VALVES

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Software version: 1.0 (01/2023)

2. Welcome to VALVES

VALVES is an expressive brass instrument that places a richly sampled five-piece ensemble at your fingertips. Comprising tuba, euphonium, trombone, french horn and flugelhorn, it uses true legato sampling to achieve incredibly realistic playback articulations and dynamic control. To accurately create the feel and sound of a real ensemble its innovative design allows the playback of full chords while distributing notes dynamically and intelligently to the correct instrument based on their pitch. With each instrument featuring its own independent and fully editable polymetric sequencer, VALVES uses a range of different articulations to convert MIDI input into authentic and natural-sounding brass performances.

In addition, the MOMENTS feature allows each instrument's sequencer track to hold three different variations and all five instruments to play back different variations in combination. A Randomize function provides a quick and easy way to generate new sequences, while the Voice Alternates feature can ensure that instruments swap notes during playback for a more realistic and much less mechanical feel, just like in a real brass ensemble. The powerful mixer section contains a range of insert and send effects for each instrument as well as a Master effects section.

Thanks for choosing VALVES, we hope you enjoy it!

Document Conventions

In this document the following formatting is used to highlight useful information:

Italics	Indicates paths to locations on your hard disk or other storage devices
Bold	Highlights important names, concepts, and software interface elements.
[Brackets]	References keys on a computer's keyboard
►	Single item instructions are represented by a bullet icon.
→	Results in procedures are represented by an arrow icon.

The following three icons represent different types of information:

The **light bulb** icon indicates a useful tip, suggestion, or interesting fact.

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

The **warning** icon alerts you of serious issues and potential risks that require your full attention.

3. Installation and Setup

Before making music with VALVES, you must install and set up the necessary software. Follow these instructions to get started.

Installing via Native Access

Native Access is where you will install the software for VALVES. If you are new to Native Instruments, you will first have to create your Native ID. To learn more about Native Access, visit our support page.

1. Download and install Native Access here.

2. Create a Native ID if you do not yet have one.

3. Login to Native Access using your Native ID.

4. Click the **Not installed** tab.

5. Click **INSTALL** for the following products:

   • VALVES

   • KONTAKT or KONTAKT PLAYER

→ The software is installed automatically.

> (i)   If the software is already installed, click the **Available updates** tab and check for new updates before proceeding.

Loading VALVES in KONTAKT

Once installed, you can start using VALVES in KONTAKT. VALVES is not an independent plug-in, so you first need to open an instance of KONTAKT or KONTAKT PLAYER:

1. Open KONTAKT as a plug-in in your host software (DAW) or as a stand-alone application.

2. Locate VALVES in the Browser, on the left side of the user interface.

3. Click **Instruments** to open the product's content.

4. Double-click the **Valves .nki** file to load the instrument.
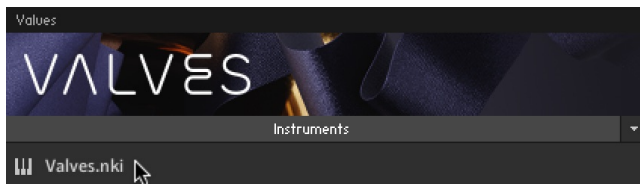
> 🔆   If you are new to KONTAKT and want more information, visit KONTAKT PLAYER and KONTAKT.

4. VALVES Overview

VALVES offers easy access to key parameters and performance controls on its Main page. Additionally, you can tweak and fine-tune effects on the FX page, and customise playback of the five instruments using the articulation sequencers on the Sequencer page.

VALVES contains the following elements:

1. **Preset Browser**: Opens the Preset Browser. For more information, refer to Browser
2. **VALVES Logo**: Click to return to the main page from any section.
3. **Sequencer Page**: Opens the Sequencer page, which enables you to edit the articulation sequences in use by each of the five instruments. For more information, refer to Sequencer Page.
4. **Mixer Page**: Opens the Mixer page, which enables you to change and balance the levels of each of the instruments, and assign insert, send, and master effects. For more information, refer to Mixer Page.
5. **Settings Page**: Opens the Settings page, which enables you to access global controls related to voice handling, pitch bend and tuning, as well as sample loading. For more information, refer to Settings Page.
6. **Main Control Area**: Displays the content of whichever page is selected.
7. **Global Controls**: Set global playback parameters, choose Moments sequencer patterns and alter the dynamics and character of the sound. For more information, refer to Main Page.

5. Playing VALVES

In VALVES you can activate up to five instruments. VALVES will dynamically allocate the MIDI notes that you input to each of the five instruments based on their pitch. The lowest note will be allocated to the tuba, the second lowest to the euphonium, then the trombone and french horn and finally the highest to the flugelhorn. This Smart Voice Assignment divides and arranges your played notes amongst the five instruments, taking into account their natural ranges.

The number of notes played and the number of instruments activated affect the way that VALVES distributes notes to instruments. When you have fewer than five instruments active or play fewer or more than five notes, VALVES interprets the input in the following way.

	1 Instrument	2 Instruments	3 Instruments	4 Instruments	5 Instruments
1 Note	1	1.1	1,1,1	1,1,1,1	1,1,1,1,1
2 Notes	Last note	1.2	1,2,2	1,1,2,2	1,1,2,2,2
3 Notes	Last note	Last 2 notes	1,2,3	1,2,3,3	1,1,2,3,3
4 Notes	Last note	Last 2 notes	Last 3 notes	1,2,3,4	1,2,3,4,4
5 Notes	Last note	Last 2 notes	Last 3 notes	Last 4 notes	1,2,3,4,5

The "last note" in this table represents the last note received by the instrument. Imagine you have two instruments active but play a three note chord. In this case, the last two notes received would be distributed across the two available instruments based on their pitch. Then if you play another note, the oldest note will be discarded and replaced by the new note at the start of the next articulation of the instrument that the note is distributed to.

In another example, if you play a C triad chord and the notes are pressed within a 24 ms window, the C will be distributed to the instrument with the lowest register, then the E to the next one up and the G to the instrument with the highest register. The way VALVES interprets note input is defined by the Voice Detection setting on the Settings page. If notes are played gradually, VALVES interprets this as "1 note" or "2 notes" and will reallocate notes as described above. For more information, refer to Settings Page

> When **True Range** is deactivated and the assigned notes are not part of the natural range of the instrument, they get shifted by an octave until they are in range.

Voice Alternate

VALVES is five-note polyphonic with the five notes being assigned to each of the five instruments. In the Voice Alternate section on the right side of an instrument's track in the Sequencer page you will find a Voice Alternate menu.
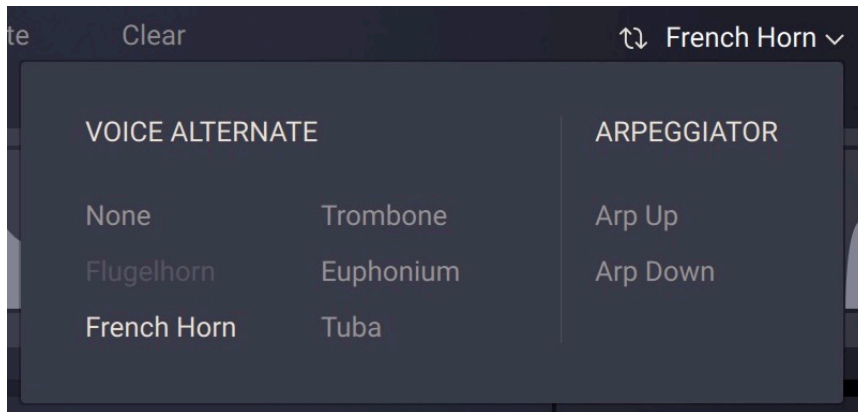
The Voice Alternate section

Here you can assign an instrument with which the currently selected instrument will alternate the pitch it plays. This helps you to achieve a more natural musical style akin to a real brass ensemble. Instead of each instrument playing the same notes it can switch alternate notes with another instrument that you choose.

In the following example, imagine you play five notes like C-E-G-B-D with B and D being the top two notes and have the french horn and flugelhorn set to alternate with each other. This would be the result.

An example of voice alternation

If an instrument has its Voice Alternate set to Arp Up or Arp Down, VALVES takes the chord you play and plays an arpeggio either up or down based on the notes in the chord.

