

# VEASY

## ReArranger CV Randomizer

### Operation Manual

Version 2.0.0



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# Introduction

Thank you for your interest in the ReArranger CV Randomizer!  
In this manual the features and functions of the device are explained.

## Function

The ReArranger CV Randomizer is a Rack Extension Utility for Reason. It tests whether Note and/or Gate input (CV and/or MIDI) is in range and above threshold. If so, it applies changes to the input values and outputs those values at Out 1. If not, the input is sent unaltered to Out 2. The operation of the device can be interpreted as an if-then-else statement made in programmers code.

## Features

The ReArranger is optimally coded with maximum speed and usability in mind. For example internally it's programmed to use Switch statements instead of If-Then-Else statements which are much faster. The overhead for your processor is very low and it's possible to chain lots of instances! In the examples you can see and hear 49 of them working with 49 NN-XTs perfectly and that is not the limit!

Incoming Note and Gate values are shown in displays accompanied with blinking green LEDs. The incoming Note and Gate values can be changed in numerous ways, the outcome is predictable, can be set exact and is also shown in separate displays (Out 1 / Out 2) and accompanied with blinking colored LEDs to inform you about the operation of the device and to give you full control. You will always know what results to expect even when outputting Random values.

Cable connections are shown with colored LEDs and indicators; red means no connection, green means connection established. Also when the device is in folded state you will be informed about the operation of the device with corresponding colored LEDs.

When values are tested against settings an indicator in the display will light up to inform you if it passes the test. Red means it didn't pass, green means it passed. When there is no input they are grayed out.

Ranges can start with the highest note or the lowest note in the range, internally the operation stays the same. Also the Min and Max values can be swapped, the results remain the same.

All controls can be set exact, with the cursor and consistent with the Reason standards. The notes in Ranges can be set by use of a drop down menu in which the notes are ordered by name and then by octave.

All controls can be reset the Reason way by CTRL-clicking and values can be changed precisely by holding SHIFT while dragging.

A newly added device as well as 'Reset device' will set the device in a state where all incoming input is outputted exactly the same as it came in to Out 1, so the original flow of Note and Gate values remains without being changed.

All CV input and output jacks are located exactly behind the corresponding Front Panel displays. So when you hold the cursor on a display you want to connect and hit 'TAB' to flip the rack, your cursor is directly located in the right spot. Also the naming label of the device stays in the same spot in all possible states of the device.

ReArrangers can be chained so there is no need for mergers or splitters. Just connect the CV jacks on the back from Out 2 to the next CV In jacks in the chain. Because the values at Out 2 are the unaltered incoming values, the next device in the chain will start over just the same as the previous device, so the settings work exactly the same.

ReArrangers can be bypassed and still the next ones in the chain get their input. A whole chain can also be blocked anywhere in the chain.

ReArrangers also respond to MIDI input and can handle MIDI and CV input simultaneously, directly from a MIDI source like a keyboard, but also inside a Combinator when 'Receive Notes' is selected. When this turns out to be an undesired effect MIDI input can be blocked. Also CV input can be blocked so only MIDI is handled.

All settings on the device are fully automatable. See the Automation section for all possibilities.

Starting point patches are available. Of course you can also save your settings as a patch.

## **Video Manual, Examples and Tutorials**

This manual is also available as a Video Manual and other examples and tutorials can be found at <https://veasy.nl/#ReArranger>.

## **Intentional use**

The ReArranger CV Randomizer is intentionally created to make multi sample (and multi mic'd) samplers in conjunction with the NN-XT Advanced Sampler. The ReArranger makes it possible to randomly choose from several user-recorded samples inside the NN-XT. This way the resulting sound will be slightly different every time the NN-XT gets a pulse and will sound more natural and live than when the same sample is played over and over. A tutorial of how to make your own multi sampled, multi mic'd instruments is given in the Bell Example video: .....

Because the bell is now played in its own track it can be manipulated by effects on its own; see the Xylophone Example where the lower notes are played through a RV7000 plate that has the high frequencies equalized out and the higher notes have the low frequencies equalized out. This way it's possible to make the perfect instrument!

You can also insert a ReArranger as a Gate Deviator, Gate Limiter or Gate Threshold device. See the included patches to get you started.

You can also use the ReArranger as a Note / Gate CV analyzer.

But of course you can use the ReArranger in any way you see fit and use it in your creative workflow any way you like!

## **Location in Reason**

You can find the ReArranger CV Randomizer by selecting 'Utilities' in the Browser or 'Add device' in the rack. Then navigate to 'Veasy' and select, double click or drag the ReArranger into the rack.

## **Updates 2.0.0**

Due to a bug in the numbering of Note Number values (thanks Teflon Tomb) a new version of the ReArranger had to be made. If you own a version prior to version 2.0.0 please send an e-mail to [support@veasy.nl](mailto:support@veasy.nl) and you'll be upgraded free of charge. Apologies for any inconvenience! You're still able to use version 1.0.1 though.

Added 'Hold Values' functionality (thanks Teflon Tomb).

## **Updates 1.0.1**

Input CV and MIDI LEDS coloring correct when Mode and/or Input Selection is/are changed.

Added French and German languages.

## **Questions / feature requests / bugs**

When you have any questions or feature requests or you want to report a bug, please send an email to [support@veasy.nl](mailto:support@veasy.nl).

# Front Panel



## Hold Values



Toggle button that, when pressed, will hold all Output Values in the displays. When not pressed the values will be reset to "--" after a short while.

