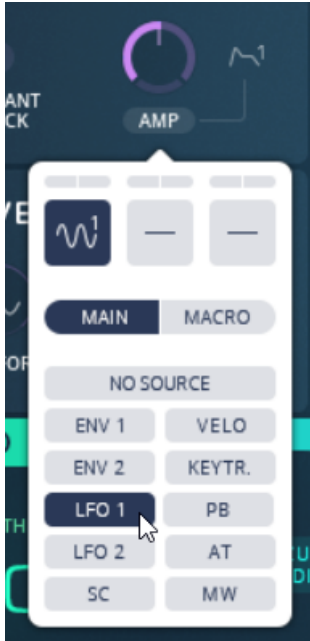




- ▶ To see the available sources, you can choose between *MAIN* and *MACRO*. Choosing *MAIN* will display the five modulation sources available in the **MODULATION** section of the **SOUND** page, as well as *VELO* for velocity, *KEYTR.* for key-tracking, *PB* for pitch-bend, *AT* for aftertouch, and *MW* for modulation wheel. Choosing *MACRO* instead displays the four macro controls, *PITCH CURVE* for the pitch curve of the loaded sample, and *MOTION CURVE* for the Motion Curve that is active in the **MOTION** section.

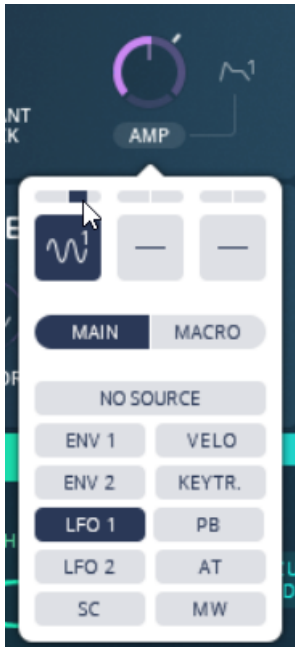


1. To select one of the modulation sources, click the corresponding modulation source button in the modulation source menu.



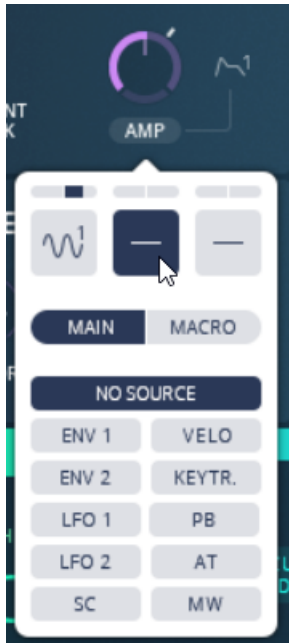
The selected modulation source will appear in the modulation slot.

2. To activate the modulator and assign the modulation depth as an offset to the parameter's value, click and drag the bipolar modulation slider directly above the modulation slot in the modulation menu in either direction.

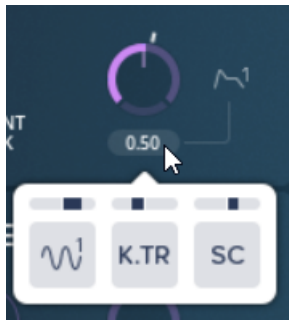


The parameter is now assigned as modulation destination and the modulation offset is visualized by an indicator moving at the corresponding speed of the modulation source.

- ▶ To assign a second or third modulation source, repeat the above steps using another modulation slot in the modulation menu.

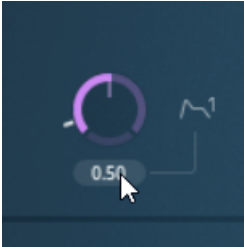


- ▶ To close the modulation menu, click the parameter label directly below the parameter.



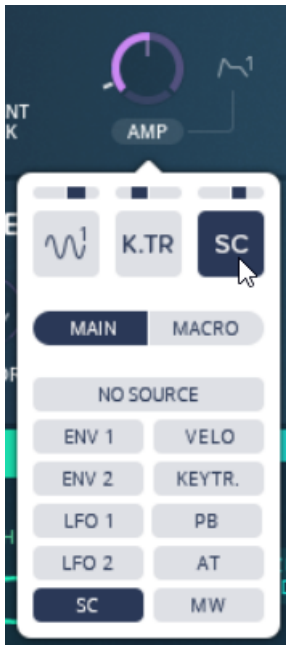
## 4.4.5 Removing Modulation

1. To remove a modulation source from a parameter, click the parameter label directly below the parameter.



The modulation menu will open.

2. Click the modulation slot containing the source you want to remove.



- To remove the modulation source, click the *NO SOURCE* button in the modulation menu.



- To remove all modulation sources, repeat the previous step until all modulation slots are empty.



For any and all of the modulators to send modulation signals, the **MOD AMOUNT** slider at the bottom right of the interface must be set to a value larger than 0. That is, if you click and drag the **MOD AMOUNT** slider fully left, all modulation is simultaneously switched off.

For information about the Macro controls, see section [↑6.4, Macro Controls](#).

#### 4.4.6 Modulating Modulator Parameters

Just as with other parameters available for modulation, the parameters of the modulators themselves can be assigned as modulation destinations. Modulators can be assigned to control both their own parameters and those of other modulators. This means that you can, for example, let **LFO1** control its own **SPEED**, and simultaneously also the **SPEED** parameter of **LFO2**. **LFO2** in turn can be assigned to control both its own **SHAPE** and **PHASE** parameters and those of **LFO1**. By doing so, you will have **LFO1** controlling the **SPEED** at which both LFOs set their **SHAPE** and **PHASE** parameters. Each of these two LFOs can then be assigned to as many oth-

er FORM parameters as you like. Beyond this, you can even use the two LFOs to multiply or crossfade each other's signals using the SC modulator. There is an almost unlimited amount of possible ways to modulate and cross-modulate the parameters of FORM to create sound textures that develop and change over a given time period.



Assigning modulation to a modulator parameter

For information on how to assign parameters for to a modulation source, see section [↑4.4.4, Assigning Modulation](#).



## 4.5 FILTER

The **FILTER** section provides a polyphonic multimode filter with low-pass, high-pass, and notch modes.



FILTER

(1) **MODE**: This selector lets you switch between *LP*, *HP*, and *NOTCH* modes.

- *LP*: Low-pass filtering lets you filter out audio content above the frequency set by the **CUTOFF** knob.
- *HP*: High-pass filtering lets you filter out audio content below the frequency set by the **CUTOFF** knob.
- *NOTCH*: Band-stop filtering lets you filter out audio content within a narrow frequency span centered on the frequency set by the **CUTOFF** knob.

(2) **CUTOFF**: Sets the cutoff frequency for the *LP* and *HP* modes and the center frequency for the *NOTCH* mode.

(3) **RESONANCE**: Sets the amount of resonance at the cutoff frequency.

## 5 The EFFECTS Page

FORM's **EFFECTS** page is equipped with traditional effect units for compression, delay, and reverb, but also a new **FREQUENCY SHAPING** unit that lets you select specific frequency spectra and boost, mitigate, or distort these.



### EFFECTS

**(1) FX Copy / FX Paste:** These buttons can be used to copy and paste all settings on the **EFFECTS** page between Performance slots, both in the same preset as well in another preset. Clicking **FX Copy** copies the settings to the clipboard, while clicking **FX Paste** pastes the settings from the clipboard into the **EFFECTS** page of the currently selected Performance slot.

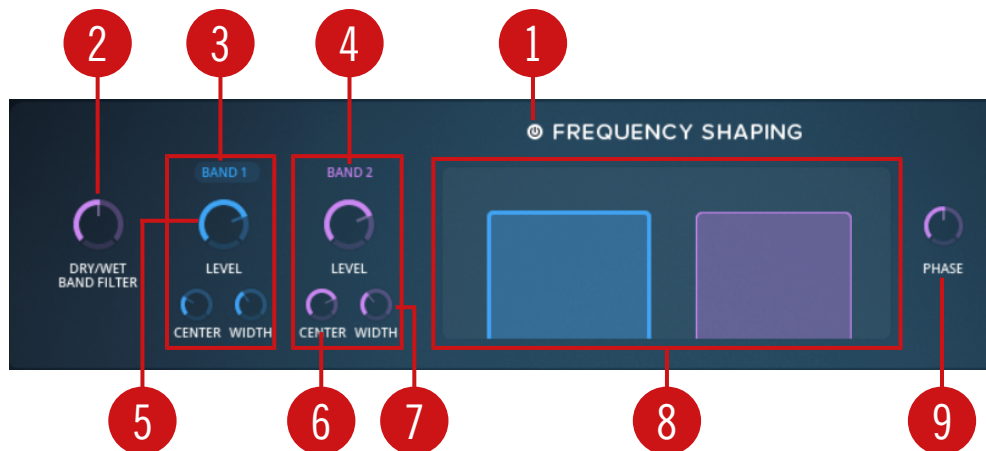
**(2) FREQUENCY SHAPING:** This section can be seen as an advanced multiband filter, where you can set two different frequency bands and attenuate or diminish the output of these frequencies. See section [↑5.1, FREQUENCY SHAPING](#).

**(3) WARMTH** (only available with **FREQUENCY SHAPING** switched on): Use this section to add an overdrive effect and add warmth to the output. See section [↑5.2, WARMTH](#).

