ZVORK

ST100

STRUMMING MACHINE

Re
Rack Extension

User Manual

version 1.0.1

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First Glance

The **ST100** Strumming Machine is a Player device that lets you play guitar strum-like note patterns on any Reason compatible instrument (Native, Rack Extension or VST).

Multi-Step Pattern Sequencer

Strum patterns are edited through a multi-step pattern sequencer, with up to 64 steps per pattern. The ST100 can store 4 patterns that can be activated at any given time, including during playback. Each pattern has independent controls for step count and step length. All other controls (unless noted otherwise) are global for all patterns.

Strum Parameters

Strumming can be adjusted live with high level timing and velocity parameters.

Modulation

All front panel knobs and buttons can be automated, including pattern selection. Back panel CV connections can also be used to modulate major parameters with Reason's Control Voltage system.

Patches

The ST100 comes with some handy patches in different styles to start playing right away without prior pattern programming. A ST100 patch contains settings for all four patterns.

Front Panel
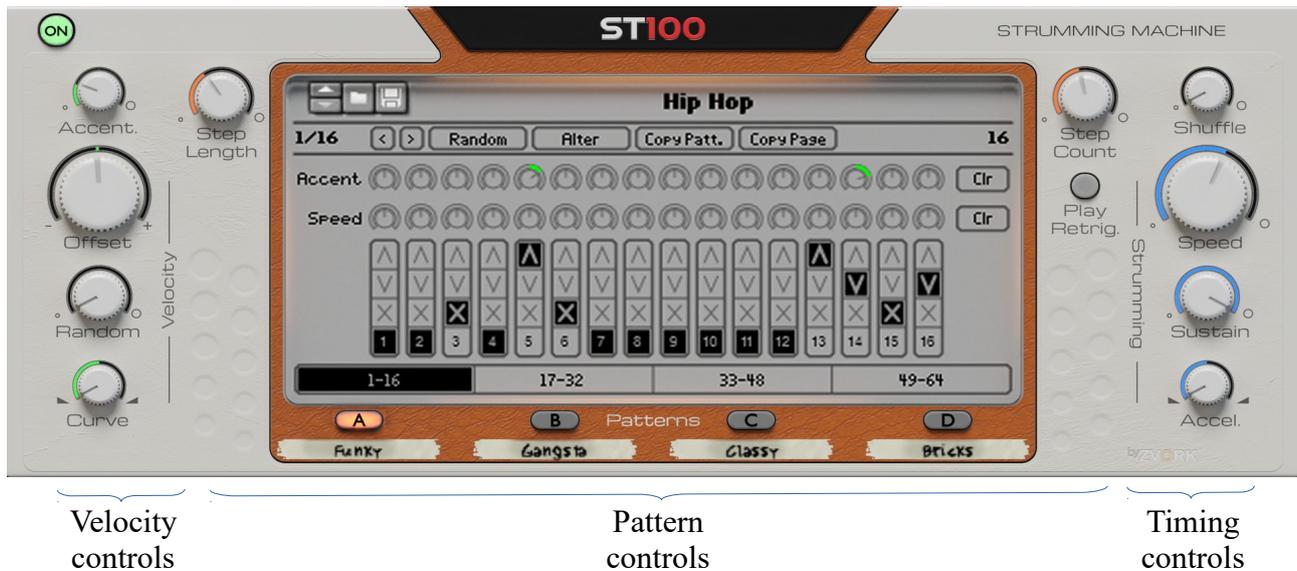
Velocity controls   Pattern controls   Timing controls

Standard controls

The ST100, as any Player device can be turned on or off. When turned off, notes are sent directly to the instrument or the following player without any alterations.

The ST100 supports patches and patch selection and name display lie at the top of the central display.

Pattern controls

At the center of the ST100's front panel lies a central display with the current pattern steps displayed. Around this display are all the controls to switch from one pattern to another, edit pattern steps and edit the current pattern's global parameters like step count and step length.

Pattern selection

Underneath the pattern display lie four buttons labeled "A", "B", "C" and "D" which correspond to each 4 patterns the ST100 can handle at any given time. Switching from one pattern to another is just a matter of clicking on the corresponding button. The active pattern is used for playback and edition.

Page selection

Above these four "A/B/C/D" buttons lie four other buttons in the central display zone, labeled with ranges "1-16", "17-32", "33-48" and "49-64". These are used to visualize the steps numbered with the corresponding range and each 16 step range is referred to as a "Pattern Page". Steps that are out of the scope of the number of steps for that pattern are displayed in grey.

Programming Patterns

Global parameters

Each step has an individual step count (from 1 to 64) and step length. Step counts are defined through the "Step Count" knob at the upper right of the central display, while step lengths are modified throught the "Step Length" knob at the upper left. Numerical values for these parameters are displayed in the central display on the respective sides.

