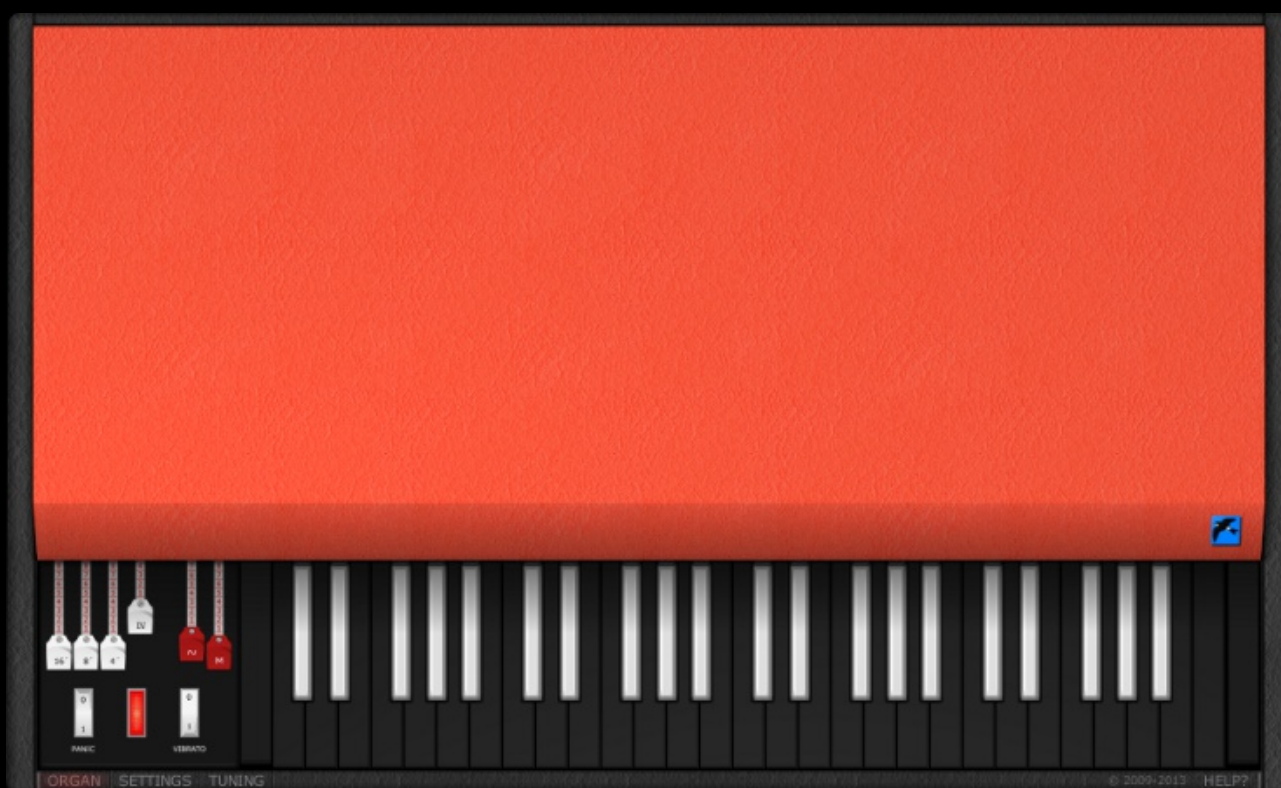


# COMBO MODEL V



## OWNER'S MANUAL

VERSION 1.3.3

# 1. INTRODUCTION

Combo Model V is a virtual combo organ, modelled after the mother of all combo organs: the Vox® Continental.