6. Browser

The Browser lets you access VALVES' factory presets. They are all contained within the main VALVES .nki that you initially load in Kontakt. The Browser has five columns. The first four columns are used to filter the presets using tags and the fifth column displays the list of results.

Browser Overview

The Browser contains the following elements:

1. **Preset previous / next**: Loads the previous and next preset from the Results list in the browser.
2. **Preset Name**: Displays the name of the currently loaded preset.
3. **VALVES Logo:** Can be clicked to return to the Main page at any time.
4. **Close**: Closes the Browser.
5. **Presets Results List**: Displays all of VALVES' presets. This list reacts to filter tags that you may have selected. With one or more tags selected the list will show only presets matching those tags.
6. **Favorites**: When clicked, the Favorites icon (Star) marks a preset as a favorite.
7. **Sound Categories**: Displays the available filter tags for refining your search.

Opening and Closing the Browser

To open the Browser:

▶ Click on the Preset selector to the left of the **VALVES Logo**. This can be done from any page in the instrument.

To close the Browser there are several options:

▶ Click on a preset from the Preset list in the Browser to load the preset and then click the x icon at the top right corner to close the Browser.

▶ Click on the **VALVES Logo**.

▶ Click on the Preset selector a second time.

▶ Click on any of the three buttons that lead to the Sequencer, Mixer or Settings pages.

The Preset selector, VALVES logo, and page buttons

Using Favorites in the Browser

The Favorites feature is another way you can tailor your browsing experience in VALVES. They can help to organize your sounds and streamline your preset searching, and can also be useful for collecting all the inspiring sounds that you may encounter as you explore VALVES' extensive sound library.
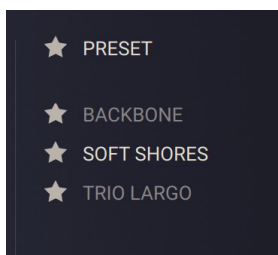
To mark a preset as a Favorite:

1. Open the browser.

2. Click the star icon next to the preset in the Results List.

→ The preset is now marked as a Favorite, indicated by the highlighted star icon.
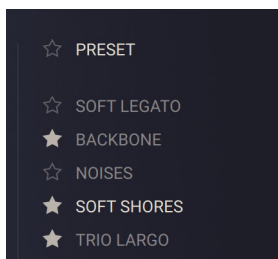
To filter by Favorites:

▶ Click the star icon next to the PRESETS label of the Results list.

→ The Results list now displays all presets marked as Favorites.

Filter Tags

When clicking on any of the tag categories, the results list on the right hand side will update to show only the presets matching those tags. Select multiple tags to refine your search further to match only presets tagged with those characteristics. For example, select a Time Signature of **4/4** and Performance tags **Calm** and **Legato** to display only the presets matching those tags. The available types of tags are described in detail below.

> The Favorites feature ist a special type of filter allowing you to curate a list of your favorite presets. For more information, refer to Using Favorites in the Browser.

Filter tags in the Browser

Section

Selects the kind of ensemble you want to load. **Full Section** shows presets containing all five instruments. **Small Section** shows presets containing less than five instruments.

Time

Choose presets based on the time signatures or tempos used in their sequencers. Time tags include different time signatures like 4/4 and 3/4, as well as different tempi.

> Choose more than one tag to find for example all presets in 3/4 time that are suitable for a faster tempo.

Performance

Selects from the various performance styles that presets employ. Each of the five instruments in a preset can use its own independent sequencer so you can achieve different playback styles. The performance styles cover a range of moods and percussive characteristics.

Sound

Filters presets using the character of their sound. These different characters are a result both of playing styles, the types of instruments layered together and the effects used to process the output. Select more than one tag to show more results.

Snapshots

Snapshots are KONTAKT's underlying file format for instruments presets. They offer a quick and convenient way of browsing for new sounds and saving custom presets. When a User Snapshot is saved, the macro settings, parameter controls, and sequence are also stored within the preset. Using Snapshots, you can create your own preset sounds, save them in the .nksn file format and use them in other projects, across computers or even share them with other users.

Snapshots Overview

Snapshots contain the parameters and controls:

1. **Load Snapshot**: Opens the Snapshot menu where you can load a Snapshot from the **Factory** or **User** library. For more information, refer to Loading a Snapshot.
2. **Snapshot Name**: Displays the name of the currently selected Snapshot.
3. **Snapshot Previous/Next** (<> icons): Allows you to quickly browse and load Snapshots. Pressing an arrow icon will load the previous or next Snapshot in the selected category. If no Snapshot is active, the first Snapshot on the list will be loaded. For more information, refer to Loading a Snapshot.
4. **Save Snapshot** (floppy disk icon): Allows you to save changes made to a sound. When a User Snapshot is saved, the macros settings, parameter controls, and sequence are stored within it and can be accessed at any time via the **User** library. For more information, refer to Saving a User Snapshot.
5. **Delete Snapshot** (bin icon): Deletes the currently selected Snapshot from the **User** library. You can only delete **User** Snapshots and not **Factory** Snapshots. For more information, refer to Deleting a User Snapshot.
6. **Snapshot View** (camera icon): Provides access to the Snapshot features described above; saving, loading, browsing, and deleting. When **Snapshot View** is selected, configuration settings and features relating to the **Info View** are replaced in the display.
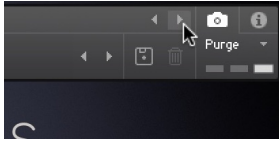
Loading a Snapshot

Snapshots are loaded from the drop-down menu in the top header of the instrument. You can also use the arrows to the left of the floppy disk icon to load the previous or next preset.

To load and browse Snapshots using the arrow icons:

1. Click the Snapshot View (camera icon) to open Snapshot view.

2. Click the arrow icons (<>) in the Snapshot header to browse through the Snapshots list.

→   The previous or next Snapshot will load immediately each time an arrow icon is clicked.

To load a Snapshot from the library:

1. Click the Snapshot View (camera icon) to open Snapshot view.

2. Click the arrow icon next to the Snapshot name field to open the Snapshot menu.

3. Select the **Factory** category to load a Factory preset, or select the **User** category to load one of your own Snapshots.

4. Select an instrument category, if available.

5. Select a Snapshot to load it.
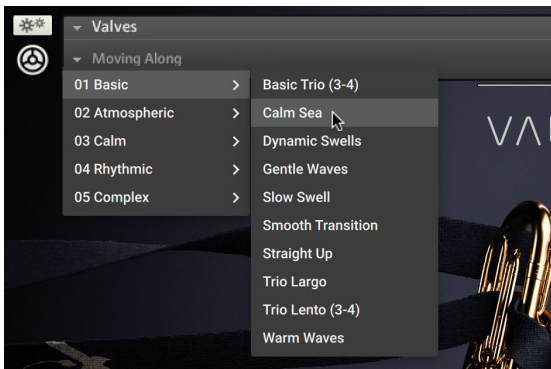
→   The loaded Snapshot is displayed in the instrument header.

> (i)   The **User** category will not appear until you have first saved a Snapshot.

Saving a User Snapshot

Snapshots can be saved at any time while you are working on them. When a Snapshot is saved, all parameters and controls are also saved.

To save a Snapshot:

1. Click the Snapshot View button (camera icon) to open Snapshot view.

2. Click the **Save** button (floppy disk icon).

3. Enter a name for your new Snapshot in the **Save** dialog box.

4. Click **Save** to finish the process and close the dialog box.
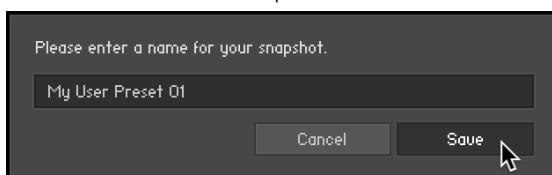
→   Your Snapshot .nksn file is saved to the User Snapshot Library. It appears in the **User** Snapshot list.

To overwrite a Snapshot:

1. Click the Snapshot View button (camera icon) to open Snapshot view.

2. Click the **Save** button (floppy disk icon).

3. Click **Overwrite** to confirm the process.
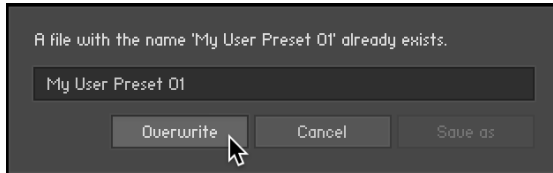
→ Your Snapshot .nksn file is saved to the User Snapshot Library, in replace of the old file.