## Device Label



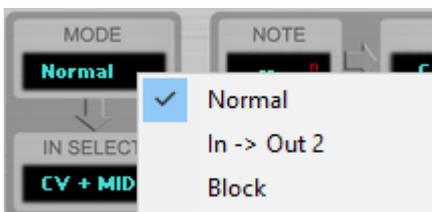
Label to name the device for your convenience. This is also the name that shows up in the Programmer of a Combinator. By setting the label caption on the Front Panel it changes automatically on all panels and vice versa.

## Patch Browser



Standard Patch Browser with display and Previous / Next / Folder / Save functionality. Starting point patches are added and can be found in the Browser under 'Rack Extensions / ReArranger CV Randomizer'.

## Mode



### Normal

Input and output will be handled as represented in the introduction.

### In => Out 2

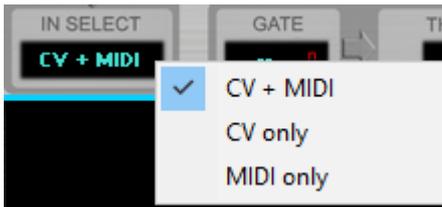
All input will be outputted unaltered at Out 2. All normal settings will be bypassed.

### Block

All input will be blocked, no output available at Out 1 and Out 2.



## In Select



## CV + MIDI

Both CV and MIDI input will be handled simultaneously.

## CV Only

Only CV input will be handled.

## MIDI Only

Only MIDI input will be handled.

## Note Values



In this row all note values are handled.

## Note



Shows incoming Note values. When no input is available the display will show two dashes (--). When input is available it will show the MIDI note value for a short duration. The duration is the same for short and long incoming notes and will be overwritten by the next incoming note. The red Not Connected (NC) indicator in the display notifies whether the CV cable on the back panel is connected or not. When the cable is not connected the indicator is shown, when the cable is connected the indicator is not shown in the display.

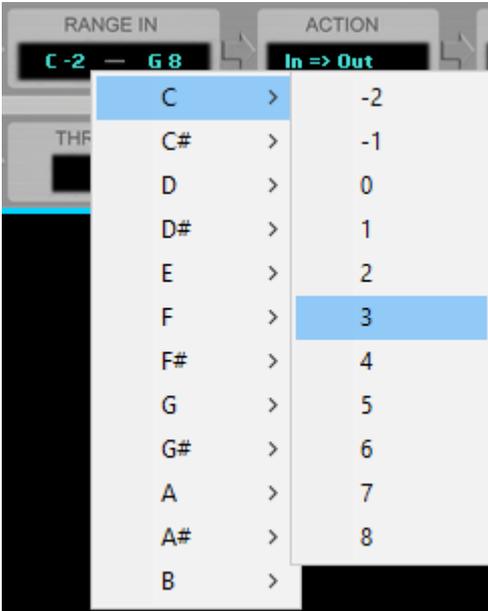
When only the Gate CV In jack is connected on the back panel, the Note Value is automatically substituted by C3 to maintain the note/gate flow.

When CV cables (only Note or Gate or both Note and Gate) are connected, the CV LED turns dimmed green and will light up green when input is detected. The Midi LED will light up green when MIDI input is detected.

## Range In



Value A and B can be altered to any note in the MIDI range (C -2 to G8), by clicking the display and selecting a value from the dropdown menu.



Set Value A and B to the same value to set a range of one note.

Value A and B can be turned around, the results will be the same (C -2 to G8 is the same as G8 to C -2).

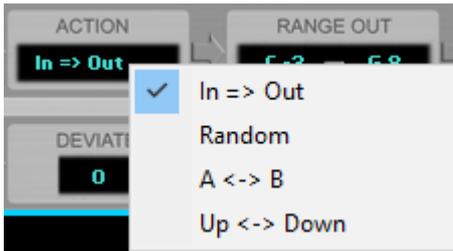


Incoming Note Values are tested whether they are in Range In or not. If so, the dash between the A and B value will turn green.



If not, the dash will turn red.

## Action



### In => Out

If input is in Range In and in Range Out and above Gate threshold it will be outputted at Out 1, otherwise the input will be outputted at Out 2 unaltered.

### Random

If input is in Range In and above Gate threshold a random Note value will be generated that lies between and including the A and B value of Range Out and will be outputted at Out 1, otherwise the input will be outputted at Out 2 unaltered. Random never outputs the same value twice (unless the A and B values are equal).

### A <-> B

If input is in Range In and above Gate threshold the Note value that will be outputted at Out 1 will be Value A and B alternatively, otherwise the input will be outputted at Out 2 unaltered.

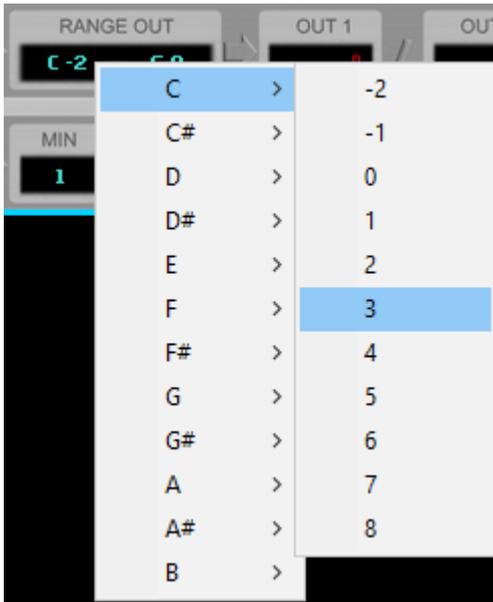
### Up <-> Down

If input is in Range In and above Gate threshold the Note value that will be outputted at Out 1 will move between (and including) Value A and B one by one until value A or B is reached. It then will continue the other way around. Otherwise the input will be outputted at Out 2 unaltered.