*Vox® is a registered trademark of Korg Europe Limited. Note that Korg does not endorse Combo Model V, nor is Korg in any way associated or affiliated with Martinic.*

## 1.1. Features

- 4-octave C-to-C keyboard.
- Harmonic range 7 polyphonic octaves.
- 4 footage drawbars: 16', 8', 4', mixture.
- 2 voice drawbars: Flute, Reed.
- Monophonic bass voice.
- Vibrato unit with adjustable speed and depth.
- Swell (volume) pedal.
- Adjustable tuning per note.
- Scala scale file support.
- Fully modelled (no samples inside)
- Model includes oscillators, dividers, crosstalk, noise, filters, key contacts and key click.
- Velocity-sensitive key contact attack and release.
- Reverb unit.
- Speaker cabinet simulation.
- Fully automatable.
- 32 original Connie presets included.

## 1.2. System Requirements

Combo Model V is available as a VST\* 2.4 or an Audio Units (AU) instrument, which means it needs to run inside VST or AU hosting software. Combo Model V has been tested in the following hosting software:

- Ableton Live 9
- ACID Pro 7
- AU Lab
- AudioMulch 2.0
- Cantabile
- Cubase 6.5

*\* VST is a trademark of Steinberg Media Technologies GmbH.*

- Digital Performer 7
- DSP-Quattro 4
- energyXT 2.5
- FL Studio 11
- GarageBand 10
- KORE 2
- Logic 9
- MAGIX Music Maker 2013
- Metro 6
- MiniHost
- Mixcraft 6
- MU.LAB 3
- n-Track 7
- Orion 7.6
- Pro Tools 9 (*via FXpansion's VST to RTAS Adapter*)
- REAPER 4
- Renoise 2.5
- Samplitude Pro X
- SONAR 8
- Studio One 2
- Tracktion 3
- V-Machine
- VSTHost/SAVIHost

If your hosting software is not on the list, then don't worry. There is a big chance it will work anyway, because (in theory) Combo Model V should work in *any* VSTi/AUi-capable host.

Although Combo Model V should be able to run at any sample rate the host provides, a rate of at least 44.1 kHz is recommended.

Combo Model V runs on Windows XP (SP1 or newer), Windows Vista, Windows 7, Windows 8, or Mac OS X 10.4 (Tiger), OS X 10.5 (Leopard), OS X 10.6 (Snow Leopard), OS X 10.7 (Lion), OS X 10.8 (Mountain Lion), or OS X 10.9 (Mavericks). Combo Model V does not have any other special requirements regarding your computer; if your VST hosting software runs on it, then Combo Model V will too. Although not required, a MIDI keyboard will come in handy.



*The settings view with the various drawbars, switches and sliders.*

## 2. BASIC CONTROLS

After loading Combo Model V (ComboV) in your hosting software you will see the settings view containing various drawbars, switches and sliders. In the settings window you can adjust the drawbar settings, turn vibrato on or off, all using the mouse. You can also tweak various other settings that are “under the lid”.

You can adjust a drawbar using the mouse by dragging the drawbar tip up or down, or you can left-click on the numbers that are printed on the drawbar, or you can use the scroll wheel. You can also right-click (or Command-click on Mac OS X) on a drawbar to enter a value using the computer keyboard. To reset a drawbar to its default value, double-click on it. You can change all drawbars in a group (white or red) at once by holding down the Shift key while adjusting any one of the drawbars within the group.

To switch the vibrato on or off, simply left-click on it, and the same goes for the various toggle switches. The sliders and the bass/chords rotary switch work almost just like the drawbars, but the sliders move horizontally instead of vertically, and you can left-click anywhere on the slider to move the handle directly to that position. For higher precision, hold down the Ctrl key while moving the slider.

All the way down in the bottom left corner you will find three small buttons labelled **Organ**, **Settings**, and **Tuning**. By left-clicking these buttons you can switch between the organ, settings, and tuning views. In the organ view you can play the on-screen keyboard using the mouse, in the settings and tuning views the on-screen keyboard is not available. For an in-depth description of the function of the various tabs, switches and sliders in the settings and tuning views, please refer to chapters 3. *Settings* and 4. *Tuning*.