Deleting a User Snapshot

Snapshots can be deleted using the bin icon in the instrument header. To delete a User Snapshot:

1. Click the Snapshot view (camera icon) to open Snapshot view.

2. Load the User Snapshot you wish to delete.

3. Click the **Delete** button (bin icon).

4. Confirm deletion of the Snapshot by selecting **Yes** in the dialog box.
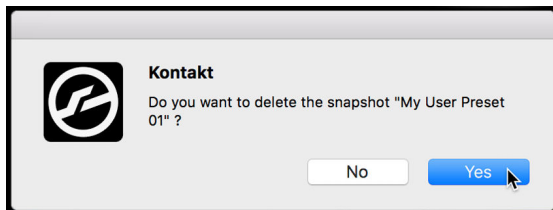
→ The User Snapshot .nksn file is deleted from the User Snapshot Library.

7. Main Page

The Main page features a number of key controls that allow you to quickly adjust the sound and playback. From the Main page, you can also access the Sequencer, Mixer, and Settings pages for more detailed settings. The Main page gives you quick access to the other sections of VALVES though it is not where you make most of the detailed settings for sounds and playback. However it does contain a number of quick controls. The main page contains the following elements:
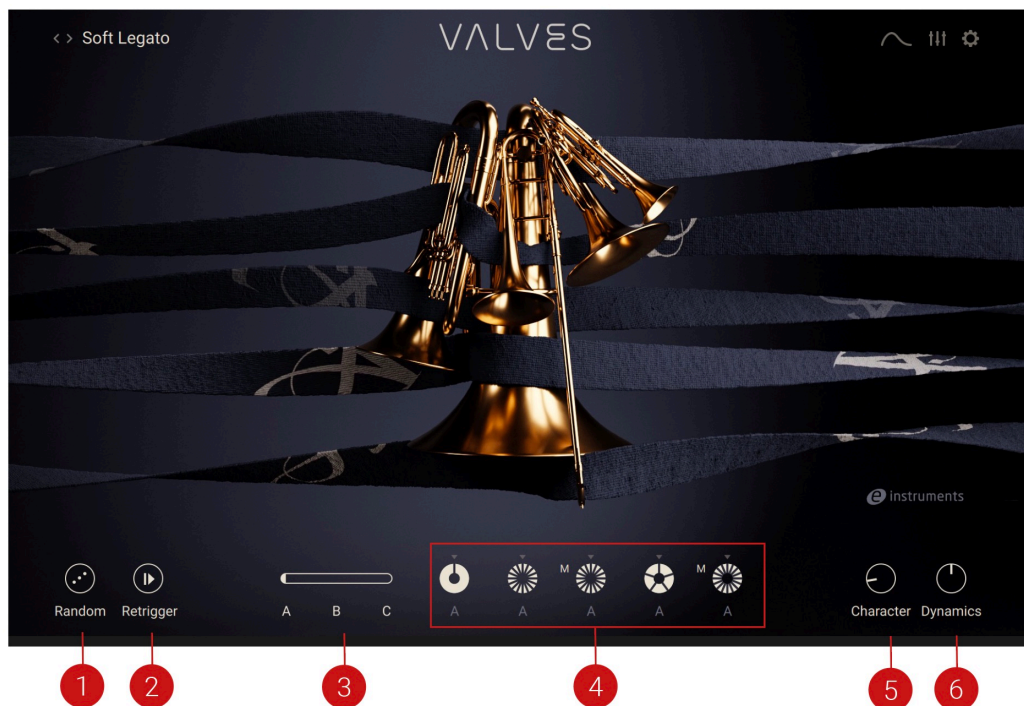

1. **Random**: Creates new settings for each of the five instruments. For more information, refer to Random.
2. **Retrigger**: When Retrigger is active, each key press restarts the sequence of the instrument to which that note is assigned. For more information, refer to Retrigger.
3. **Moments**: Click the A, B or C text or use the slider to switch between each of the three variations available for each of the five instruments. For more information, refer to Moments.
4. **Tracks**: Displays the five instruments and a quick view of their sequencer playback. Each instrument can be soloed, muted, locked or deactivated from here. For more information, refer to Tracks.
5. **Character:** A macro control that alters tone and EQ. For more information, refer to Character.
6. **Dynamics**: Changes the tone and forcefulness of the sound. For more information, refer to Dynamics.

Random

Clicking the **Random** button will create new settings for each of the instruments and the sequencers. This is a useful way to quickly come up with new sounds and patterns without having to make all the settings yourself. New settings will be created for each of the five instruments unless any instrument has been locked in which case it will not be changed.

Moments

Moments represent different sequencer patterns for each of the five instruments. The **Moments** slider can be moved left or right to place patterns A,B or C into the sequencer for each instrument. With the slider fully to the left, each sequencer will use pattern A. As you begin to move it to the right, pattern B will be introduced gradually in ascending order into instruments one to five. With the slider fully at position B, all five instruments will use pattern B. The same applies as you continue to move the slider to the right so that with the slider fully in the C position, all five sequencers will be using pattern C.
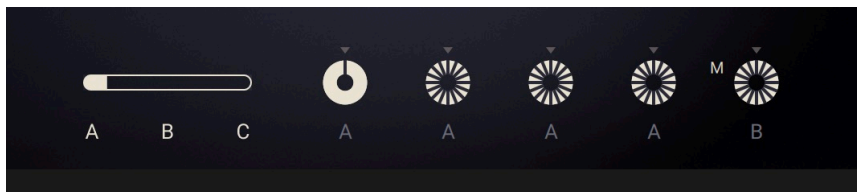

Moments controls in VALVES

The five circle displays show which of the patterns A, B or C are in use by each instrument. The segmented displays also indicate how complex each pattern is. A more solid circle represents a long, held note while a more segmented circle means that more repeated notes are contained in the pattern. The pattern in use for each instrument can be seen in greater detail and edited in the Sequencer page. Although the Moments are pre-set in VALVES you can manually edit any sequence as part of a Moment and it will be saved as part of your snapshot or Kontakt preset.

> 💡 The Moments slider can be automated in a DAW to change sequencer patterns over time.

Tracks

The five tracks represent the five instruments used in VALVES. There are several controls available for each one which appear when you move the mouse over any of the circles.
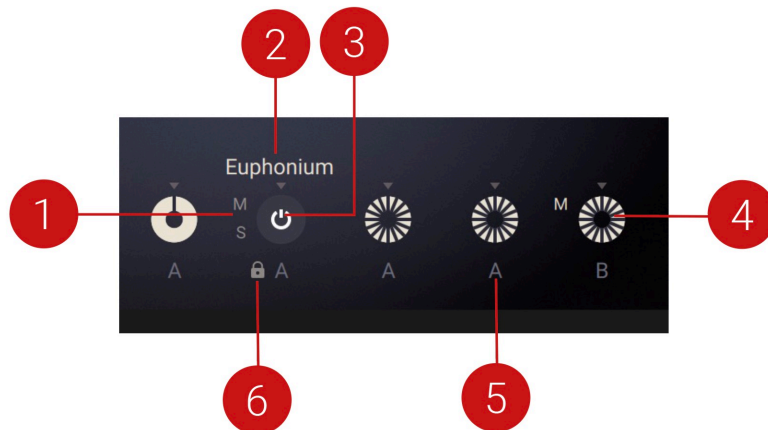
1. **Mute and Solo:** Click M to mute the instrument and S to solo it.
2. **Instrument Name:** The currently selected instrument.
3. **Power Button:** Click to turn an instrument on or off. This is different from muting it because where muting only stops an instrument's sound, turning it off entirely will stop it from having notes distributed to it and thus affect the way that notes are distributed to those instruments which remain active. Deactivating an instrument will also unload the samples from RAM.
4. **Sequencer Overview:** A quick visual representation of the sequencer assigned to the instrument.
5. **Moment Indicator:** The letter A, B or C that appears beneath a circle denotes the Moments pattern that its sequencer is currently using.
6. **Lock:** Prevents the settings of the corresponding instrument from being altered by the Randomize button and the Moments slider. You can use this to preserve the sequencer settings of specific instruments while randomizing others.

Retrigger

When **Retrigger** is deactivated you can play a note to start playback of the instruments' sequencers and when you add more notes, the sequences will continue to play in a loop without restarting. The sequencers are not interrupted by the pressing of new notes.