## Range Out



Value A and B can be altered to any note in the MIDI range (C -2 to G8), by clicking the display and selecting a value from the dropdown menu.



Set Value A and B to the same value to set a range of one note.

Value A and B can be turned around, the results will be the same (C -2 to G8 is the same as G8 to C -2). The Range Out is used to determine which values will be used for Actions Random, A <-> B and Up <-> Down. Just like Range In the dash will indicate whether the note is in Range Out by turning green if so. If not, the dash turns red.

### Out 1



The display will show the Note value for a short duration when the input passes the tests set in Note Range In and Gate Threshold. The red Not Connected (NC) indicator in the display notifies whether the CV cable on the back panel is connected or not. When the cable is not connected the indicator is shown, when the cable is connected the indicator is not shown in the display.

### Out 2



The display will show the Note value for a short duration when the input does not pass the tests set in Note Range In and Gate Threshold. The red Not Connected (NC) indicator in the display notifies whether the CV cable on the back panel is connected or not. When the cable is not connected the indicator is shown, when the cable is connected the indicator is not shown in the display.

When cables (only Note or Gate or both Note and Gate) are connected the dimmed red LED will turn dimmed green and will light up green when output is sent out. If there are no cables connected the LED will light up red to indicate that the device is trying to output Note and Gate values, but without any cables connected there will be no changes made.

## Gate Values



In this row all gate values are handled.

## Gate



Shows incoming Gate values. When no input is available the display will show two dashes (--). When input is available it will show the MIDI gate value for a short duration. The duration is the same for short and long incoming notes and will be overwritten by the next incoming note.

The red Not Connected (NC) indicator in the display notifies whether the CV cable on the back panel is connected or not. When the cable is not connected the indicator is shown, when the cable is connected the indicator is not shown in the display.

When only the Note CV In jack is connected on the back panel, the Gate Value is automatically substituted by 100 to maintain the note/gate flow.

## Threshold



Can be set from 0 to 126 by clicking the display and dragging up or down. Hold 'SHIFT' while dragging to make more precise changes.



When Gate input is above threshold the arrow indicator in the display will turn into a green arrow pointing up.



Otherwise the arrow indicator will turn into a red arrow pointing down.

When the Gate value is above threshold and the Note value is in Range In, the it will be outputted at Out 1 after being altered by the Action and Range Out settings, otherwise the input will be outputted at Out 2 unaltered.

## Deviate



Can be set from 0 to 126 by clicking the display and dragging up or down. Hold 'SHIFT' while dragging to make more precise changes. When Gate input is above threshold and Note is in Range In the Gate value is altered by the deviate setting when set higher than 0 (zero). The Deviate value is the maximum value by which the inputted Gate value can be raised or lowered.

For example, if the inputted Gate value is 100 and Deviate is set to 10, a Gate value between (and including) 90 and 110 is outputted. You can use this setting to humanize (live played) notes.

### Min / Max



Can be set from 1 to 127. by clicking the display and dragging up or down. Hold 'SHIFT' while dragging to make more precise changes. Any Gate value that passes the Min value will be upgraded to the Min value. Any Gate value that passes the Max value will be downgraded to the Max value. When the Min value is higher than the Max value the values are internally swapped, so Min = 1 / Max = 127 has the same result as Min = 127 / Max = 1.

### Out 1



The display will show the Note value for a short duration when the input passes the tests set in Note Range In and Gate Threshold. The red Not Connected (NC) indicator in the display notifies whether the CV cable on the back panel is connected or not. When the cable is not connected the indicator is shown, when the cable is connected the indicator is not shown in the display.

### Out 2



The display will show the Note value for a short duration when the input does not pass the tests set in Note Range In and Gate Threshold. The red Not Connected (NC) indicator in the display notifies whether the CV cable on the back panel is connected or not. When the cable is not connected the indicator is shown, when the cable is connected the indicator is not shown in the display.

When cables (only Note or Gate or both Note and Gate) are connected the dimmed red LED will turn dimmed green and will light up green when output is sent out. If there are no cables connected the LED will light up red to indicate that the device is trying to output Note and Gate values, but without any cables connected there will be no changes made.

# Folded Front Panel



## Device Label



Label to name the device for your convenience. This is also the name that shows up in the Programmer of a Combinator. By setting the label caption on the Front Panel it changes automatically on all panels and vice versa.

## In



## CV

The CV LED reacts the same as on the Front Panel, so when CV cables (only Note or Gate or both Note and Gate) are connected, the CV LED turns dimmed green and will light up green when input is detected. The Midi LED will light up green when MIDI input is detected.

## MIDI

The MIDI LED reacts the same as on the Front Panel, so the Midi LED will light up green when MIDI input is detected.

## Out 1 / 2



The (Out) 1 and (Out) 2 LEDs react the same as on the Front Panel, so when cables (only Note or Gate or both Note and Gate) are connected the dimmed red LED will turn dimmed green and will light up green when output is sent out. If there are no cables connected the LED will light up red to indicate that the device is trying to output Note and Gate values, but without any cables connected there will be no changes made.