- (4) **DYNAMICS**: This is FORM's compressor, which can be used to control the dynamic range. See section [↑5.3, DYNAMICS](#).
- (5) **DELAY**: A delay unit with settings for both ping pong and standard delay. See section [↑5.4, DELAY](#).
- (6) **REVERB**: A reverb unit with five different room settings as well as filter controls. See section [↑5.5, REVERB](#).

## 5.1 FREQUENCY SHAPING

The **FREQUENCY SHAPING** unit lets you select specific bands of the frequency spectrum and control these. The bands are represented visually by blue and purple bars and their sizes and shapes can easily be set and modulated via the knobs on the left side of the unit.



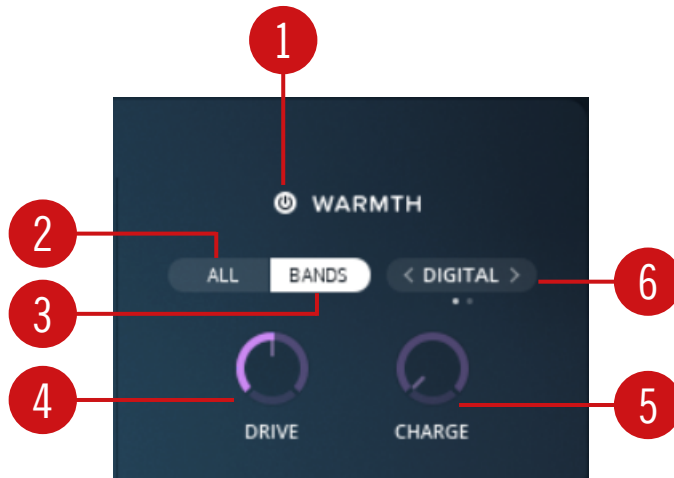
FREQUENCY SHAPING

- (1) **FREQUENCY SHAPER** button: Switches the effect unit on or off.
- (2) **DRY/WET BAND FILTER**: Turn to mix between dry signal and the wet signal filtered by the frequency bands.
- (3) **BAND 1**: Controls for **BAND 1**, visually reflected as blue band by the Band display.
- (4) **BAND 2**: Controls for **BAND 2**, visually reflected as purple band by the Band display.

- (5) **LEVEL**: Set the amount of frequency shaping for the corresponding frequency band.
- (6) **CENTER**: Set the center position along the frequency spectrum for the corresponding frequency band.
- (7) **WIDTH**: Set the bandwidth or the corresponding frequency band.
- (8) **Band display**: Visually reflects the settings of the **BAND 1** and **BAND 2** settings as blue and purple bars, respectively. Click and drag the bands to set the **LEVEL** knobs. When the parameters are modulated, a fluctuating offset is visible for each frequency band bar.
- (9) **PHASE**: Adjust the phase cancellation between the dry and wet signals.

## 5.2 WARMTH

The **WARMTH** unit is only available when the **FREQUENCY SHAPING** unit is switched on. It adds saturation and color to the sound.



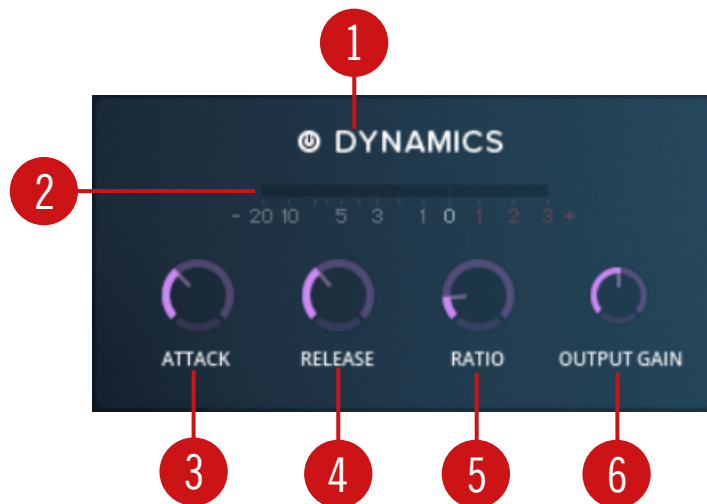
WARMTH

- (1) **WARMTH** button: Switches the effect unit on or off.
- (2) **ALL**: Select this to apply the **WARMTH** effect to the entire frequency spectrum after the signal has been processed by the **FREQUENCY SHAPING** unit.

- (3) **BANDS**: Select this to apply the **WARMTH** effect only to the frequency spectrum selected by the bands in the **FREQUENCY SHAPING** effect unit, whereas the dry signal is not affected.
- (4) **Mode selector**: Click the arrows to switch between the available modes.
- **DIGITAL**: Applies digital distortion to the input signal.
  - **TUBE**: Applies overdriven saturation the input signal.
- (5) **DRIVE**: Turn to apply input amplification to drive the distortion effect.
- (6) **CHARGE**: Tweak the character of the signal from soft at fully left to hard at fully right.

## 5.3 DYNAMICS

The **DYNAMICS** effect is a compression unit that gives you full control of the dynamic range of the signal. The **DYNAMICS** unit is located as the first unit in FORM's FX chain.



DYNAMICS

- (1) **DYNAMICS** button: Switches the effect unit on or off.
- (2) **Level meter**: Displays the amount of compression being applied to the input signal.

- (3) **ATTACK**: Turn to set the time of the attack phase.
- (4) **RELEASE**: Turn to set the time of the release phase.
- (5) **RATIO**: Turn to set the amount of gain reduction at the input.
- (6) **OUTPUT GAIN**: Turn to set the output gain level.

## 5.4 DELAY

The **DELAY** unit gives you the ability to control the time and space of your sound. Together with the **REVERB** unit, the **DELAY** effect is located at the end of the FX chain.



DELAY

- (1) **DELAY** button: Switches the effect unit on or off.
- (2) **PING PONG**: Click and drag this bipolar slider either direction to apply stereo panning to the delayed signal.
- (3) **LEVEL**: Sets the amount of delay applied to the input signal.
- (4) **LENGTH**: Sets the time of the delay.

(5) **SNAP**: Click to switch **SNAP** on or off. When on, time quantization is applied to the **LENGTH** knob in relation to host tempo and grain-like smoothing is used. When off, delay **LENGTH** is set as a free floating value and tape-like smoothing is used.

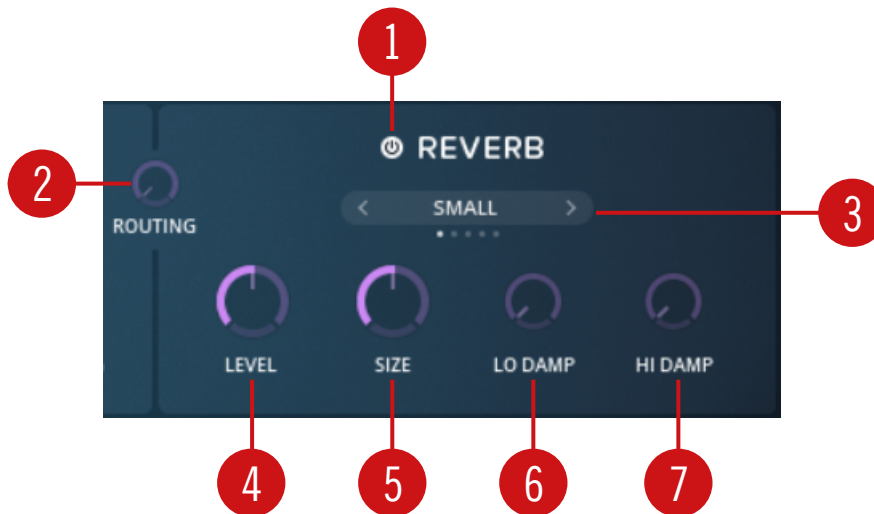
(6) **FEEDBACK**: Sets the amount of delay feedback signal.

(7) **DAMPING**: Sets the amount of filtering. Turn anticlockwise for low-shelf damping and clockwise for high-shelf damping.

(8) **ROUTING** (only available if **REVERB** is simultaneously switched on): Set fully left to route the **DELAY** and **REVERB** units in serial **DELAY—REVERB** mode, via parallel at center position to **DELAY—REVERB** at fully right.

## 5.5 REVERB

The **REVERB** unit lets you control the size of the sound and its position in the mix. Together with the **DELAY** unit it is located at the end of the FX chain.



REVERB

(1) **REVERB** button: Switches the effect unit on or off.

(2) **ROUTING** (only available if **DELAY** is simultaneously switched on): Set fully left to route the **DELAY** and **REVERB** units in serial **DELAY—REVERB** mode, via parallel at center position to **DELAY—REVERB** at fully right.

(3) **Room size selector**: Click the arrows to switch between reverb types. Available types are:

- *SMALL*
- *LARGE*
- *SPACE*
- *CHEAP*
- *UNREAL*
- (4) **LEVEL**: Sets the amount of reverb being applied to the input signal.
- (5) **SIZE**: Sets the room size.
- (6) **LO DAMP**: Sets the amount of high-pass filtering of the reverb tail.
- (7) **HI DAMP**: Sets the amount of low-pass filtering of the reverb tail.



## 6 The Footer

The Footer contains controls that let you control the playback tempo in the **SPEED** section (↑6.1, **SPEED**), the behavior of the Motion Curve in the **MOTION** section (↑6.2, **MOTION**), and the act of saving and playing back the Performance slots in the **PERFORM** section (↑6.3, **PERFORM**).