When **Retrigger** is active however, pressing new notes will restart the sequencers of the instruments to which those notes are assigned based on their pitch. So for example when **Retrigger** is active, you could hold a low note which would be played by the tuba and then introduce a series of higher notes which would be played by the french horn or flugelhorn. As you kept playing new notes in the higher range, the sequences for the french horn and flugelhorn would be restarted with each new key press. The result is a more dynamic performance as the higher instruments play with more variation than simply looping their entire sequence on repeat.

ⓘ The **Retrigger** switch is global and affects all five instruments but it is also based on the note allocation rules in VALVES. When active it will retrigger the sequencers only of those instruments to which the newly played notes get assigned.

Character

Character is a macro control that controls a variety of parameters including EQ and tape saturation. At position zero, the sound is very neutral and as the value is increased, more low and high end is introduced, giving the sound more bite. At the 100 position, more mid range is introduced.

Dynamics

In the sequencer track for an instrument, the articulations are displayed as a series of shapes and waves, with the height of the shape representing the force or softness of its playing. While you can manually drag any articulation's dynamics up or down using the mouse, doing this individually for each articulation if required, the **Dynamics** knob is different.
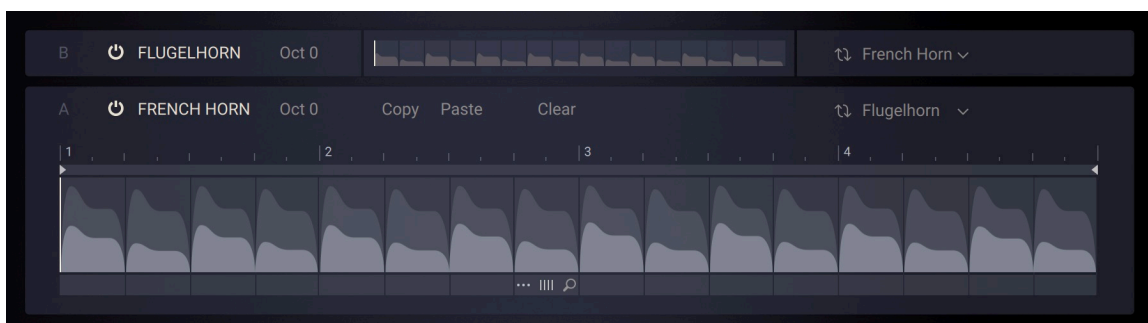
A sequencer in VALVES showing dynamic levels in light and dark grey

It works by increasing or decreasing the dynamics of all of the active instruments' articulations at once. It does this while maintaining their relative differences, so each one gets louder or softer proportionate to its starting value. This means that the whole sequence is changed in a way that sounds natural rather than softer and louder articulations all being equalized to the same level. It's a useful control for changing the playing style to be more forceful or to be softer but without having to change an instrument's volume in the Mixer.

VALVES uses samples that have been recorded at many different dynamic levels so when you alter the dynamics of an instrument in this way it is actually using dedicated samples to provide the louder or softer sound rather than simply changing volume levels. It employs smooth crossfading, moving between the velocity layers in real time to make the transitions seamless and allow you to achieve maximum creative expression. The highest level on the sequencer display represents the loudest samples recorded and the lowest level, the softest.

💡 The **Dynamics** knob can be automated in your DAW to change over time, providing an extra level of control.

8. Sequencer Page

The Sequencer page is where you edit the articulation sequences in use by each of the five instruments. It has the following elements:

1. **Articulation Sequencer**: Displays the instrument's articulations, which can be viewed and edited here.
2. **Instruments**: Lists the five instruments in descended order of pitch.. Click on any track to expand it. Only one track can be expanded at once.
3. **Global Controls Section:** Controls the time base, grid, Hold and note range settings.
4. **Voice Alternates**: Selects which instrument, if any, will alternate its note playback with this track.
5. **Add Articulation**: Opens the Articulations. For more information, refer to Articulations.
6. **Sequencer Tracks Overview:** Provides a quick overview of the sequence playing back in each instrument, available from any page in VALVES.

Global Controls

The Sequencer section has a number of controls that affect all five of the instruments' sequencers and the behaviour of each of the instruments.
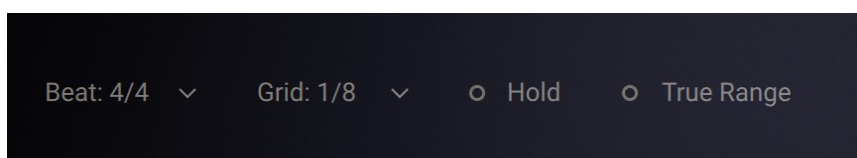

- **Beat**: Sets the time signature for the sequencers. This can be set to 4/4, 3/4 or 6/8 time.

- **Grid:** Sets the snap behaviour of the sequencers' grids. This can be set to 1/4, 1/4 triplet, 1/8, 1/8 triplet or 1/16th of a bar. It determines the snap behaviour of the left and right loop markers in a sequencer and also how blocks of articulation data in the sequencer snap to divisions of bar markers.

- **Hold:** Normally, releasing a note will cause sound to stop playing. The Hold control, when activated, acts like a sustain pedal and will continue any active sequence and play it in a loop until Hold is deactivated. If you play a different note while Hold is activated the sequencer will wait until it encounters the next active block of articulation data before sounding the new note. By default the Hold control is tied to the sustain pedal.

- **True Range:** Each of the five instruments in VALVES has a natural range, a lowest and highest note beyond which it is not possible to play. By default, VALVES lets you play all the instruments across the full range of keys. If however you activate the True Range control, the key range becomes limited to the real ranges of the active instruments. This is reflected by the blue key overlay on Kontakt's keyboard shrinking to show only the real key range available. Notes that you play outside of this range will not sound. The total key range available reflects the number of instruments that are activated so if you turn off the tuba for example you will see the lower end of the key range becomes unavailable. Similarly turning off the flugelhorn will remove some notes from the top end of the key range.

Track Overview

Each instrument's sequencer track can be expanded by clicking on it. Only one track can be shown in expanded view at any one time. Each track has an identical set of controls.
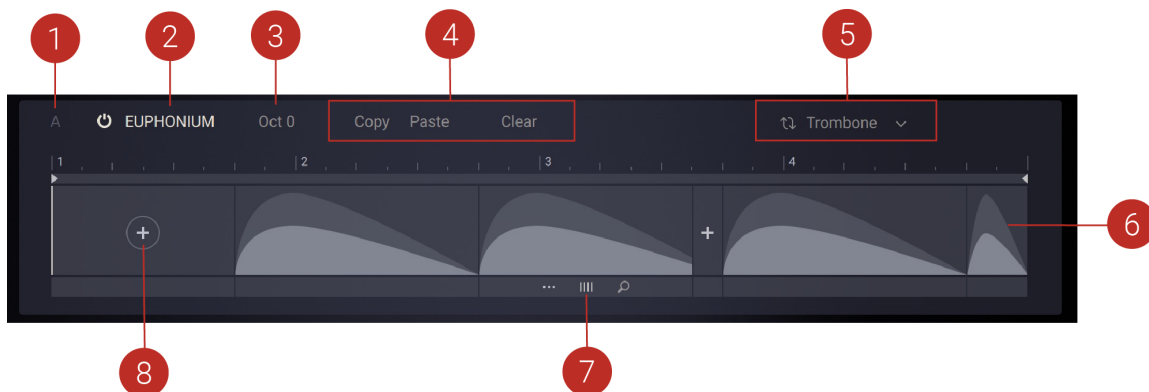

1. **Moment:** Shows which sequencer Moment, A, B or C the track is using.
2. **Instrument On/Off and Name:** Identify the instrument and activate or deactivate it.
3. **Octave control:** Tunes the instrument up or down. Drag the mouse up or down to tune the instrument + or - 2 octaves.
4. **Copy, Paste and Clear Sequencer:** Copies a sequencer lane's articulations and pastes them into another instrument's lane. Clear removes all data from the sequencer lane.
5. **Voice Alternate / Arpeggiator:** Selects an instrument with which this instrument will alternate its pitch during playback.
6. **Articulation Sequencer:** Manages how notes are performed using different playing styles.
7. **Sequencer Operations:** Delete an articulation block, Repeat to fill the whole sequencer with a block. Use the middle handle to drag blocks left or right. The magnifying glass icon opens the articulation browser and lets you choose new articulations for playback.
8. **Add New Articulation:** Opens the Articulations. For more information, refer to Articulations.Opens the Articulations.