# Back Panel



All CV input and output jacks are located exactly behind the corresponding Front Panel displays. So when you hold the cursor on a display you want to connect and you hit 'TAB' to flip the rack, your cursor is directly located in the right spot.

## Device Label



Label to name the device for your convenience. This is also the name that shows up in the Programmer of a Combinator. By setting the label caption on the Front Panel it changes automatically on all panels and vice versa.

## CV In

### Note In



CV input jack for incoming CV Note values. After connecting a cable the red Not Connected indicator will disappear in the corresponding Front Panel display. When only the Note CV In jack is connected on the back panel, the Gate Value is automatically substituted by 100 to maintain the note/gate flow.

### Gate In



CV input jack for incoming CV Gate values. After connecting a cable the red Not Connected indicator will disappear in the corresponding Front Panel display. When only the Gate CV In jack is connected on the back panel, the Note Value is automatically substituted by C3 to maintain the note/gate flow.

When CV cables (only Note or Gate or both Note and Gate) are connected, the CV LED on the Front Panel turns dimmed green and will light up green when input is detected.

## CV Out

### Note Out 1 / Note Out 2



CV output jack for outgoing CV Note values. After connecting a cable the red Not Connected indicator will disappear in the corresponding Front Panel display.

### Gate Out 1 / Gate Out 2



CV output jack for outgoing CV Gate values. After connecting a cable the red Not Connected indicator will disappear in the corresponding Front Panel display.

When cables (only Note or Gate or both Note and Gate) are connected the dimmed red LED will turn dimmed green and will light up green when output is sent out. If there are no cables connected the LED will light up red to indicate that the device is trying to output Note and Gate values, but without any cables connected there will be no changes made.

# Folded Back Panel



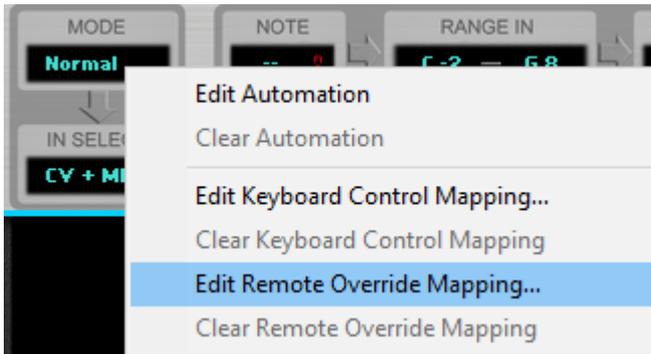
## Device Label



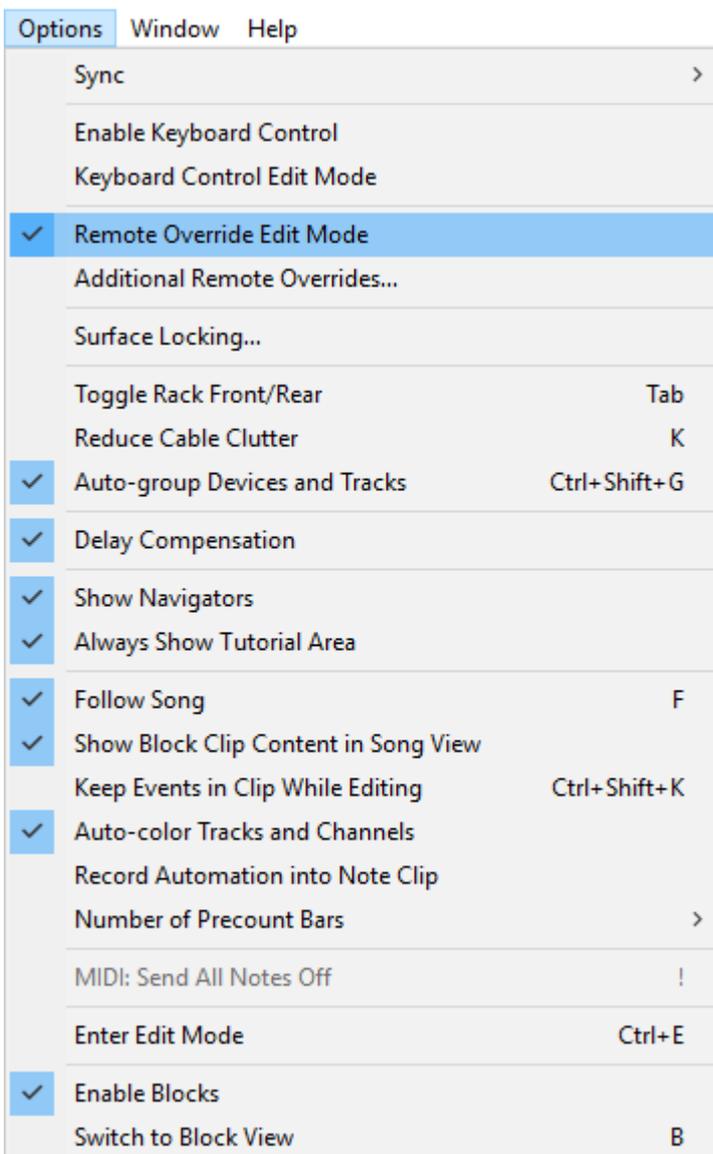
Label to name the device for your convenience. This is also the name that shows up in the Programmer of a Combinator. By setting the label caption on the Front Panel it changes automatically on all panels and vice versa.

# Automation

All the parameters on the device can be automated.