The Footer with its sections

### 6.1 SPEED

The **SPEED** section contains controls for setting playback speed as a factor multiplied by either the length of the sample, by cycles per second, or by the BPM of your DAW, depending on the settings you select. The values can be assigned as modulation destinations, which can add interesting textures and IDM-like tempo changes. You can also control the playback position manually, with modulation, or via host automation.



The SPEED section

(1) **Speed:** Click and drag the numbers to set the speed as a factor multiplied by the selected time base (**SAMPLE**, **HZ**, or **BPM**). Depending on the time base selected, this label depicts either **SAMPLE LENGTH** (for **SAMPLE**), **CYCLES/SEC** (for **HZ**), or **SYNC SPEED** (for **BPM**). Click the label to assign modulation to the **SPEED** controls.

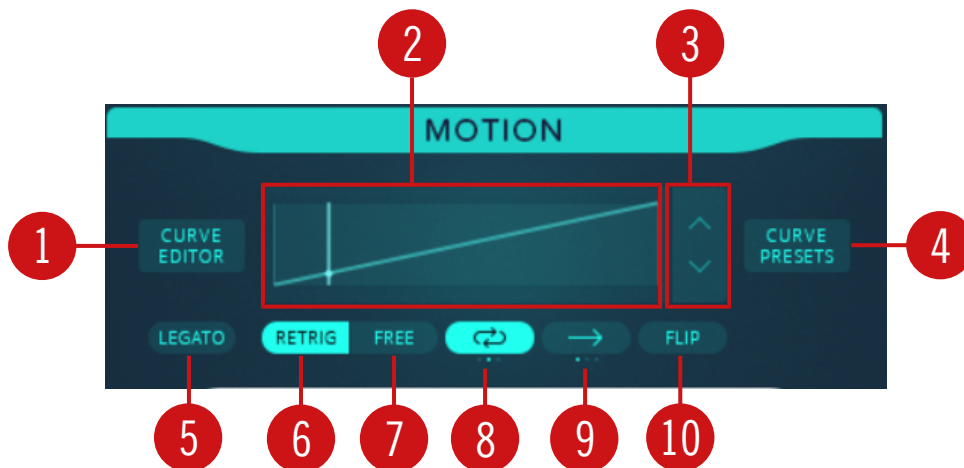
(3) **SNAP** (available for **SAMPLE** and **BPM**): Switch on to snap the value to the nearest available value, from *0*, *1/16*, *1/8*, *1/4*, *1/2*, *1*, *2*, *4*, *8* to *16*. Dotted values and triples are available, too. To toggle between the different sets of values, click on the **SNAP** button repeatedly.

(4) **Time base selector:** Select the type of factor that will be multiplied by the value set by the numbers in the Speed control. Available are **SAMPLE**, **HZ**, and **BPM**:

- **SAMPLE:** Motion Curve playback speed is set in relation to original sample playback speed.
- **HZ:** Motion Curve playback speed is set in cycles per second.
- **BPM:** Motion Curve playback is set based on host tempo.
- **MANUAL:** The playback position can be directly controlled with a knob. You can also apply modulation to this knob, or automate it from your DAW.

## 6.2 MOTION

The **MOTION** section is located in the Footer and contains controls for FORM's Motion Curves. Use the controls to define the behavior of the play head and the Motion Curve. The parameters in the **MOTION** section cannot be assigned as modulation destinations, but the Motion Curves themselves can be used as modulation sources and be assigned to other parameters.



The MOTION section

(1) **CURVE EDITOR**: Click this button to call up the **CURVE EDITOR** at the Main section. The **CURVE EDITOR** is an advanced Motion Curve creation environment where you can edit your own Curves. For more detailed information, see section [↑6.2.2, The CURVE EDITOR](#).

(2) **The Motion Curve display**: The active Motion Curve for one of the Performance slots (see section [↑6.3, PERFORM](#)) is displayed here together with the loop range and the current play head position.

(3) **The Motion Curve selector**: Click the up and down arrow buttons to switch to the next Motion Curve slot from the **CURVE PRESETS**.

(4) **CURVE PRESETS**: Click this button to call up the **CURVE PRESETS** at the Main section. The **CURVE PRESETS** lets you see all saved Motion Curves and also enter **WRITE MODE** to save your own Motion Curves.

(5) **LEGATO** (only available in **RETRIG** mode): Switch this on to activate **LEGATO** mode, in which only the first MIDI note-on retriggers the Motion Curve playback.

(6) **RETRIG**: Switch this on to enter **RETRIG** mode, in which MIDI note-on automatically retriggers Motion Curve playback. By additionally enabling **NOTE RETRIG** in the **PERFORM** section's Perform Settings, the Motion Curve playback is also retriggered when switching Performance slots.

(7) **FREE**: Switch this on to enter **FREE** mode, in which the Motion Curve plays and loops continuously. MIDI note-on messages are ignored, so pressing down a key on your MIDI keyboard will play back the sample from the position of the Motion Curve where the play head is located at the time.

(8) **Loop** (only available in **RETRIG** mode): Controls the looping behavior of the Motion Curve. The range of the Motion Curve that will be looped is visually reflected by the Motion Curve display as an overlay and can be adjusted in the **CURVE EDITOR**. Available modes are:

- *Off*
- *Continue loop on note-off*: The play head continues to loop within the loop range even after the note has been released.
- *Leave loop on note-off*: The play head leaves the loop as soon as you release the note.

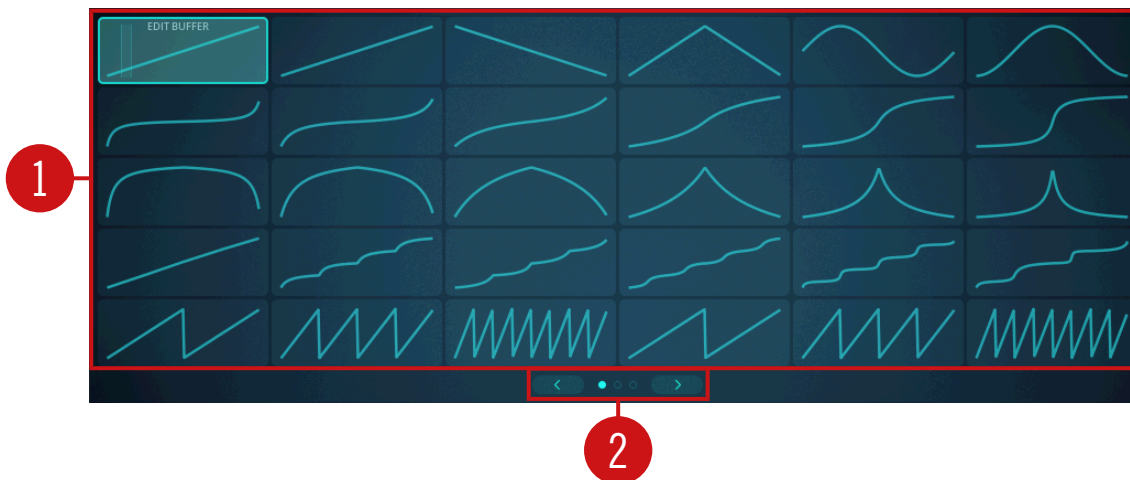
(9) **Loop direction** (only available in **RETRIG** mode): This controls the loop behavior for **FREE** and **RETRIG** modes. Select between three modes of loop direction:

- *Forward*: From left to right.
- *Backward*: From right to left.
- *Pendulum*: From left to right and then right to left, repeatedly.
- (9) **SYNC** (only available in **FREE** mode): Activate to sync the play head position in the Motion Curve for all polyphonic voices simultaneously.

(10) **FLIP**: Click to invert the entire Motion Curve horizontally.

### 6.2.1 The CURVE PRESETS

The **CURVE PRESETS** window can be found by clicking the **CURVE PRESETS** button in the **MOTION** section. This is where all Motion Curves are saved, ready to be loaded for use with your samples.



The CURVE PRESETS

(1) **Motion Curve slots:** Click the slots to select the corresponding Motion Curves. The selected Motion Curve is highlighted. When opening the [CURVE PRESETS](#) window, the Motion Curve currently loaded in the [EDIT BUFFER](#) remains available in the first slot until you close the window.

(2) **Page buttons:** Click the left and right page buttons to navigate between the three available pages containing Motion Curves.

## 6.2.2 The CURVE EDITOR

You can use the [CURVE EDITOR](#) to create own Motion Curves.

- ▶ To call up the **CURVE EDITOR** at the Main section, click the **CURVE EDITOR** button in the **MOTION** section of the Footer.