Editing Tracks

Each of the five instruments in VALVES has its own sequencer track that contains articulations. The sequencer track for each instrument can be edited to change the way it plays back its articulations.
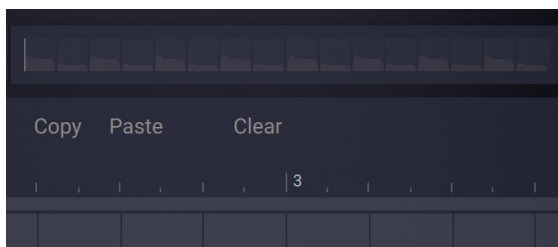
▶ To choose a resolution for the sequencers, use the **Beat** menu at the top left of the Sequencer to set the pattern to 4/4, 3/4 or 6/8 resolution.
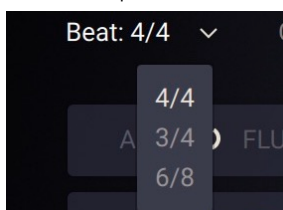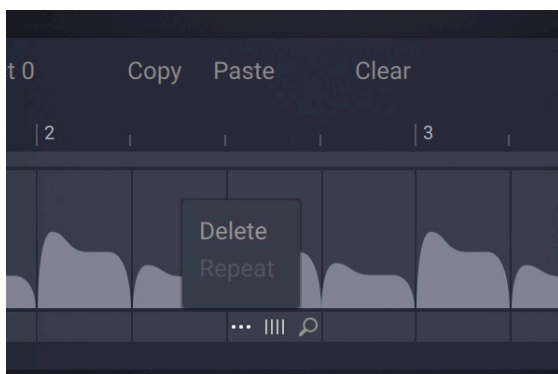

▶ To set the snap value for the sequencers' grid, use the **Grid** menu.
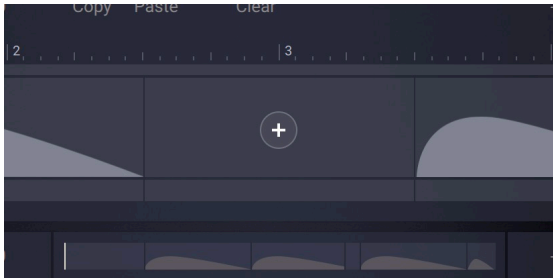

▶ To clear an entire sequencer lane, click the **Clear** button at the top of the sequencer.

▶ To clear an individual block, click the **Delete** command accessible from the lower part of an articulation block.

▶ To add an articulation to an empty block, click on the **+** icon to open the Articulation browser. For more information, refer to Articulations.


💡 A Sequencer does not have to be filled with articulations. An empty block or area simply means no notes will sound at those points.

Locators

The left and right locators govern the length of the loop for a Sequencer track. By moving these around you can set any Sequencer to play a part of the loop rather than the entire loop. This makes VALVES polymetric, since different instruments can play different length loops as part of the same preset. The blocks of articulation data and the locators will snap to a beat grid based on the setting you make in the Grid menu at the top of the Sequencer.

▶ Move the mouse over the left or right edge of any articulation block and drag it to be longer or shorter.
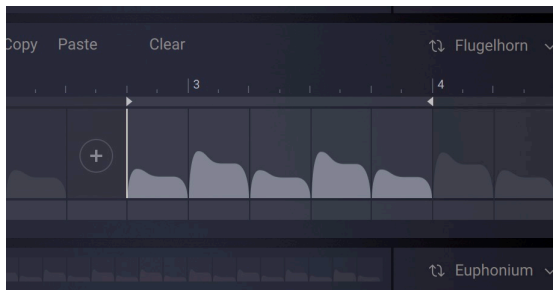
You cannot overlap one block with another so the dragging will stop as soon as it meets another block. Dragging obeys the Beat and Grid settings made in the menus at the top of the Sequencer and these apply to all five sequencers.

💡 If you hold the [Option] (Mac) / [Alt] (Windows) key on your keyboard while dragging the left or right markers in the Sequencer you can temporarily disable snapping, meaning they will no longer snap to beat or bar markers.

Edit Buttons

The edit buttons give you access to additional edit functions as well as the Articulation Browser, which lets you select an Articulation for the corresponding block.

▶ Move the mouse over the lower or central part of any articulation block to reveal its edit buttons.
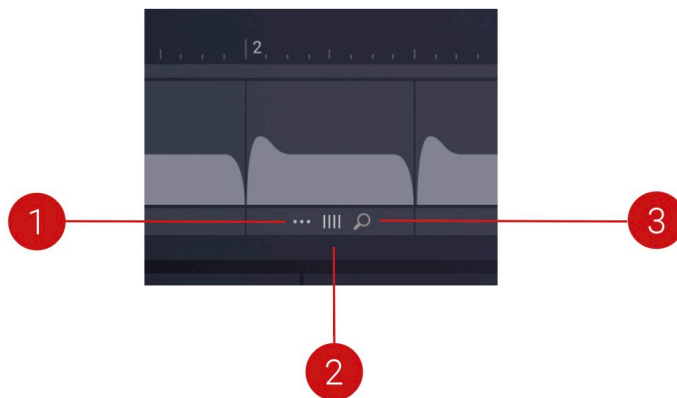
1. The button showing three dots, when clicked, opens a menu that allows you to delete or repeat the current block. Note that when there is insufficient space to repeat the block in the sequencer, the Repeat option will be unavailable.

2. The button showing four solid lines allows you to pick up the articulation and slide it left or right to alter its placement in the sequencer.

3. The magnifying glass button will open the Articulation Browser. For more information, refer to Articulations.

Articulations

Articulations are musical parameters that determine how notes are performed. They determine a note's timbre, dynamics and pitch. In VALVES, all the articulations are created using meticulously sampled performances by real musicians. This includes multiple velocity layers as well as polyphonic legato for sustain articulations and true legato sustain transitions.

In VALVES your MIDI playing is translated into authentic and dynamic-sounding realistic brass performances because simple note input is translated into more complex playing styles as a real brass player would play them. Any Sequencer in VALVES can play back multiple articulations from the selection available, making for dynamic and musical results.

For any instrument's sequencer you can select from seven main types of articulation and from each type, a number of variations. The main articulation categories are:

- Essential
- Crescendo
- Decrescendo
- Swell
- Waves
- Noises
- Motives

Essential

Essential articulations are commonly used and can form the basis for a huge variety of different expressions.
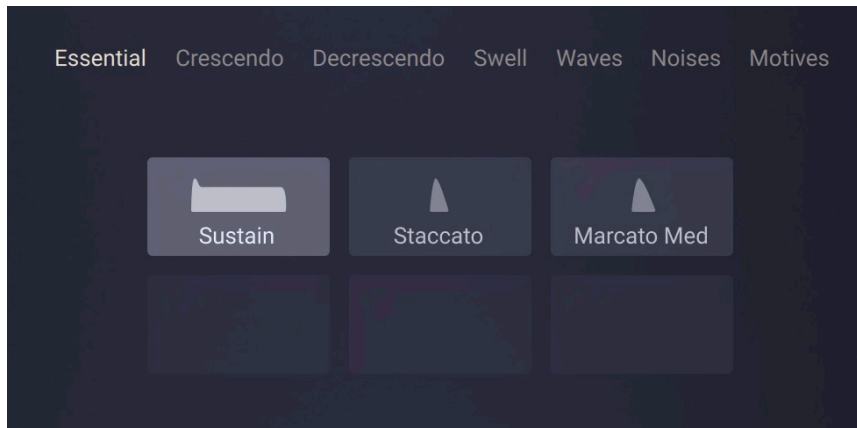
- **Sustain**: The sustain articulation provides long held sustaining notes with a medium attack. This articulation also includes variations for extended realism:
  - Auto tonguing: If a sustained note is held for a very long time (5-6 sec) a new sustain sample with a different attack (created by a short movement of the player's tongue) is automatically triggered. This captures the effect of a brass player quickly breathing in.
  - Manual tonguing: Two consecutive sustain blocks at the same pitch will also provide the tonguing effect.
  - Two consecutive sustain blocks at a different pitch (due to input chord changes or settings in the voice alternate section) provide true legato samples. These samples connect the different pitches via sampled performances of the instruments' intervals, resulting in a realistic transition from one note pitch to the next.
- **Staccato**: An articulation technique characterised by a fast attack and a very short decay, resulting in a detached percussive sound.
- **Marcato Med**: This articulation is similar to **Staccato** but provides a softer attack with a longer decay.