Mode, In Select, Threshold, Action, Deviate and Min / Max can be automated by right clicking on the display and selecting an option from the dropdown menu.



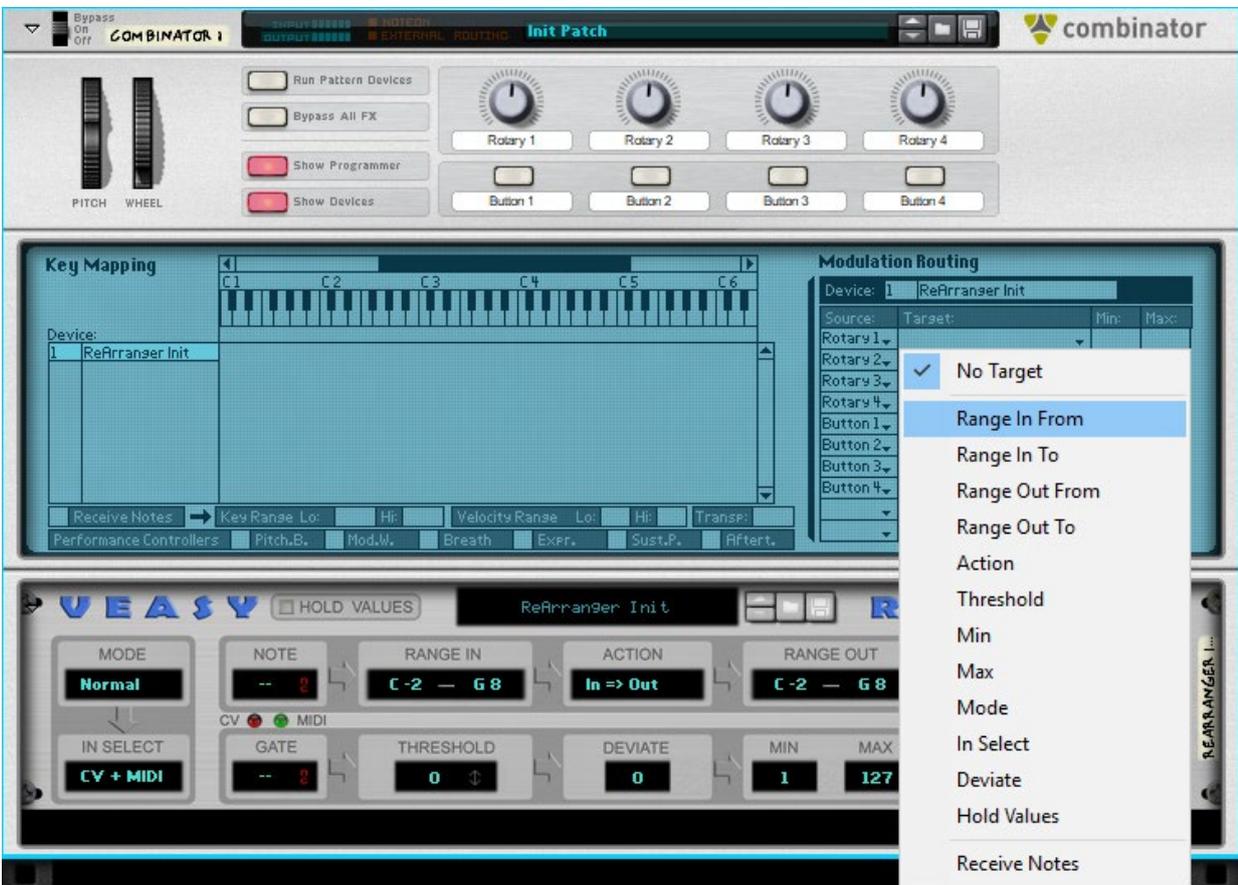
Range In and Range Out can be automated by selecting Remote Override Edit Mode from the Options menu.



After clicking the device in the rack it gets focus and double clicking the blue arrows makes the parameters Remote-able.