## 2.1. Help

All the way down in the bottom right corner you will a small button labelled **Help?**. You can open this Owner's Manual from within the Combo Model V by left-clicking on this button.

Note that the help button is greyed out if you have not installed the documentation.

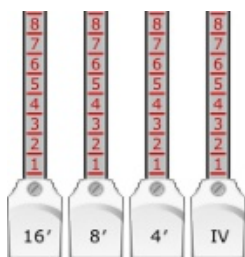
## 2.2. About

In the settings view, on the right of the drawbars, you will find the Martinic logo (🐦). When you left-click on it the about box is displayed, which will tell you which version of Combo Model V you are running.

# 3. SETTINGS

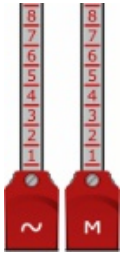
In the left part of the settings view you will find six drawbars, the vibrato and panic rocker switches, the bass/chords rotary switch, and the bass volume slider. In the organ view you will see smaller versions of most of the same controls. Both sets of controls offer exactly the same functionality. The only difference is that here you can actually *read* the numbers printed on the drawbars. Note that the bass/chords switch and the bass slider have no small counterparts.

## 3.1. Footage Drawbars



The 4 drawbars with the white tips are the footage (or pitch) drawbars. Combo Model V uses additive synthesis, and using the footage drawbars you adjust the harmonics mix. You can think of it as an equaliser, where the **16'** drawbar controls the low frequencies, **8'** and **4'** the middle frequencies, and the **IV** (or mixture) drawbar the high frequencies.

### 3.2. Voice Drawbars

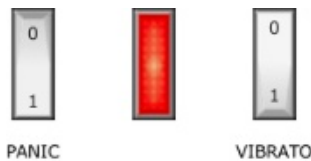


The 2 drawbars with the red tips are the voice (or tone) drawbars. The drawbar labelled **~** controls the foundation voice, which produces a flute-like sound. The **M** drawbar controls the reed voice, which has a much brighter sound to it.

### 3.3. Random Registrations

Above the drawbars you will find the drawbar chassis, with the **Pitch** and **Tone** labels printed on it. If you hold down the Alt key while left-clicking on the drawbar chassis, then all 6 drawbars will be set to random values. Combo Model V can produce no less than 377,364 different sounds, so this button should keep you off the streets for quite a while.

### 3.4. Vibrato



Below the drawbars you will find two white rocker switches (with a red pilot light in between them). The rocker switch on the right is labelled **Vibrato**, and switches the vibrato effect on or off.

There are also vibrato speed and depth sliders (in the top of the settings view, on the right), which let you tweak the vibrato effect, just like you can on a real-world Connie. However, in the real world you would have to open her up first, so you wouldn't be able to easily adjust the speed and depth while playing. Combo Model V has no such limitations, so you can adjust these settings all you like; you can even automate them.

Above the vibrato speed slider you will find a toggle switch labelled **Ext Speed**, which extends the vibrato speed range.

### 3.5. Bass Voice

The original Continental had only a 4-octave keyboard. A lot of MIDI controller keyboards will feature 5 octaves or even more, so that leaves at least one octave unused. When you change

the rotary switch labelled **Bass/Chords** (below the panic and vibrato switches) from the left (off) to the middle position, you can use the extra octave below the original 4 octaves to play bass. Alternatively you can turn the bass/chords switch all the way to the right, in which case the bass voice is added to the bottom octave of the regular voices.

The **Ext Range** toggle switch extends the bass to two octaves. The **8'-16'** toggle switch controls the bass pitch, and lets you switch between 8' only or 8' and 16'. The slider next to the bass/chords switch lets you adjust the volume of the bass voice.

You can preview the bass voice by holding down the Alt key while playing notes in the bottom octave of the on-screen keyboard (in the organ view).

Note that the bass is monophonic with low-note priority.