Crescendo

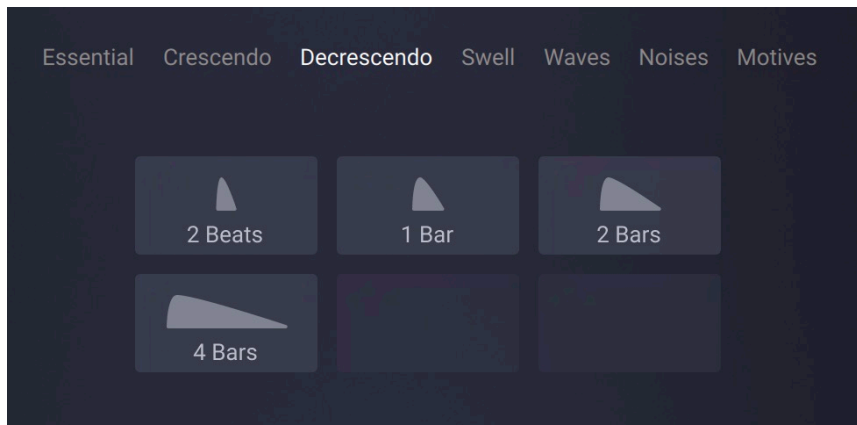Crescendo articulations build slowly to a peak and then diminish quickly.
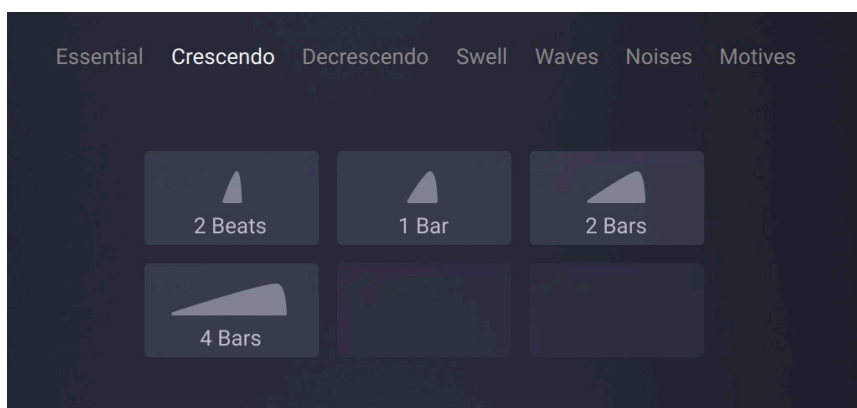
- **2 Beats:** Gradually increases loudness over time. This articulation has a length of two beats and syncs its tempo with your host.
- **1 Bar:** Gradually increases loudness over time. This articulation has a length of one beat and syncs its tempo with your host.
- **2 Bars**: Gradually increases loudness over time. This articulation has a length of two bars and syncs its tempo with your host.

- **4 Bars:** Gradually increases loudness over time. This articulation has a length of four bars and syncs its tempo with your host.

Decrescendo

Decrescendo articulations build quickly to a peak and then diminish more slowly.

- **2 Beats**: Gradually decreases loudness over time. This articulation has a length of two beats and syncs its tempo with your host.
- **1 Bar**: Gradually decreases loudness over time. This articulation has a length of one bar and syncs its tempo with your host.
- **2 Bars**: Gradually decreases loudness over time. This articulation has a length of two bars and syncs its tempo with your host.
- **4 Bars:** Gradually decreases loudness over time. This articulation has a length of four bars and syncs its tempo with your host.

Swell

Swell articulations build to a peak and then diminish over time.
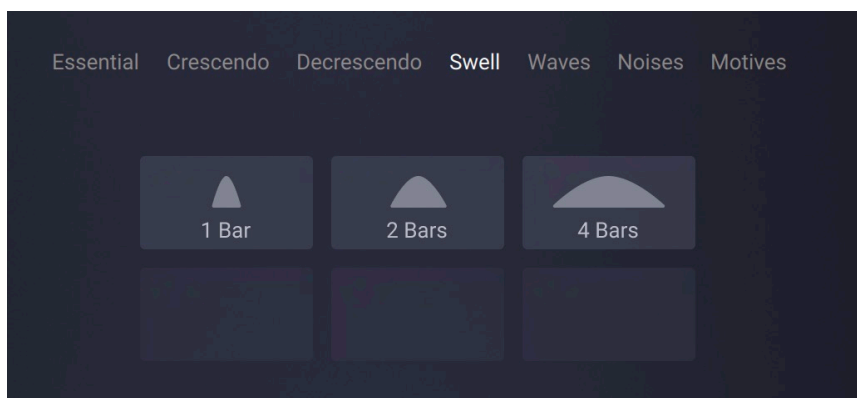
- **1 Bar**: Gradually increases and decreases loudness over time. This articulation has a length of one bar and syncs its tempo with your host.
- **2 Bars**: Gradually increases and decreases loudness over time. This articulation has a length of two bars and syncs its tempo with your host.
- **4 Bars**: Gradually increases and decreases loudness over time. This articulation has a length of four bars and syncs its tempo with your host.

Waves

Waves are unique, long and dynamic rhythmic articulations.
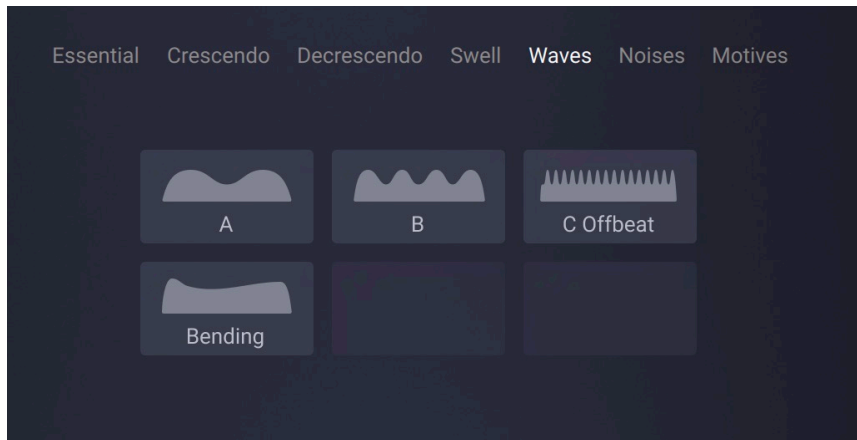
- **Waves A**: A 4 bar long, a two time slow increase and decrease in volume. Creates a slow evolving texture. This articulation syncs its tempo with your host.
- **Waves B**: A 4 bar long, a four time increase and decrease in volume. Creates an evolving rhythmical texture. This articulation syncs its tempo with your host.
- **Waves C**: A 4 bar long, an off beat increase and decrease in volume. Creates a rhythmical texture similar to effects created via side chain compression. However, the waves are actually performed and produce an authentic acoustic brass texture. This articulation syncs its tempo with your host.
- **Bending:** A long sustaining note with performed pitch deviation. Bending provides a unique and expressive pitch texture.

Noises

Noise articulations capture non-pitch noises and effects performed on brass instruments.
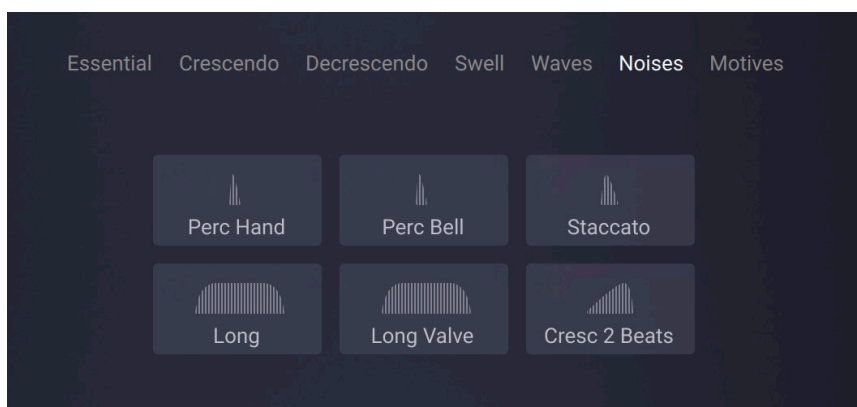
- **Perc Hand**: A percussive sound created by hitting the mouthpiece of the instrument with the hand.
- **Perc Bell**: A percussive sound created by hitting the bell of the instrument with the fingers.
- **Staccato**: A short air flow through the instrument. Similar to the **Staccato** articulation but without pitch.
- **Long**: A long air flow through the instrument. Similar to the **Sustain** articulation but without pitch.