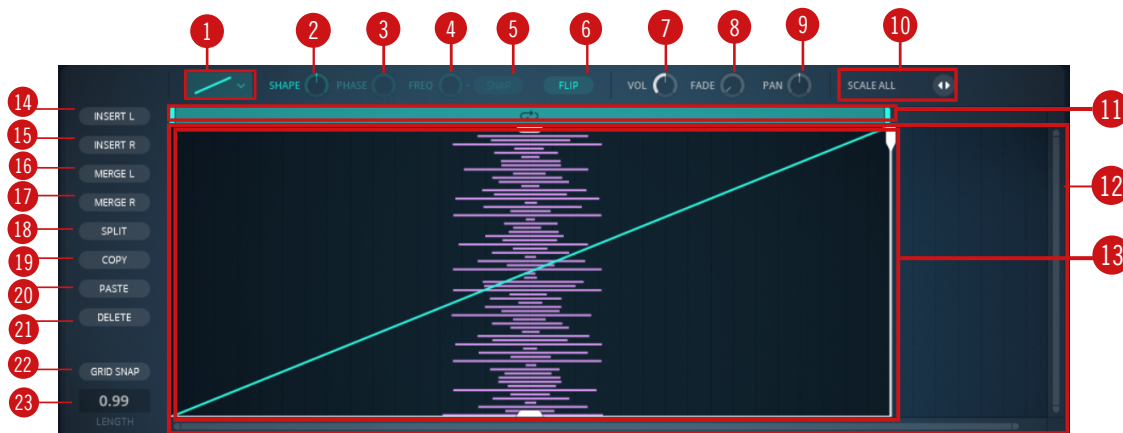


→ The **CURVE EDITOR** opens with the active Motion Curve loaded.



The parameters of the **CURVE EDITOR** cannot be modulated. You can however use the resulting Motion Curve as a modulator and assign it to other parameters. This will let you control the motion behavior of the modulation destination, similar to a complex envelope.

All parameters available in the **CURVE EDITOR** are described below.



#### The CURVE EDITOR

(1) **Curve menu:** Click the drop-down menu and select the corresponding Motion Curve to load it into the active segment in the editor. Depending on which curve you select, different knobs will be available for editing (**SHAPE**, **PHASE**, and **FREQ**). **VOL**, **FADE**, and **PAN** are available for all curves. The first five waveforms in the menu will play back once per segment, whereas repeating waveforms (the bottom three) can be altered using the **FREQ** knob and the **LENGTH** control to play back multiple times, creating for example a pulse-like behavior. The available Curves are:

- *Flat line*
- *Rising line*
- *Double curve*
- *Triangle*
- *Sine*
- *Repeating line*
- *Repeating Triangle*
- *Repeating Sine*



- (2) **SHAPE**: Turn this knob either direction to further define the shape of the waveform selected by the Curve menu. **SHAPE** works similar to a pulse-width control in that it edits the shape of the waveforms between the waveforms' peaks, for example by adding a curve shape to an otherwise straight line.
- (3) **PHASE**: Turn this knob either direction to shift the phase of the waveform along the time axis.
- (4) **FREQ** (available for repeating waveforms): Turn this knob either direction to set the amount of repetitions within a segment.
- (5) **SNAP** (available for repeating waveforms): Switch on to snap the **FREQ** knob to a grid.
- (6) **FLIP**: Click to invert the entire Motion Curve horizontally.
- (7) **VOL**: Set the output level for the segment.
- (8) **FADE**: Turn clockwise to set a longer attack phase for the segment.
- (9) **PAN**: Turn either direction to pan the output audio to the corresponding side during playback of the segment.
- (10) **SCALE ALL**: Click and drag the arrow button up or down to set the **LENGTH** of the segment. This is mostly interesting for repeating waveforms, where increasing the **LENGTH** value also means adding more repetitions of the waveform within the segment.
- (11) **Loop bar**: Set the timeframe of the loop that will be repeated in **RETRIG** mode by clicking and dragging the edges of the bar. The timeframe is visualized as an overlay in the Motion Curve display of the **MOTION** section.
- (12) **Editor display**: The loaded sample is shown along the y-axis of the Editor display and the selected waveform that constitutes each segment's curve is visualized as an overlay moving along the x-axis.
- (13) **Segment window**: Click and drag the white handles at the top, bottom and on the side(s) of the segment to alter the depth of the Motion Curve as well as the size of the segment.
- (14) **INSERT L**: Click to insert a new segment to the left of the selected segment.
- (15) **INSERT R**: Click to insert a new segment to the right of the selected segment.
- (16) **MERGE L**: Click to remove the segment to the left of the selected segment and simultaneously move the selected segment to that position along the x-axis.

(17) **MERGE R**: Click to remove the segment to the right of the selected segment and simultaneously move the active segment to that position along the x-axis.

(18) **SPLIT**: Click to split the selected segment in two segments, each of which is half the length of the selected segment.

(19) **COPY**: Click to copy the selected segment to the clipboard.

(20) **PASTE**: Click to insert the copied segment at the position of the selected segment.

(21) **DELETE**: Click to delete the selected segment.

(22) **GRID SNAP**: Click to activate or deactivate **GRID SNAP**. When active, resizing segments by clicking and dragging the white draggers at each side of a segment window will force the window size to snap to the step grid.

(23) **LENGTH**: Click and drag to set the length of the entire Motion Curve.

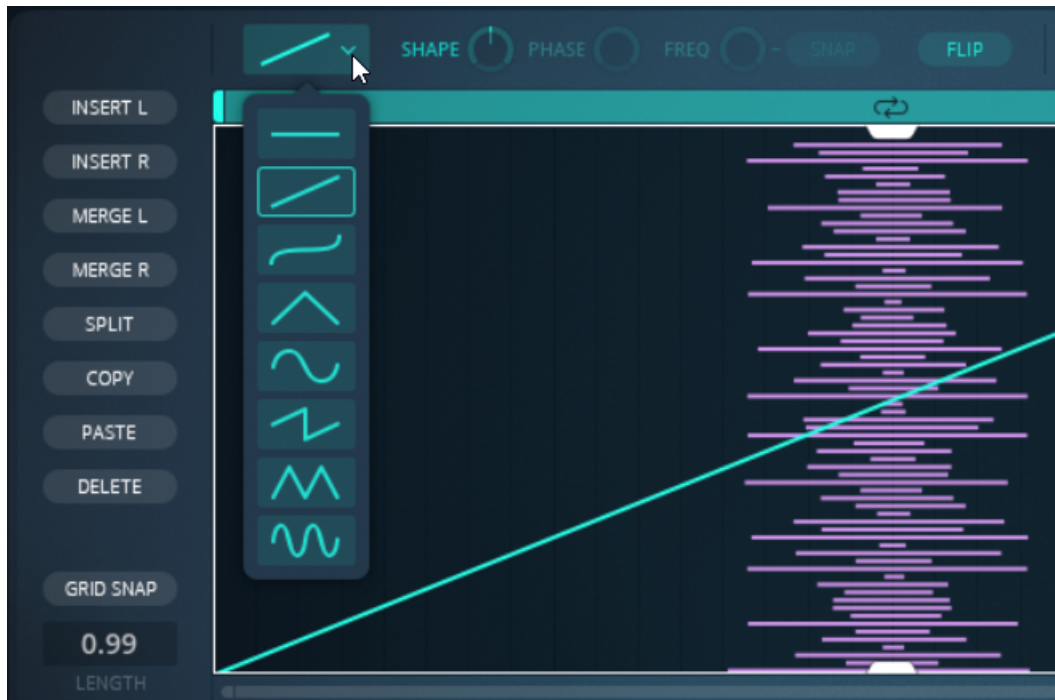
### 6.2.3 Creating a Motion Curve

With the **CURVE EDITOR** open (for information on opening the **CURVE EDITOR**, see section [16.2.2, The CURVE EDITOR](#)), you will see your sample along the y-axis of the Editor display together with the waveform that constitutes the Motion Curve for the selected segment. Per default, only one segment will be active. In the following tutorial you will learn how to add and edit segments and their corresponding waveforms to create a bespoke Motion Curve.

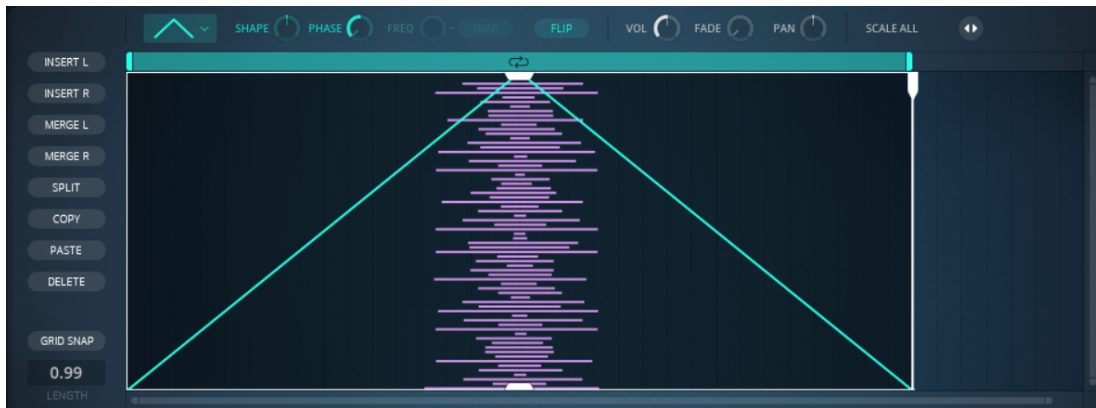


The initial state of the CURVE EDITOR.

- ▶ To change the waveform of the selected segment (at this point there is only one segment), click the Curve menu to the upper left and select a waveform from the drop-down menu.