### 3.6. Reverb and Cab

On the right near the top, beneath the Combo Model V logo, you will find two knobs labelled **Reverb** and **Cab**.

The reverb knob determines the amount of reverberation that is mixed in with the dry output signal. To disable the reverb, turn the knob all the way to the left.

The cab knob selects either speaker cabinet #1 (Vox® AC30) or speaker cabinet #2 (Fender® '59 Bassman®). To disable the cabinet simulation, turn the knob all the way to the left.

*Vox® is a registered trademark of Korg Europe Limited. Fender® and Bassman® are registered trademarks of Fender Musical Instruments Corporation. Note that neither Korg nor Fender endorses Combo Model V, nor is either in any way associated or affiliated with Martinic.*

### 3.7. Volume

The volume adjust and swell control together determine the output level of Combo Model V. By default the swell control is linked to your MIDI expression pedal (CC #11, see chapter 5.2. *Default MIDI Map*), so it can be used to add dynamics to your performance. The volume adjust can be used to change the overall volume.

### 3.8. Auto Adjust Volume

The flute voice is rather soft when compared to the reed voice. If you enable the toggle switch labelled **Auto** (above the volume and swell sliders), then the volume is automatically raised as you turn down the reed voice, so the overall volume stays the same.

### 3.9. Noise Gate

Combo Model V has an internal noise gate, that automatically kicks in when no keys are playing. You can turn off the noise gate using the toggle switch labelled **Gate** (above the volume and swell sliders).

### 3.10. 2-Channel Output

Normally all voices are mixed together and sent to both the left and right channels. However, if you enable the toggle switch labelled **2-Ch** (above the volume and swell sliders), the voices are sent separately to the left and right channels, depending on the state of the bass/chords switch (see chapter 3.5. *Bass Voice*).

With the bass voice off, the flute voice is sent to the left channel, and the reed voice is sent to the right channel. With the bass voice on, the bass voice is sent to the left channel, and the flute and reed voices are sent to the right channel.

### 3.11. Key Contacts

A real-world Connie has 4 contacts for each key. When you depress a key these contacts will not sound all at once, but they will rather sound one after another, especially when you depress the key very slowly. To mimic this behaviour Combo Model V uses the velocity from your MIDI keyboard to control how fast the individual key contacts will sound.

You may want to adjust the attack and release settings to match the velocity curve of your MIDI keyboard.

### 3.12. MIDI Channel

By default Combo Model V receives MIDI data on all 16 channels, but you can also select one particular channel.

### 3.13. Sustain and Pitch Bend

Above the MIDI channel slider you will find two toggle switches labelled **Sus** ("sustain") and **PB** ("pitch bend"), which toggle sustain pedal (CC #64) and pitch bend support on/off. Note that while the pitch wheel is linked to a control, you cannot use the pitch wheel for pitch bend, and *vice versa*. The same goes for the sustain pedal and CC #64.

### 3.14. MIDI Learn

By default Combo Model V's most-used controls are mapped to a standard set of MIDI Control Change (CC) numbers (see chapter 5.2. *Default MIDI Map*). However, the sliders of your MIDI keyboard may well send out other CCs.



Here is how you can learn Combo Model V to respond to the sliders, knobs and buttons of your MIDI keyboard:

1. Set the slider, knob or button on your MIDI keyboard to zero or “off”.
2. Left-click on the toggle switch labelled **Learn** (on the right above the MIDI channel slider). The MIDI learn status LED will now light up, indicating that Combo Model V is in learning mode.
3. Left-click on a Combo Model V control, e.g. the 16’ drawbar. Note that MIDI learn is available only for the drawbars, and for the vibrato, bass and volume controls.
4. Move the slider, knob or button on your MIDI keyboard to the “on” position, and then back to the “off” position. Alternatively you can left-click on the MIDI map **Clear** button (all the way down below the MIDI channel slider) to clear the mapping for the selected control.