Step programming

Patterns are programmed step by step, with each step defined by three parameters, from top to bottom:

- The accent modulation for that strum (positive to the left and negative to the right – see global Accent knob),

- The speed modulation at which this strum should be played (positive to the left and negative to the right – see global Speed knob),

- The type of strum: up-strokes, down-strokes or mutes.

Play an upward stroke for that step, starting with the lowest pitch note	Play a downward stroke, starting with the highest pitch note	Mute all played notes at this step	Do nothing and just let all previous notes play, up to the sustain duration

Resetting to default

For the "Accent" and "Speed" parameters, values for all steps can be reset to the default value individually by left-cliking on the step's respective parameter knob while holding down the Ctrl / Cmd button down, or all steps at once by clicking on the "Clr" buttons at the far right of the parameter line.

Global editing

At the top of the central display, just underneath the patch browsing button, lie a number of buttons to edit the pattern globally. From left to right:

- "<": shift the pattern one step to the left,

- ">": shift the pattern one step to the right,

- "Random": fill the pattern with random values on all three parameters, keeping the same number of steps,

- "Alter": slightly randomly alters the pattern instead of completely creating a new random one like the previous function,

- "Copy pattern": copy the current pattern steps to a clipboard. A new button labeled "Paste pattern" appears to the right,

- "Copy page": copy the current pattern page steps to a clipboard. A new button labeled "Paste page" appears to the right,

- "Paste pattern": paste the content of the pattern clipboard to the current pattern, replacing previous steps and step count,

- "Paste page": paste the content of the pattern clipboard to the current pattern page, replacing previous steps for that page range but leaving the step count intact.

Page editing

The "Random" and "Alter" functions can also be applied only to the current pattern page, instead of the entire pattern, by holding the "Alt" key on your keyboard while clicking on the respective buttons.

Pattern Automation

The active pattern index can be automated inside the Reason sequencer. Simply right click on any of the 4 pattern selection buttons and choose "Edit Automation" or create a track for the ST100 and click on the "Create Pattern Lane" button in the sequencer.
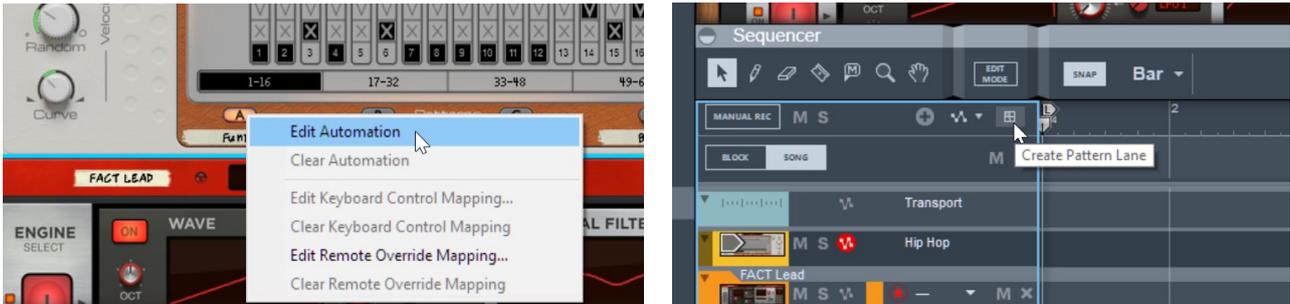
Then simply draw your active pattern clips with the pencil tool. Since only 4 patterns are available, choose from patterns A1 to A4. When the sequencer play position reaches a time position with no pattern clip, the ST100 will stop all started strums.
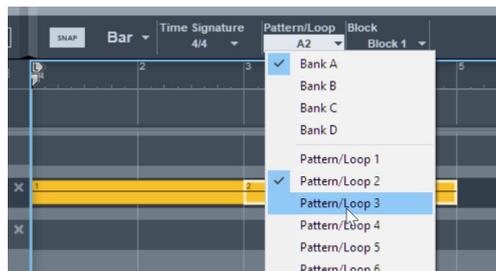
Velocity Controls

A strum, like arpegios, is made up of a series of notes played from high pitch notes to low pitch notes (or in reverse order for upward strokes). The initial velocity of a note is the velocity as received by the ST100, either from your keyboard, sequencer or a previous player. The velocity of each of these notes of a strum can be adjusted with four parameters, from top to bottom:

- Accentuation: determines the amount of velocity modulation, as programmed in a pattern. If accentuation is zero, even if a pattern contains accent values, all strums will be played at the same velocity. To have the full velocity dynamic of a pattern, set the accentuation to 100%.

- Offset: this adds or removes a velocity offset to the incoming velocity.

- Random: this adds random velocity fluctuations to each strum note. This modulation is different each time a new strum is played.

- Curve: this controls the velocity offset between first and last notes of a strum. When set fully to the left, first notes have higher velocities while when set fully to the right, last notes have the highest velocity.