- **Long Valve**: A long air flow through the instrument with additional percussive elements from the movements of the instrument valves.
- **Cresc 2 Beats**: An articulation that gradually increases the loudness of air flow noise over time. This articulation has a length of two beats and syncs its tempo with your host.

Motives

Motives articulations add specific rhythmic gestures to the sequence.
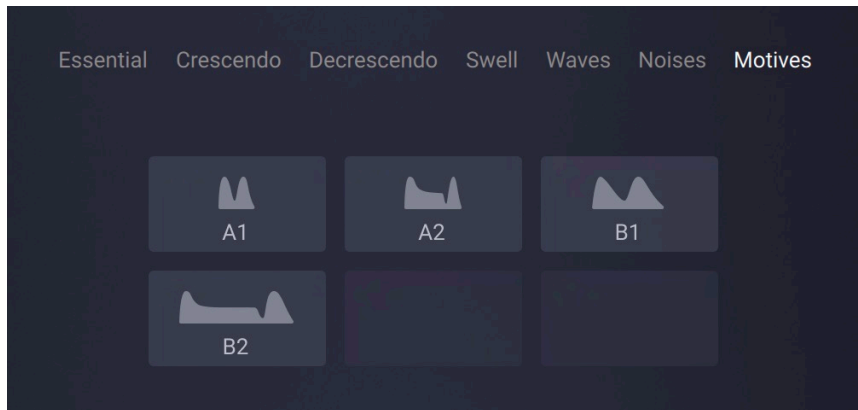
- **A1**: Two 16th notes performed as a rhythmical element. This articulation syncs its tempo with your host.
- **A2**: A dotted 8th note followed by a 16th note performed as a rhythmical element. This articulation syncs its tempo with your host.
- **A3:** Two 8th notes performed as a rhythmical element. This articulation syncs its tempo with your host.
- **A4**: A dotted 4th note followed by an 8th note performed as a rhythmical element. This articulation syncs its tempo with your host.

9. Mixer Page

The Mixer is where you change and balance the levels of each of the instruments and assign insert, send and master effects. It has the following elements:
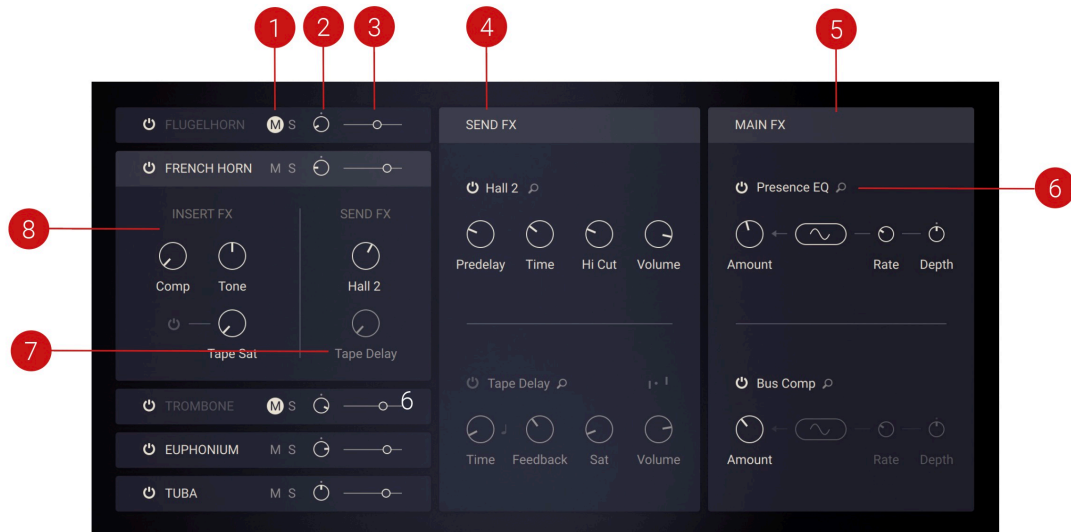
1. **Mute and Solo**: Mute or Solo any instrument.
2. **Pan**: Change the stereo panning of an instrument between left and right sides.
3. **Volume Level**: Set the instrument's volume level.
4. **Send FX**: Activate and control up to two send effects per preset. For more information, refer to Send FX.
5. **Main FX**: Activate and control up to two main effects per preset. For more information, refer to Main FX.
6. **FX Chooser**: Open the effects browser.
7. **Send FX Level**: Adjust the amount of send effect applied to each instrument.
8. **Insert FX**: Adjust parameters related to the insert effects of each instrument. For more information, refer to Insert FX.

Insert FX

The Instrument controls area contains Insert FX controls for each instrument. The three knobs here are actually Macros which means they control several parameters at once. The controls are:
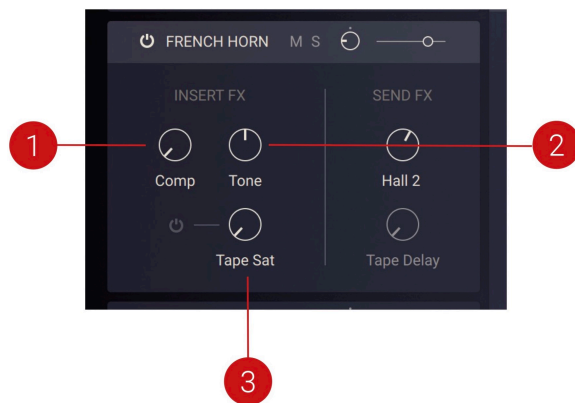
1. **Comp:** Adjusts the amount of compression applied to the instrument. The compression is tailored to the specific instrument.

2. **Tone**: Adjusts a tilt equalizer that is tailored to the specific instrument. When set to center position, the frequency response is flat. Turning the control to the left emphasizes low-frequency content and attenuates high-frequency content. Turning the control to the right emphasizes high-frequency content and attenuates low-frequency content.

3. **Tape Sat**: Adjusts the amount of tape saturation applied to the instrument.

Send FX

Each individual instrument in VALVES can send its output to either of the two available send effects. The Send FX consist of the following controls:
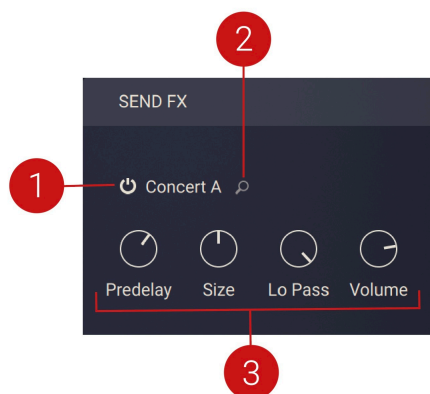
1. **Effect On/Off**: Activates or deactivates the effect.

2. **Send FX Browser**: Opens the Send FX Browser which you can use to select an effect from six categories of echo and reverb effects. The categories include Delay, Room, Hall, Plate, Spring, and Special.

3. **Effect Controls**: The controls are specific to the selected effect and allow you to fine-tune key parameters.

Delay

Send effects in this category provide a set of four parameters, and the additional Stereo option. You can find descriptions of all parameters used in this category below.

Basic Delay Parameters

The following basic parameters are used in all of the effects in the Delay category.

- **Stereo**: When activated, the modulation between the left and the right channel is offset in time, resulting in a wide stereo effect. When deactivated, the modulation affects both channels in the same way. This control is not available for the **Pitch** effect.
- **Time**: Adjusts the delay time in milliseconds. When tempo sync (note icon) is activated, you can set **Time** in note divisions relative to the tempo of your host or Master Editor.
- **Feedback**: Adjusts the level of the signal that is fed back to the delay's input. Increasing Feedback adds delay repeats. Levels above 100% create swelling echo repeats up to self-oscillation.
- **Volume**: Adjusts the output level of the effect.