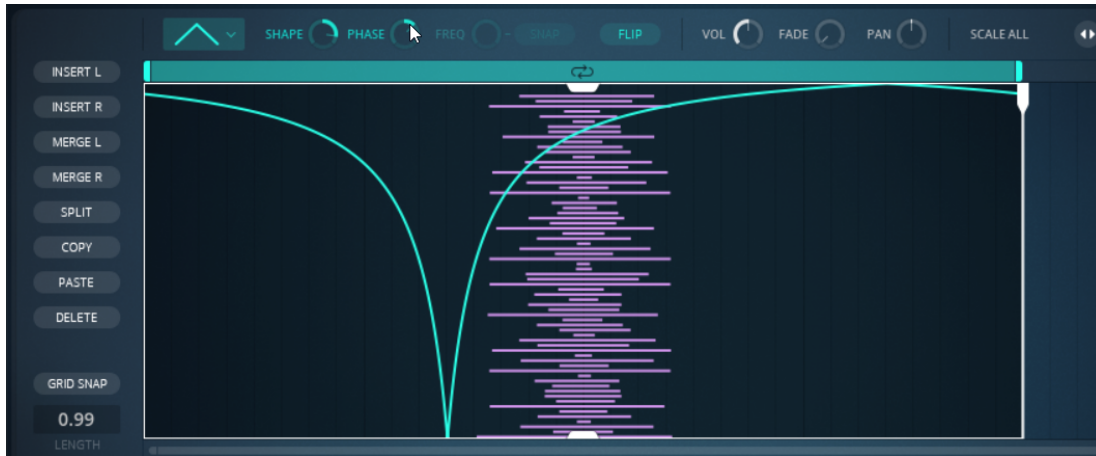
- Here we have selected the triangle waveform, which is now visible in the Editor display. The output sound of your sample will now be following a rising and then falling curve.



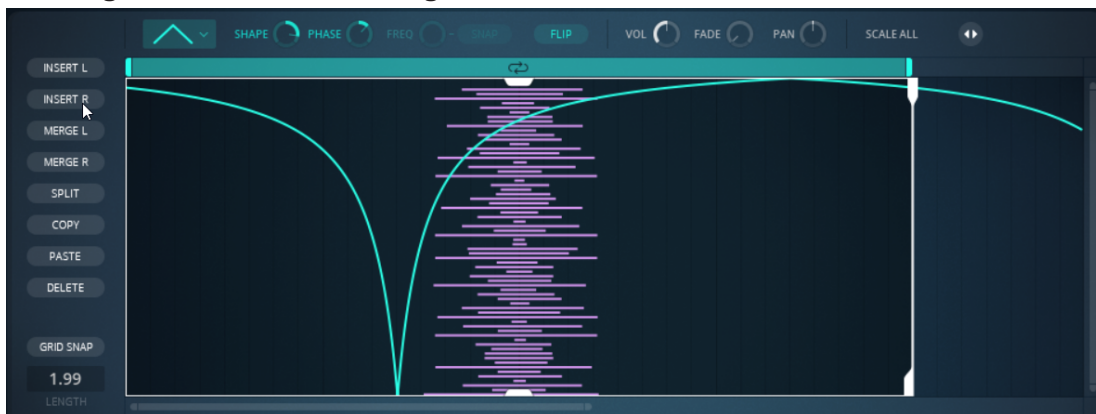
- ▶ To alter the shape of the waveform, turn the **SHAPE** knob in either direction. Turn it fully left for a quicker and steeper rise and fall, or fully right for a total inversion of the shape.



- ▶ To define where along the time axis the inverted triangle waveform will have its peak or dip, turn the **PHASE** knob by clicking and dragging it.



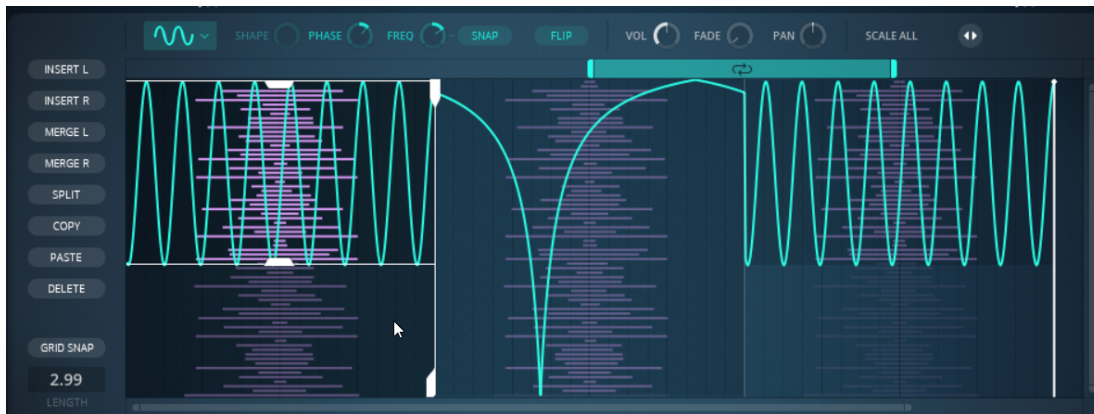
- ▶ To add another segment to the Motion Curve, click either the **INSERT L** button or the **INSERT R** button, depending on whether you want the next segment to appear on the left or the right side of the selected segment.



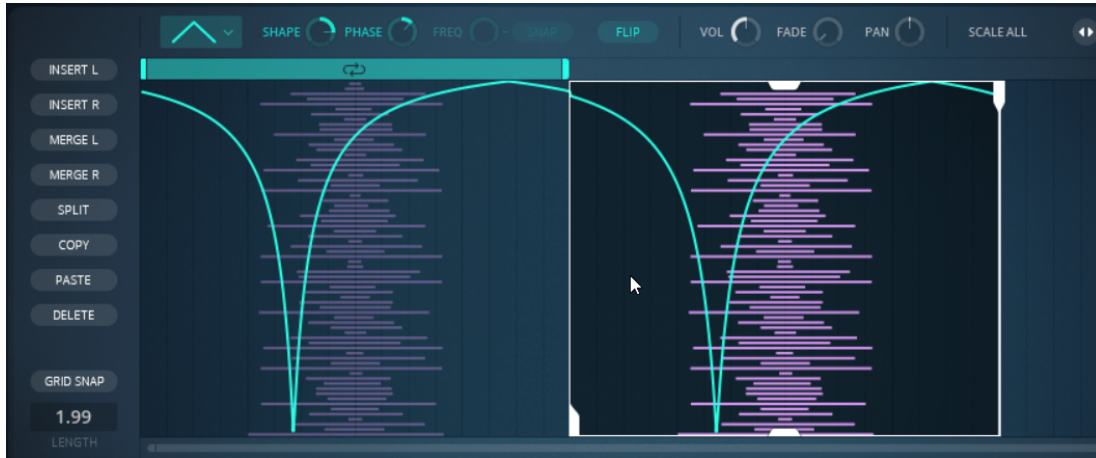
- The addition of another segment and its waveform is reflected by the Motion Curve display in the MOTION section.



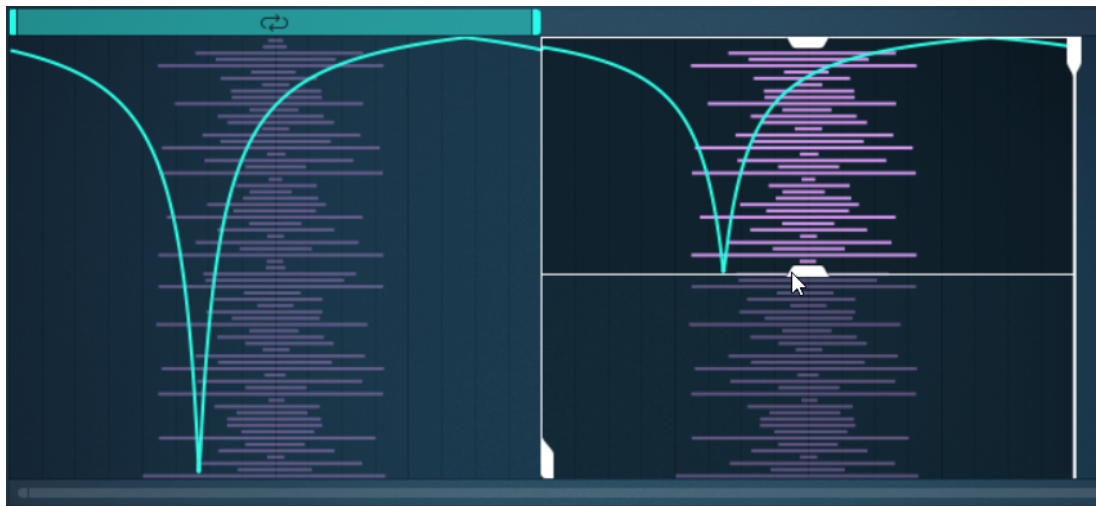
- ▶ To zoom out and make both segments visible simultaneously, right-click and drag anywhere in the segment.



- ▶ To select the second segment, click it.