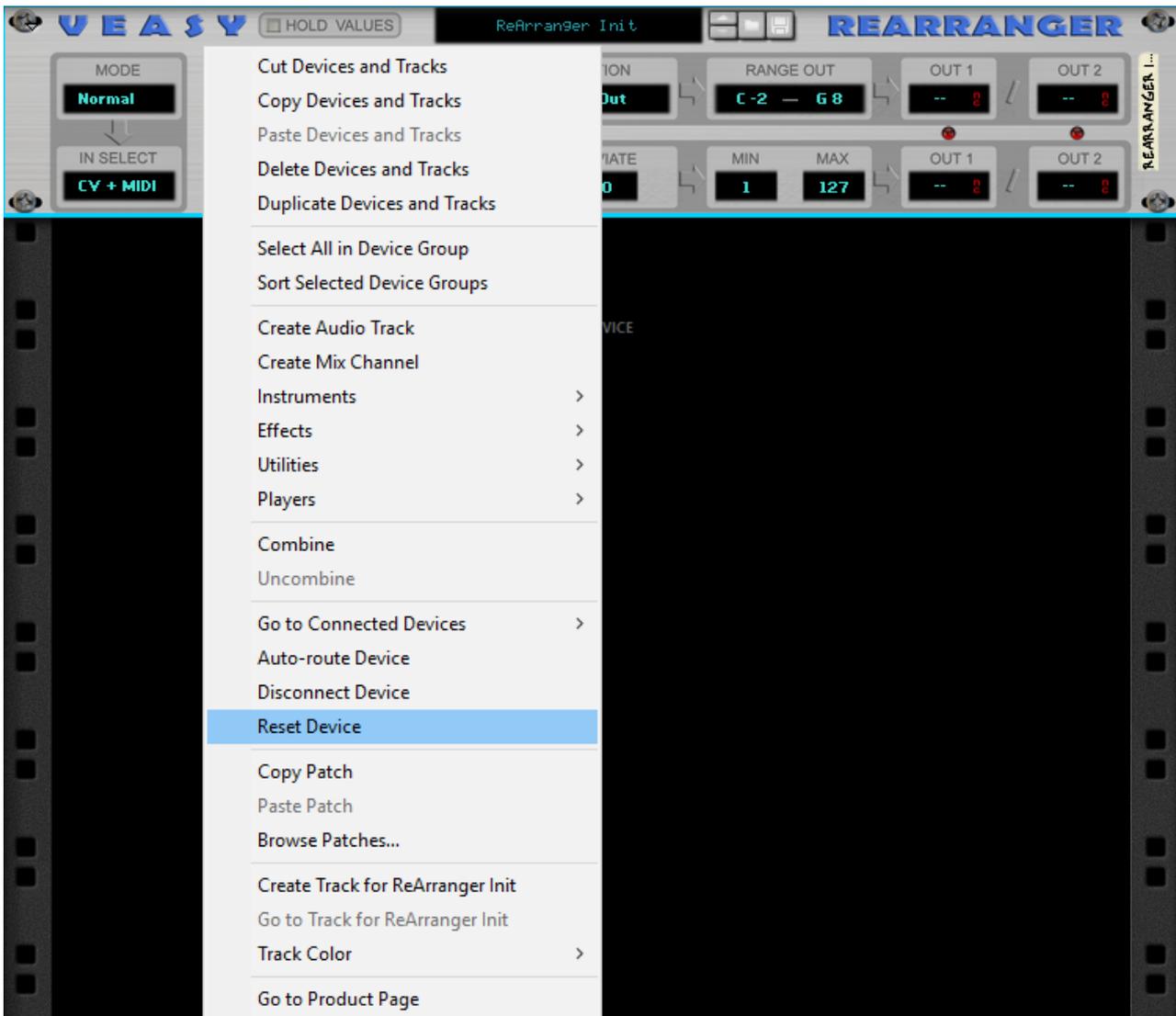


Right clicking on an arrow gives you the menu with options for automation.



You can also insert the ReArranger CV Randomizer into a Combinator. Click 'Show Programmer'. In the Device list on the left select the device and in the Modulation Routing table on the right you can now select a parameter. You can now route CV cables from other devices onto the Combinator Rotary and CV input jacks.

## Reset Device



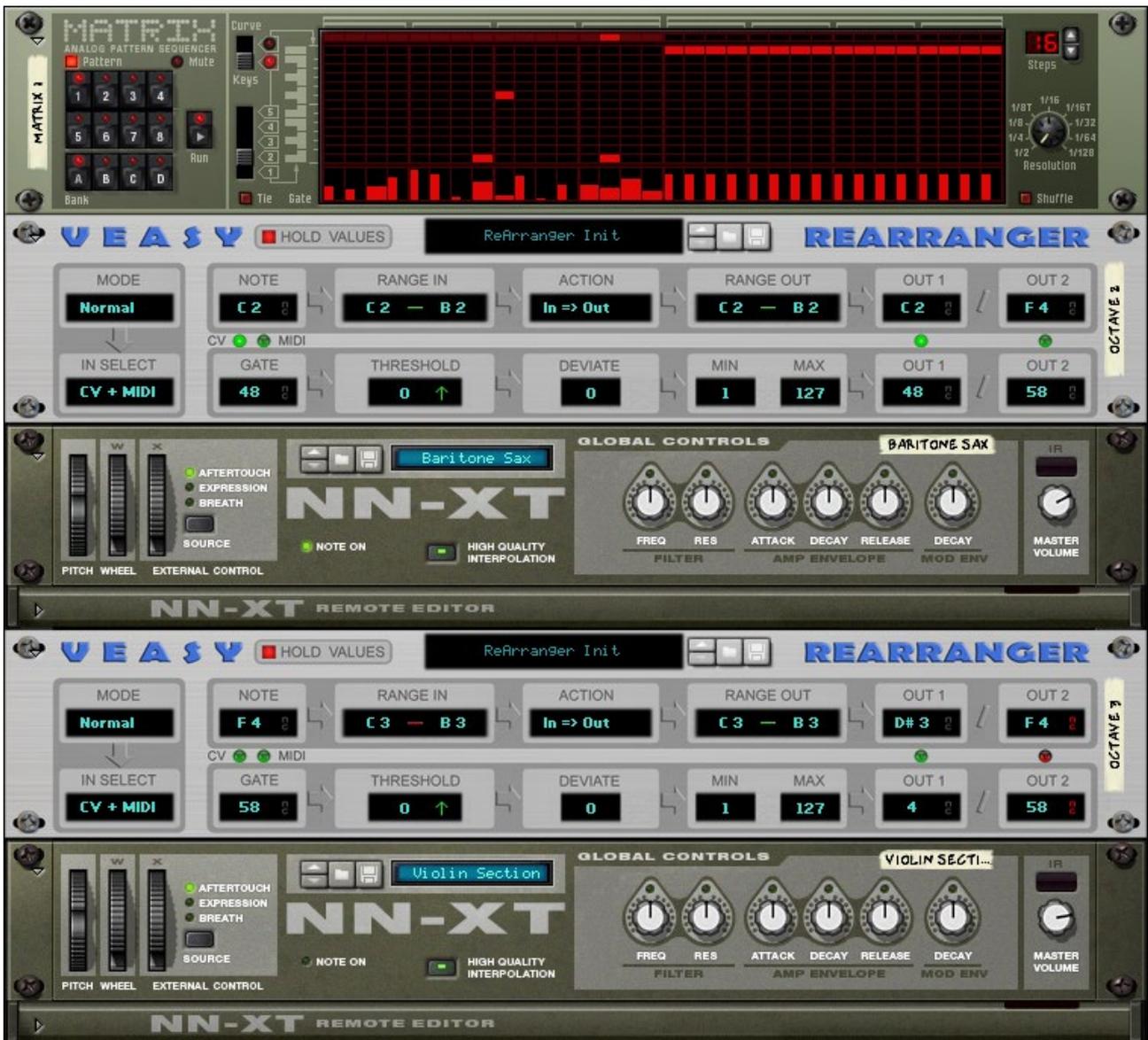
Right click the device on the surface where no display is located and select 'Reset Device' from the drop down menu.