Additional Delay Parameters

The following additional parameters are specific to particular effects in the Delay category.

- **Depth**: Adjusts the amount of modulation applied to the delay time.
- **Lo Cut**: Cuts low-frequency content in the feedback path of the delay with a non-resonant filter. Turned fully counter-clockwise, the filter is off.
- **Sat**: Adds tube-like saturation at the delay input. Turning it clockwise pushes the sound from subtle warmth to overdrive. Turned fully counter-clockwise, the saturation is bypassed.
- **Flutter:** Increases the effects introduced by mechanical imperfections of the tape delay's motor and tape transport, resulting in pitch variations over time.
- **Modulation**: Sets the depth and speed of modulation applied to the diffusion, shifting the timing and pitch of the reflections for a wide reverb effect.
- **Hi Cut**: Cuts high-frequency content in the feedback path of the delay with a non-resonant filter. Turned fully clockwise, the filter is off.
- **Pitch**: Adjusts the pitch of the echo repeats in the range of -12 to +12 semitones. Combined with feedback you can use this to create progressively harmonized echo cascades.
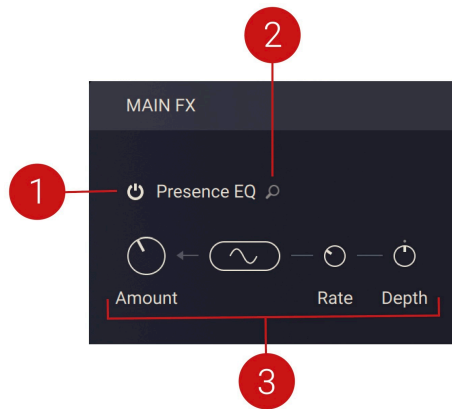
Room, Hall, Plate, Spring, Special

Send effects in these categories provide a set of four parameters. You can find descriptions of all parameters used in these categories below.

- **Predelay**: Introduces a short amount of delay between the direct signal and the convolution output. This is useful when used with reverb responses to simulate the reverberation of big rooms, where a short delay occurs between the direct sound and the first reflections from distant walls.
- **Size**: Artificially compresses or stretches the impulse response in time.
- **Time:** Adjusts the duration of the reverb effect.
- **Lo Pass**: Adjusts the cutoff frequency above which the signal's frequency content will be attenuated.
- **Hi Cut**: Cuts the high-frequency content of the reverb signal.
- **Volume**: Adjusts the output level of the effect.

Main FX

The mix of all individual instruments can be processed using two main effects. The Main FX consist of the following controls:

1. **Effect On/Off**: Activates or deactivates the effect.
2. **Main FX Browser**: Opens the Main FX Browser which you can use to select an effect from six available categories, including Filter, Equalizer, Saturation, Modulation, Compression, Utility.
3. **Effect Controls**: The controls are specific to the selected effect and allow you to fine-tune key parameters.

Filter

Main effects in this category provide a set of four parameters. You can find descriptions of all parameters used in this category below.

- **Amount**: Adjusts the cutoff frequency of the filter.
- **Modulation Wave Selector**: Selects the waveform of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.
- **Rate**: Adjusts the speed of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.
- **Depth**: Adjusts the strength of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.

Equalizer

Main effects in this category provide a set of four parameters. You can find descriptions of all parameters used in this category below.

- **Amount**: Adjusts the gain of the equalizer.
- **Modulation Wave Selector**: Selects the waveform of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.
- **Rate**: Adjusts the speed of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.
- **Depth**: Adjusts the strength of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.

Saturation, Modulation, Compression, Utility

Main effects in these categories provide a set of four parameters. You can find descriptions of all parameters used in these categories below.

- **Amount**: Adjusts the intensity of the effect.
- **Modulation Wave Selector**: Selects the waveform of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.
- **Rate**: Adjusts the speed of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.
- **Depth**: Adjusts the strength of the LFO (low-frequency oscillator) modulation applied to the **Amount** control.

ⓘ   The modulation controls are not available for effects in the **Compression** category.

10. Settings Page

The Settings page is where you access global controls related to voice handling, pitch bend and tuning, as well as sample loading. The Settings page contains the following controls:
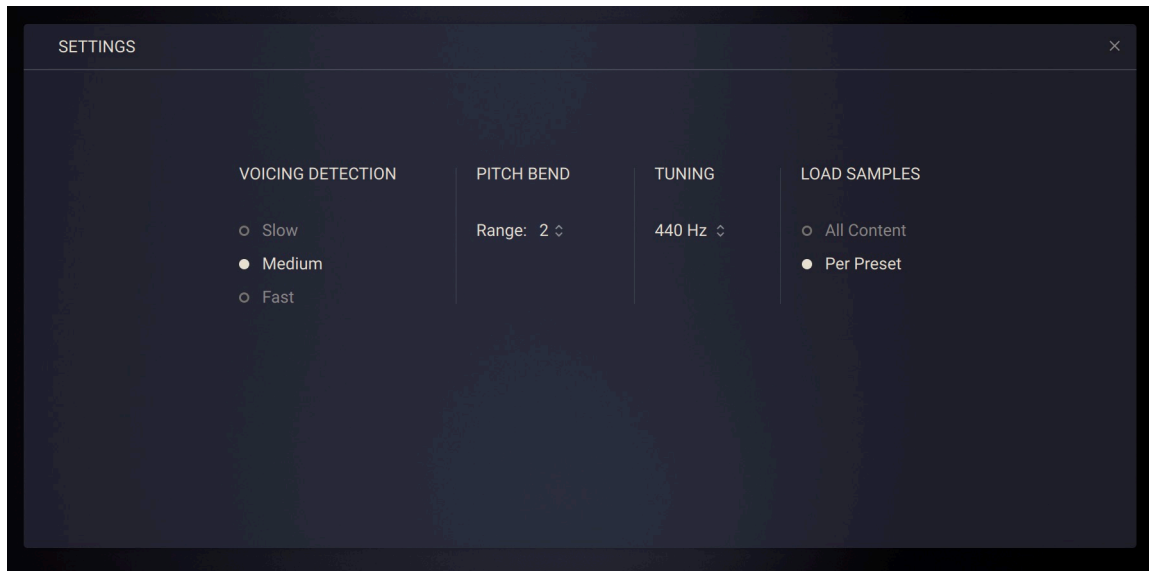
1. **Voicing Detection:** Determines how quickly VALVES interprets note input when detecting chords for the purpose of distributing the notes across the five instruments. The SLOW setting will accommodate less precise playing by registering a chord even when notes are not all pressed at exactly the same instant. The FAST setting requires chords to be played more accurately. Adjust this to suit your style of playing. The three timing options correspond to Slow = 24ms, Medium = 12ms and Fast = 1ms. The Fast setting is particularly suited to playing back quantized MIDI chords in your host with a minimum amount of latency.

2. **Pitch Bend:** Sets the behaviour of the Pitch Bend wheel anywhere from one to seven semitones. This can be used to create effects from subtle vibrato to more extreme swoops.

3. **Tuning:** Set the tuning of VALVES anywhere from 420Hz to 460Hz. Concert pitch and the VALVES default setting is 440Hz but you can change this if for example you need to match the pitch of other orchestral instruments or recordings which may not be at concert pitch.

4. **Load Samples:** Choose how VALVES loads its samples. On a computer with more RAM you might want to choose to load All Content as this means it is faster to switch between presets. On a computer with less RAM you could choose Per Preset to load only the samples required by that preset. When you then change presets, the instrument will load only the samples needed for that preset.

11. Credits

e-Instruments: Thomas Koritke, Till Weinrich, Lars Dahlke, Ivo Sloman, Andreas Rogge, Sascha Haske, Dr. Florian Pfeifle, Martin Bartsch, Martin von Frantzius, Iain Horrocks, Alexander Paprotny, Jan-Peter Klöpfel, Jonas Schoen-Philbert, Ruben Seevers, Hans-Christian Stephan, Michael Gentner, Andreas Barzyk, Johannes Marguerre, Axel Reinemer, Johannes Böhmer, Abigail Sanders, Otwin Zipp, Louise Oakes, Matthew Bookert, Mateusz Dudek, Jan Kaiser, Friedrich Milz, Gerald Meier, Sören Fischer, Arturo Pantaleón

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