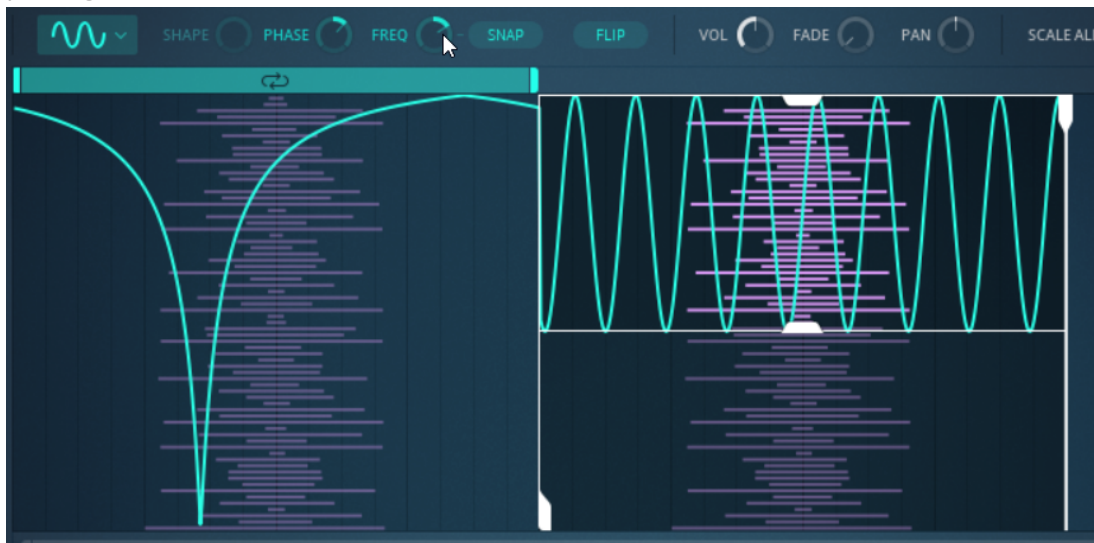
- ▶ To edit the depth of the waveform for the selected segment, click and drag the white handle at the top and/or bottom of the segment.



- ▶ To use a different waveform for the second segment, open the Curve menu and select a waveform from the drop-down menu. This time, let's select a repeating waveform, e.g., repeating sine.



- ▶ To set the amount of repetitions within a segment, turn the FREQ knob available for repeating waveforms.

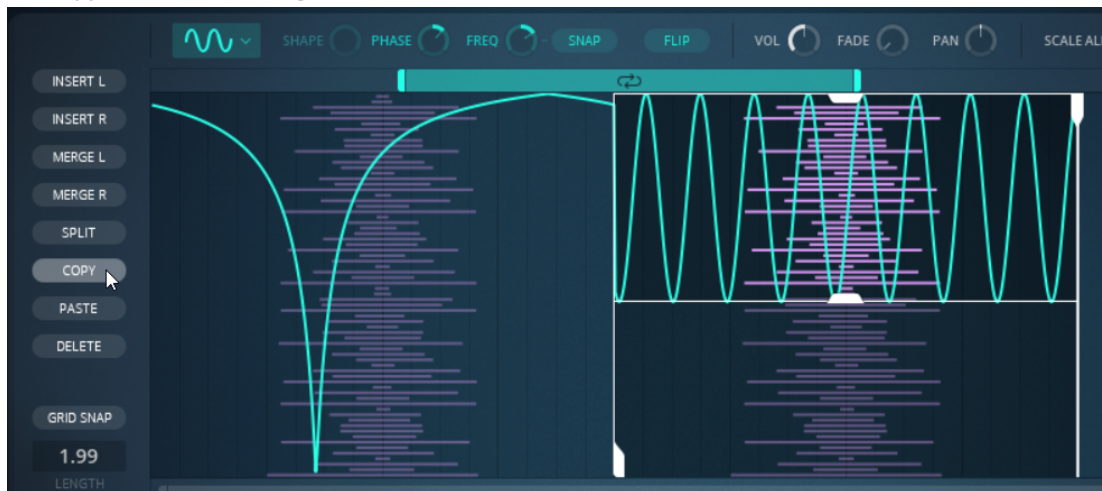




- ▶ To select the timeframe of the Motion Curve that will be looped in **RETRIG** mode, click and drag the loop bar. To resize it, click and drag the edges of the loop bar.



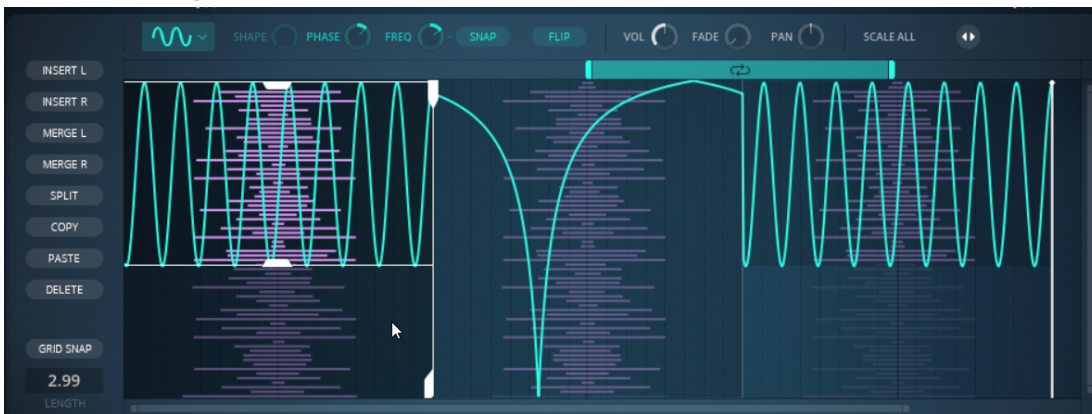
1. To copy the selected segment, click the **COPY** button in the left-side menu.



- To insert the copied segment, e.g., at the initial phase of the Motion Curve, click the left-most segment to select it and then click **INSERT L**. A new segment will be added, identical to the one that was selected. To replace it with the segment placed in the clipboard, click the **PASTE** button in the left menu.



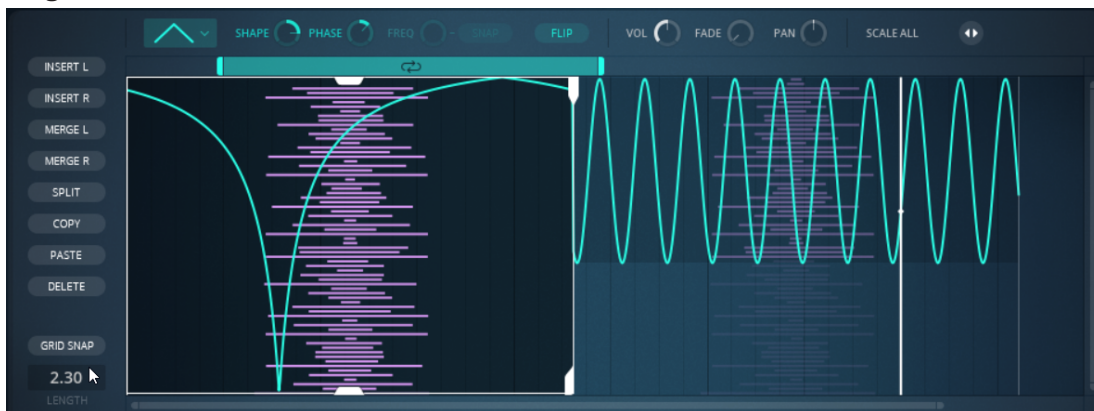
- ▶ To zoom out and make both segments visible simultaneously, right-click and drag anywhere in the segment.



- ▶ If you are unhappy with the sound of a segment and want to remove it, select it by clicking it and click the **DELETE** button.



- ▶ To elongate the Motion Curve and e.g. add more repetitions to the waveform, click and drag the **LENGTH** control in the bottom left corner of the **CURVE EDITOR**.



→ The Motion Curve display in the MOTION section reflects the changes.

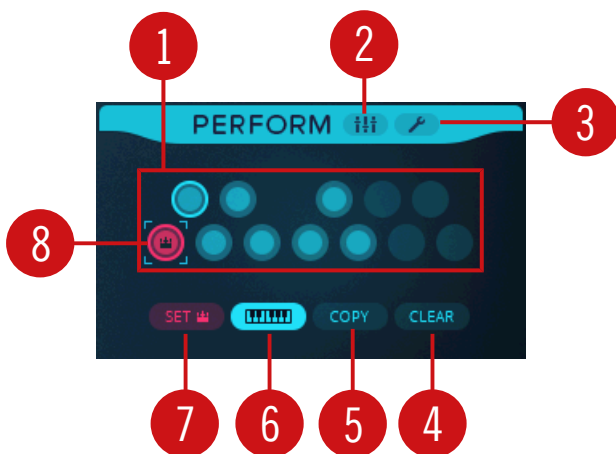


## 6.3 PERFORM

Use the **PERFORM** section to save versions of your Sound with all its parameter settings, including the Motion Curve, and play them back using your MIDI keyboard.



Form 1.1 introduces a vast number of new presets that make full use of the **PERFORM** section. Find them by opening REAKTOR's Preset Browser in the Side Pane and double-clicking on the **Factory** folder.



PERFORM

(1) **Performance slots:** Click any slot to switch to it, resetting all parameters to their saved default state and letting you edit them. There is no need to manually save the Sound to a Performance slot, as editing any FORM parameter will automatically save the current state of FORM to the selected Performance slot. You can also switch between the slots using your MIDI keyboard while in Keyboard mode (see (6) **Keyboard button**). For more information, see [↑6.3.1, Saving a Sound to a Performance Slot](#) and [↑6.3.2, Switching between Performance Slots](#).

(2) **Volume settings button:** Click to switch to the Volume settings page (see below).