## Chaining

It's possible to chain multiple ReArrangers together by connecting the Out 2 CV Out Jacks on the back to the next CV In Jacks of the next ReArranger in the chain.

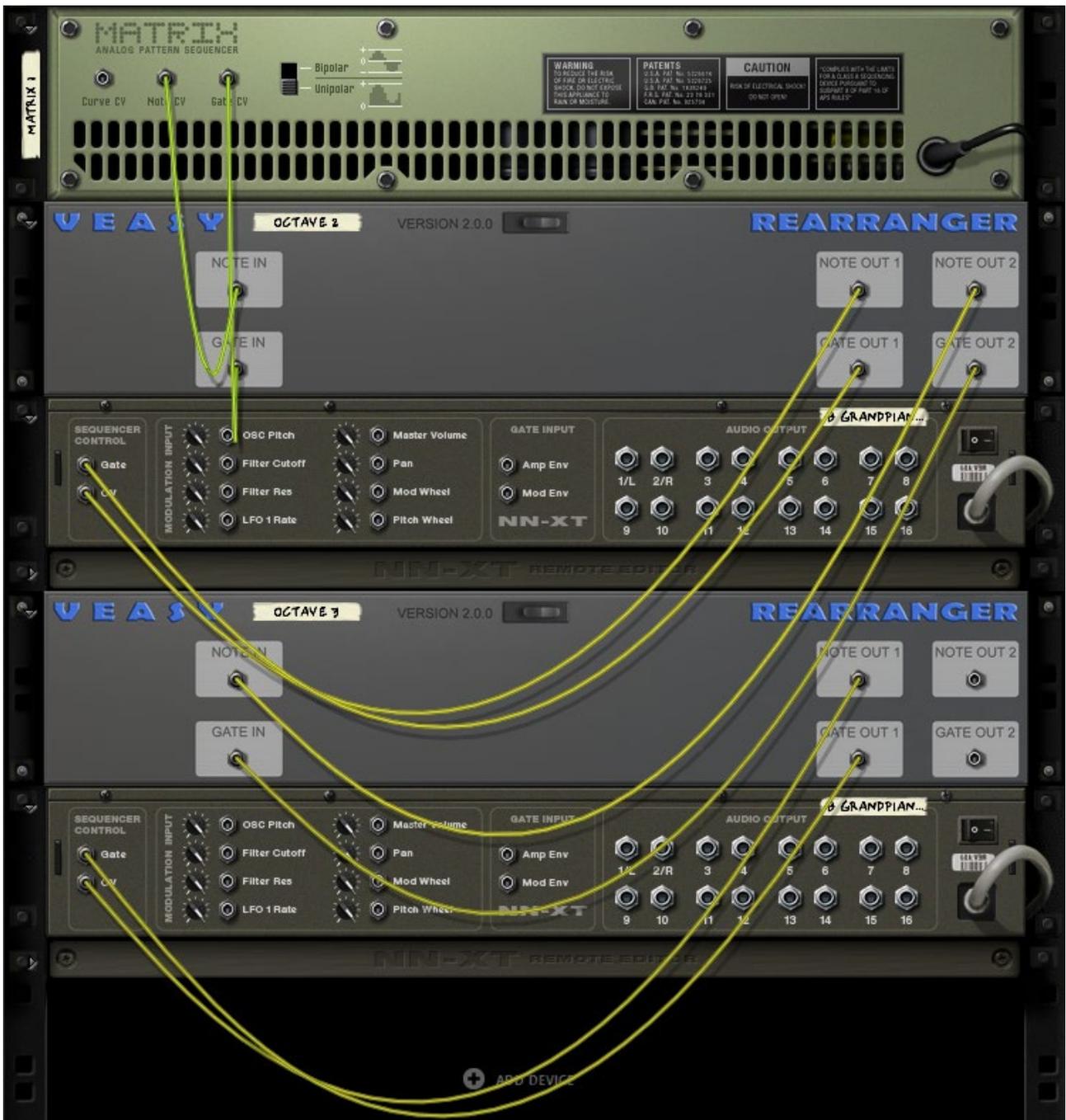
In the following example input from the randomized Matrix Pattern Sequencer is only handled by the first ReArranger if incoming notes are in the second octave (C2 – B2). They then are passed through to the Baritone Sax NN-XT.