Timing controls

Timing controls adjust the timing of notes inside a strum but also the shuffle value for the ST100. From top to bottom, the control are:

- Shuffle: like in a Reason, the shuffle parameter lets you play your patterns normally or with a slight fluctuation of timing in between steps.

- Speed: this controls the speed of a strum. With high speed strums, each strum note is played one after another with almost any delay while low speed strums sound like arpeggios with each strum note clearly detached from the preceding one.

- Sustain: this sets the maximum sustain duration of each strum note.

- Acceleration: this determines if the strum speed should remain constant inside a strum or should accelerate / decelerate. When set fully to the left, strums are decelerating and first strum notes are played rapidly in sequence while last strum notes are more detached. When set fully to the right, this is the contrary as first strum notes are played like arpeggios followed by tighter and tighter last notes.

Play position trigger behavior

Starting with version 1.0.1, the ST100 can reset the play position to the start of a pattern each time all keys are released, even when Reason's internal sequencer is playing. In this mode, the internal sequencer won't follow the Reason's play position anymore, although it will track any tempo changes.

To activate this mode, press the "Play Retrig" button underneath the "Step Count" knob. It is enabled when it is lit. To revert to the default mode, just press the button again.

Back Panel
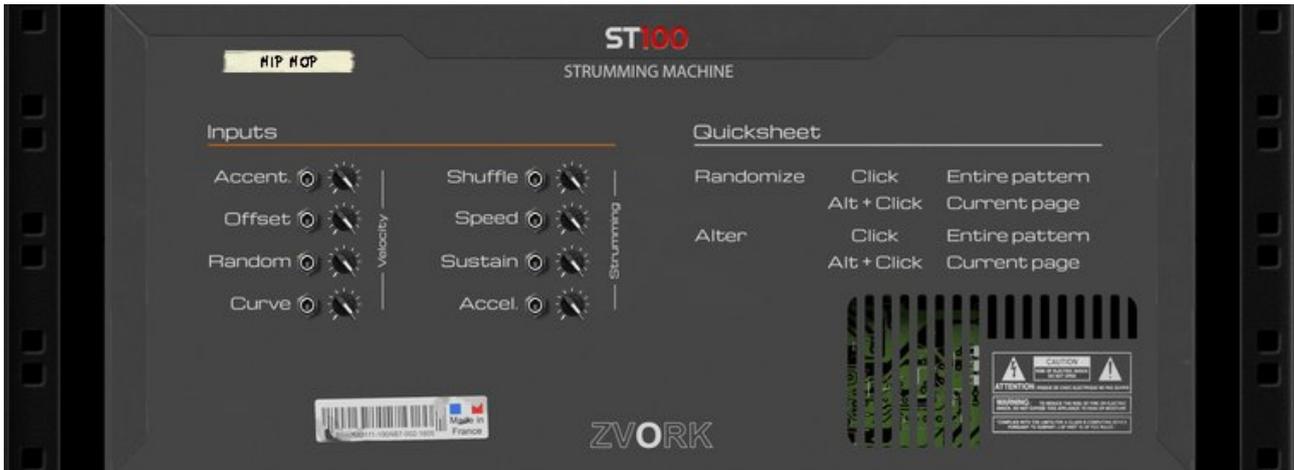
The back panel exposes the input / output CV and audio output sockets.

CV Inputs

Some of the ST100's parameters can have their values modulated by control voltage signals coming from other devices. Trim knobs let you control the amplitude of the modulation. The all correspond to the corresponding knob controlled parameters visible on the front panel.

MIDI Implementation Chart

MIDI Controller #	Parameter
4 / 5 / 7 / 8	Pattern A / B / C / D Step Count
10 / 12 / 13 / 14	Pattern A / B / C / D Step Length
15	Velocity Offset
16	Velocity Random
17	Accentuation
18	Velocity Curve
19	Strumming Speed
20	Strumming Sustain Length
21	Strumming Acceleration
22	Shuffle
23	On
24	Play Position Retrigger

Remote Map Template

Scope	Zvork	fr.zvork.ST100
//Map	_control_	Pattern Page
//Map	_control_	A - Step Count
//Map	_control_	B - Step Count
//Map	_control_	C - Step Count
//Map	_control_	D - Step Count
//Map	_control_	A - Step Length
//Map	_control_	B - Step Length
//Map	_control_	C - Step Length
//Map	_control_	D - Step Length
//Map	_control_	Velocity Offset
//Map	_control_	Velocity Random
//Map	_control_	Accentuation
//Map	_control_	Velocity Curve
//Map	_control_	Strumming Speed
//Map	_control_	Strumming Sustain Length
//Map	_control_	Strumming Acceleration
//Map	_control_	Shuffle
//Map	_control_	On
//Map	_control_	Play Pos. Retrigger

More information at http://www.zvork.fr/audio