(3) **Perform settings button:** Click to switch to the Perform settings page (see below).

(4) **CLEAR:** Click to activate **CLEAR**. With **CLEAR** active, click a Performance slot to remove its saved Sound. For more information, see [↑6.3.4, Clearing Performance Slots](#).

(5) **COPY:** Click to copy the Sound in the selected Performance slot to the clipboard. Clicking another Performance slot with the **COPY** button lit will effectively remove that Sound and replace it by the one selected before clicking the **COPY** button. You can also copy a Sound and paste it into another preset's Performance slot. For more information, see [↑6.3.3, Copying a Sound to another Performance Slot](#).

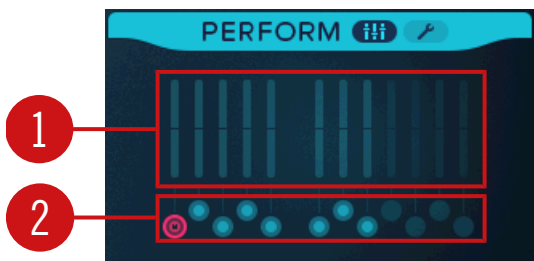
(6) **Keyboard button:** Switch on to enter Keyboard mode, in which you can switch between Performance slots using the control octave of your MIDI keyboard. You can set the control octave of your choice on the Perform settings page (see (3) **Perform settings button**). Only Performance slots containing a saved version of the Sound will be switched to, meaning that pressing a key that corresponds to an empty Performance slot will not switch to the slot until you have manually selected the slot and edited a parameter. Doing so will highlight the slot and make it available for switching from the control octave.

(7) **SET** (only available in **MULTI MODE**): With **MULTI MODE** active, click the **SET** button to enter **SET** Master mode. The button will glow red to reflect the mode. While in **SET** Master mode, you can click any Performance slot to select it as Master slot. For more information, see [↑6.3.5, Playing FORM in Multi Mode](#).

(8) **Master slot** (only available in **MULTI MODE**): With **MULTI MODE** active, you can play back up to four Performance slots simultaneously, using up to four polyphonic voices. The amount of voices can be set from 2-4, using the Voice amount button. The Master slot serves as the base key for these voices and illuminates red with a crown icon, while the remaining voices are assigned to the next active Performance slots in the **PERFORM** octave. The remaining slots in

the assignment chain wrap around, so selecting the highest key of the octave (which is also the rightmost slot), will assign the lowest active keys as slave voices. For more information, see [↑6.3.5, Playing FORM in Multi Mode](#).

## Volume Settings

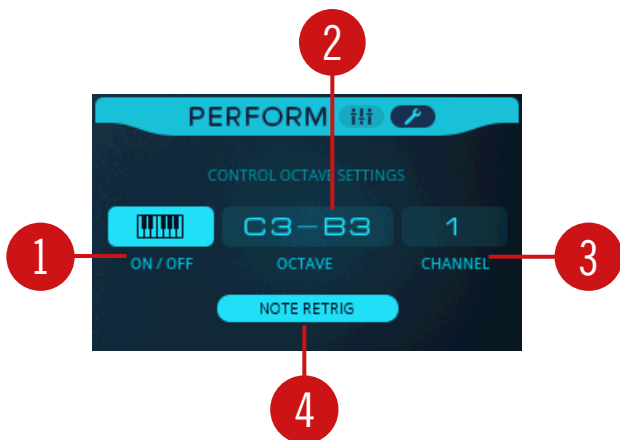


PERFORM, Volume settings

(1) **Volume controls:** Use these controls to adjust the relative levels of the Performance slots. When set to middle position, the level of the corresponding Performance slot is not changed. Drag the control upwards to boost the level by up to 12 dB. Drag the control downwards to attenuate the level by up to 12 dB.

(2) **Performance slot selector:** By clicking on the Performance slot symbol below a volume control, FORM switches to the corresponding Performance slot.

## Perform Settings



PERFORM, Perform settings

(1) **ON / OFF**: Click to enable or disable the control octave, which allows you to switch between Performance slots from your MIDI keyboard.

(2) **OCTAVE**: Click and drag to set the control octave on your MIDI keyboard. The set control octave is reflected by the display and can be used to switch between Performance slots.

(3) **CHANNEL**: Click and drag to set the MIDI channel on which to send the control octave from your MIDI keyboard.

(4) **NOTE RETRIG**: Click to enable or disable retriggering of active notes when a Performance slot is switched. This means the Motion Curve is reset as soon as you click on a new Performance slot, in the same way it is reset when a new note is received. **NOTE RETRIG** only has an effect if **RETRIG** is enabled in the **MOTION** section.

### 6.3.1 Saving a Sound to a Performance Slot

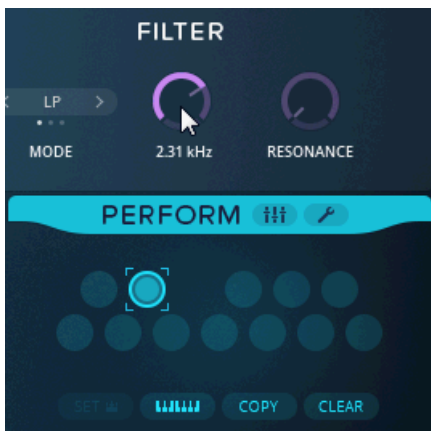
You do not have to manually save the Sound you are working on to a Performance slot. Instead, the moment you edit the settings of any FORM parameter, e.g. by turning a knob or assigning modulation, the selected Performance slot will be filled by the current settings of FORM and saved. By default, this will be the leftmost slot. To select another Performance slot, click it with your mouse. If Keyboard mode is active, you can switch to another Performance slot by pressing the corresponding key in the control octave on your MIDI keyboard.

To save a Sound to a Performance slot, follow these steps.

1. To select a Performance slot, click the slot you want to fill.



2. To save the state of FORM with all its settings, edit any parameter.



→ The Performance slot illuminates to indicate that the Sound has been saved.

- ▶ To fill further Performance slots, repeat the steps above and edit any parameter you want.

### 6.3.2 Switching between Performance Slots

Once you have saved one or more Sounds to their respective Performance slots, you can switch between the slots to quickly jump between different states of FORM in real time. This means that you can switch tempo, Motion Curve behavior, pitch, modulation, etc. all at once by just pressing a key on your MIDI keyboard.

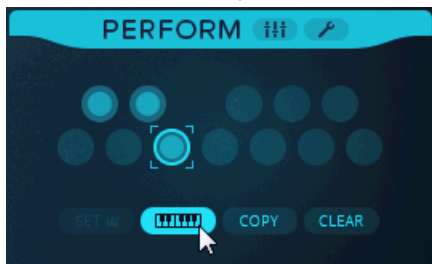
1. To switch to another Sound directly in FORM, click the corresponding Performance slot.



## Switching with a MIDI Keyboard

To switch between Performance slots using the control octave on your MIDI keyboard, you have to first activate Keyboard mode.

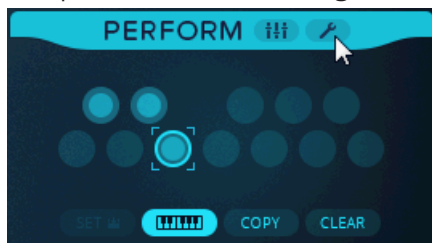
- ▶ To activate Keyboard mode and enable the use of a control octave on your MIDI keyboard, click the Keyboard button.



→ You can now switch between Performance slots containing saved Sounds, using the keys of the set control octave on your MIDI keyboard.

You can set the control octave to any octave on your MIDI keyboard in the Perform settings.

1. To open the Perform settings, click the Perform Settings button.



2. To set the octave to be used as control octave, click and drag the keys in OCTAVE display.



- To return to the Performance slots, click the Perform Settings button again.

### 6.3.3 Copying a Sound to another Performance Slot

To copy a Sound with all FORM's settings from one Performance slot and paste it into another slot, follow these steps.

- To select the Sound you want to copy, click the Performance slot in which it is saved.



- To copy the Sound, click the COPY button so it illuminates.



The Sound is now placed in the clipboard.

- To paste the Sound into another Performance slot, click the Performance slot you want to paste it into.



→ An identical copy of the selected Sound is now saved in the new Performance slot.

Using the same method, you can also copy a Sound and paste it into another preset's Performance slot. This replaces all parameter settings saved in the Performance slot, however the preset's original sample remains loaded.



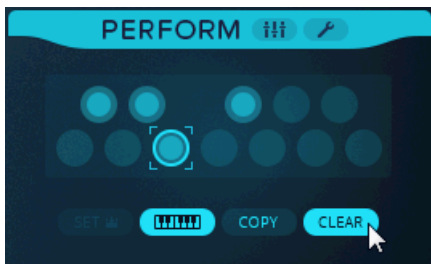
If you only wish to copy the settings on the [EFFECTS](#) page to another Performance slot or preset, you can do so by using the [FX Copy](#) / [FX Paste](#) buttons in the upper left corner of the [EFFECTS](#) page. For more information, see section [↑5](#), [The EFFECTS Page](#).

### 6.3.4 Clearing Performance Slots

If you are unhappy with the settings of a Sound and want to start anew with default settings, you can do this by clearing the Performance slot containing the Sound.