When the MIDI learn status LED is no longer lit up you are ready. You will have to repeat these steps for each control you want Combo Model V to learn.

Note that for the drawbars Combo Model V not only learns the CC number, but also the direction in which the slider or knob moves. This comes in handy if your MIDI keyboard has mixer-style sliders, which usually operate “upside down” when compared to drawbar-style sliders.

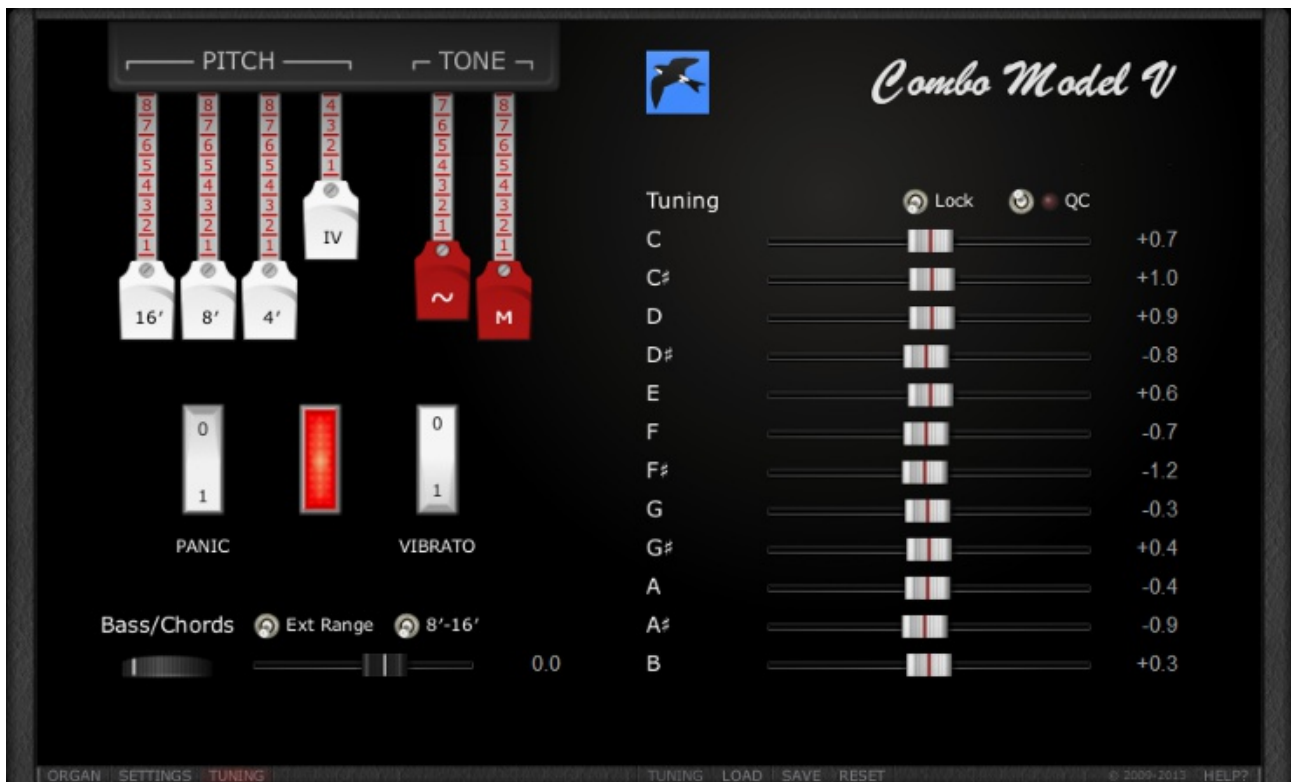
You can also learn Combo Model V to use to pitch wheel to temporarily “bend” one of its controls up or down. When the pitch wheel is in its neutral (centre) position, you can adjust the value of the linked control using the mouse. The adjusted value will then become the new centre value for the pitch wheel. When you link the pitch wheel to a drawbar, then all drawbars in the same group (white or red) will be linked to the pitch wheel. Note that you can link both a CC and the pitch wheel to the same control.