When input is not in the second octave range, the CV is passed to the next ReArranger that tests whether it's in the third octave range (C3 - B3) and plays a Violin Section NN-XT if so. Of course you can put as many ReArrangers in a chain as you like. The overhead for your processor is very low, so chain as much ReArrangers as you like! To give you a head start two Combinator patches are included called 'Split 3 Ranges' and 'Split Octaves'.



### Front Panels of chaining example

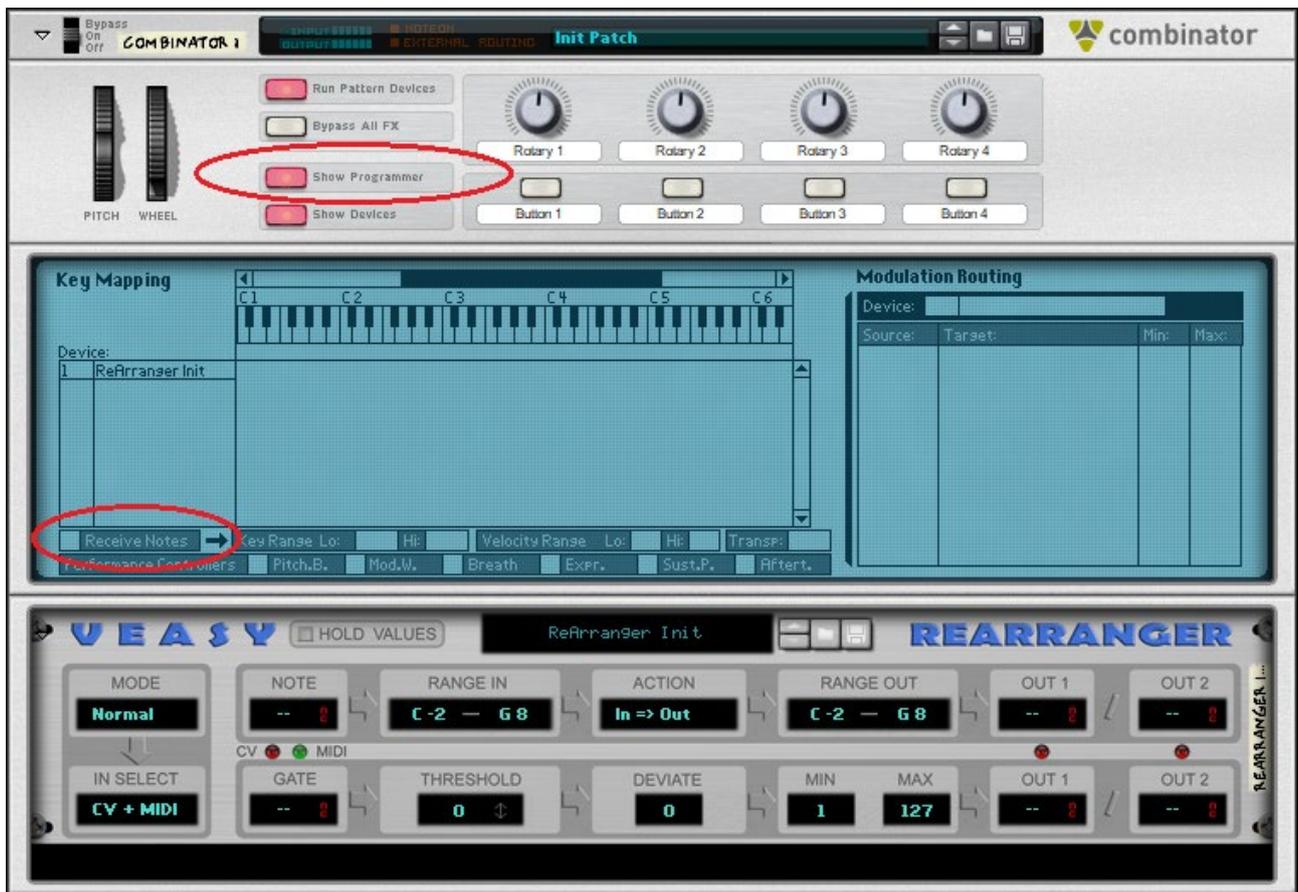
The first ReArranger is receiving a C2 which is in Range In and is outputted to the Baritone Sax NN-XT. The previous note (F4) is still visible in the Out 2 Note display of the first ReArranger, is not in Range In and therefore outputted to the second ReArranger. The second ReArranger does not process this value because it is not in Range In and is sent out to Out 2, so the Violin Section is never played.



Back Panels of chaining example

# 'Receive Notes' inside a Combinator

There are two possibilities to receive MIDI input, one is by MIDI controller, a keyboard or pad controller for example. The other is through a Combinator. The Combinator passes MIDI along to the devices it holds, as long as the devices are set to receive those notes. The ReArranger is set up to not receive notes by default to make sure that ReArrangers that handle CV only (and are set up with CV + MIDI at In Select by default) are going to process the MIDI incoming data. To make a ReArranger receive MIDI data from the Combinator, click 'Show Programmer' on the Combinator, select the ReArranger in the Device list and tick the box 'Receive Notes' in the left bottom corner of the display.



Receive Notes is off, the default value for ReArrangers



The ReArranger is now receiving notes from the Combinator. And because the Combinator is receiving MIDI notes from Players the ReArranger is now processing the C1 Note and Gate value from the Drum Sequencer Player. In this way it's possible to trigger lots of devices at the same time according to your taste and creativity!

Enjoy!