#### Clearing a Performance Slot

1. To enter **CLEAR** mode, click the **CLEAR** button so it illuminates.



2. To clear a Sound and its settings, while in **CLEAR** mode, click its corresponding Performance slot.

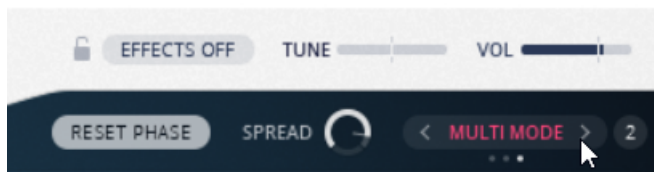


→ The Performance slot is empty and its settings are reset to their default.

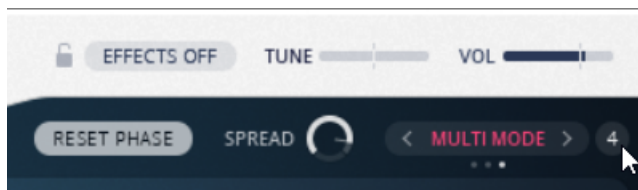
### 6.3.5 Playing FORM in Multi Mode

In **MULTI MODE**, you can play back up to four saved Sounds simultaneously. This means that not only can you switch between your saved Performance slots, but also play them in simultaneously in polyphony. To enter **MULTI MODE** and set the amount of Performance slots to be played simultaneously, follow these steps.

1. To enter **MULTI MODE**, click the Perform Voice selector located in the Header until it displays *MULTI MODE*.



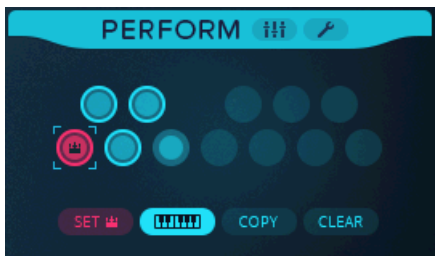
2. To set the number of Sounds saved to Performance slots that can be played back in polyphony, click the Voice Amount button repeatedly until it displays your desired amount of voices: 2, 3, or 4.



→ You are now able to play back as many saved Sounds simultaneously as the amount of voices you selected.

### The Master Slot and the Slave Voices

In **MULTI MODE**, one of your Performance slots serves as Master slot and is depicted as a red slot with a crown icon.



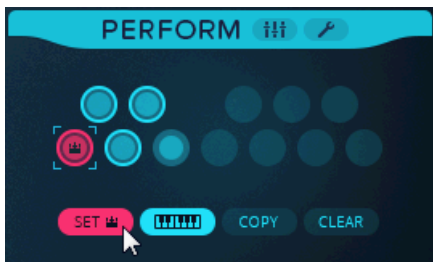
The Master slot is depicted in red

The remaining Slave voices are the Performance slots above the Master slot. If you have not saved enough Performance slots above the Master slot in the octave, the **PERFORM** section will wrap around and play back the Performance slots starting with the lowest key in the octave.

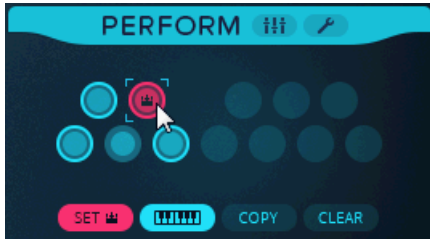
The amount of Performance slots available for editing is limited to the amount of voices set by the Voice Amount button in the Header. A setting of **2** means Master slot and one Slave voice, a setting of **3** means Master slot and two Slave voices, and a setting of **4** means Master slot and three Slave voices. The Performance slots containing a playing voice illuminate, whereas the silent slots remain unilluminated.

If you want to change the Master slot to another Performance slot, follow the instructions below:

1. To enter **SET** mode, click the **SET** button so it glows red.



- Click on a Performance slot to set it as Master slot.



- To exit SET mode, click the SET button again.



With Keyboard mode activated and the SET button engaged, you can also switch the Master slot to another Performance slot by pressing any key in the control octave of your MIDI keyboard.

## 6.4 Macro Controls

The four Macro controls are located at the bottom of the Footer; they are visible at all time. Any parameter that can be assigned as modulation destination cannot only be assigned to the modulators in the [MODULATION](#) section, but also to the Macro controls.



Macro controls

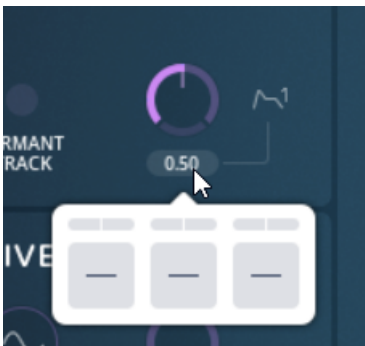
### 6.4.1 Assigning Macro Controls to Modulation Destinations

Each FORM parameter that can be assigned as a modulation destination can also be assigned for Macro control. Each parameter can be assigned to up to three modulators or Macro controls simultaneously. Each knob in the Macro controls can be assigned to control an unlimited amount of distinct parameters.

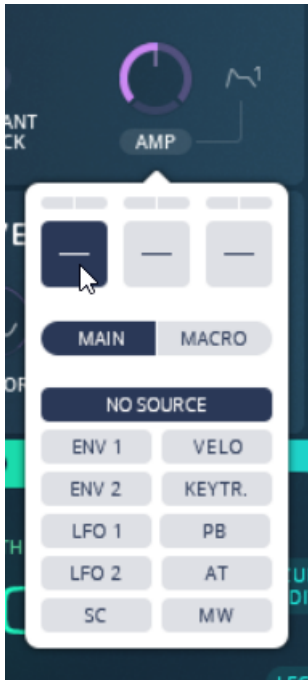
1. To open the modulation assignment menu, click the parameter label directly below the parameter.



The modulation assignment menu will open and display the three modulation slots for the chosen parameter.

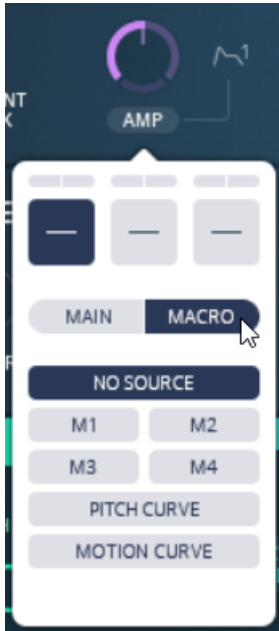


- To select a modulation source, click one of the three modulation slots and the modulation source menu will open.





- To display the Macro controls, click the *MACRO* button.



The four Macro controls are listed as *M1*, *M2*, *M3*, and *M4*.

- To select one of the Macro controls, click the corresponding button.



5. Set the amount of modulation that will be applied by clicking and dragging the modulation depth slider for the selected slot.



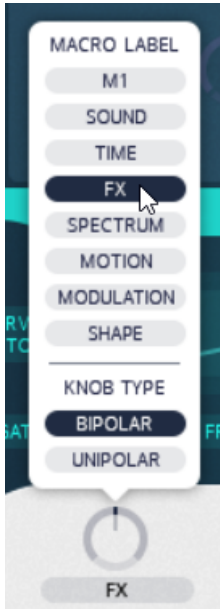
### 6.4.2 The Macro Label Menu

Each Macro control can be labeled via the [MACRO LABEL](#) menu, which lets you select one of eight labels to organize your macros. By labeling your Macro controls, you can, for example, assign a set of effect controls to the same Macro control and then select the label *FX* from the [MACRO LABEL](#) menu. You will then be able to edit all the assigned effect controls simultaneously by turning the Macro control labeled *FX*.

1. To open the **MACRO LABEL** menu, click the label below the Macro control you want to label.



- To select the label, click the label name in the menu.



- The selected label is displayed below the Macro control.



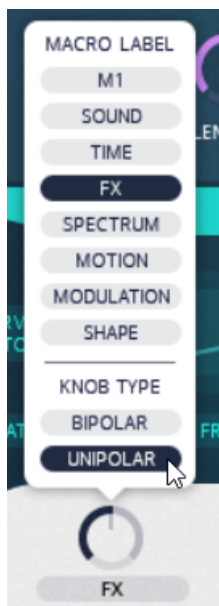
### 6.4.3 Knob Type and Polarity

All Macro controls can be used either as unipolar or bipolar knobs. When used as bipolar knob types, the controls that you have assigned to the Macro will move in either direction from their set levels when you turn the Macro control. When used as unipolar knobs, the assigned controls will only move in the direction that you have assigned them to, using the modulation slider in the modulation menu that appears when you click a control's label.

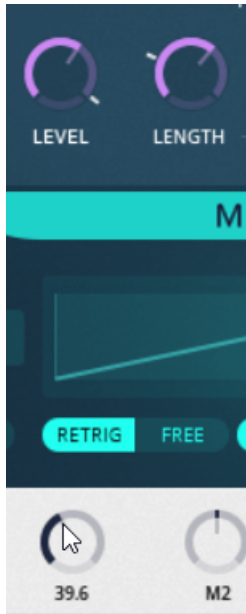
1. To open the **KNOB TYPE** menu, click the label below the Macro control you want to edit.



- To select polarity for the Macro control and all its assigned destinations, click either *BIPOLAR* or *UNIPOLAR*.



→ Turning the Macro control now also moves all assigned destinations in accordance with the set polarity.





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## 7 Credits

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