### 3.15. MIDI Map

When you save your project containing Combo Model V, the learned MIDI map will be saved along with the other settings. However, if you load a new instance of Combo Model V, the default MIDI map will be loaded again. By left-clicking on the MIDI map **Save** button (all the way down below the MIDI channel slider) you can save your customised MIDI map in an FXP file. If you save it as **Default MIDI Map.fxp** in the ComboV data folder\*, then Combo Model V will automatically load your customised MIDI map the next time you add Combo Model V to a project.

If you need to revert to the default MIDI map while you are in the middle of a project or session, then left-click on the MIDI map **Load** button, select an FXP file, and the selected MIDI

\* %AppData%\Martinic\ComboV on Windows, ~/Library/Application Support/ComboV on Mac OS X.



*The tuning view with the tuning sliders on the right.*

map will be loaded without affecting any other settings. If you hold down the Alt key while clicking on the load button, the original default MIDI map will be loaded.

If you somehow don't want Combo Model V to have any MIDI mappings at all, then make sure the MIDI learn switch is *not* active (i.e. the status LED is off), and left-click on the MIDI map **Clear** button.

## 4. TUNING

In the right half of the tuning view you can adjust the tuning independently for each of the 12 notes in an octave. The tuning for the same note in different octaves is always the same, so if you detune the F# by -1.2 cents, all F# notes in all octaves will be detuned -1.2 cents.

You can adjust the tuning using the 12 sliders labelled **C** through **B**. You can change all 12 tuning sliders at once by holding down the Shift key while adjusting any one of the tuning sliders. You can semi-randomly detune the organ by holding down the Alt key while adjusting any one of the tuning sliders.

By default Combo Model V is more or less equally tuned to  $A_4 = 440$  Hz.

## 4.1. Tuning Lock

Above the tuning sliders you will find a toggle switch labelled **Lock**. If you lock the tuning, then it will persist when you select another preset, or when you load a preset or a preset bank. However, you can still change the tuning by hand, or using automation.

## 4.2. Quality Control

For optimal quality Combo Model V's internals need to be recalculated when you change the tuning. Because recalculating the internals uses a lot of CPU resources, you may want to disable quality control in some situations (e.g. when you are automating the tuning using a LFO).

You can toggle quality control on or off by left-clicking on the toggle switch labelled **QC**. You will find this toggle switch a little to the right above the tuning sliders.

While Combo Model V's internals are being recalculated the quality control LED will momentarily turn on, unless you turn off quality control, in which case the LED will stay on.

If your VST hosting software has an option to inform plug-ins of offline rendering, then enable this option. This will ensure optimal quality during offline rendering.

## 4.3. Scala Scale Files

All the way down below the tuning sliders you will find the tuning **Load**, **Save**, and **Reset** buttons. When you left-click the load or save button, you will be asked to browse for a Scala scale (.scl) file to load a new scale from, or save the current scale in. The reset button will reset the scale to Combo Model V's default tuning. If you hold down the Alt key while clicking the reset button, then the scale is reset to twelve-tone equal temperament.

If you save the tuning as **Default Tuning.scl** in the ComboV data folder\*, then Combo Model V will automatically load this tuning the next time you add Combo Model V to a project.

More about Scala scale files, and an archive of over 4000 scales, is available on the Scala website at [www.huygens-fokker.org/scala](http://www.huygens-fokker.org/scala). Note that Combo Model V can only handle twelve-tone scales.

# 5. MIDI IMPLEMENTATION

Combo Model V can receive MIDI data on all 16 channels, or on one specific channel (see chapter 3.12. *MIDI Channel*).

\* %AppData%\Martinic\ComboV on Windows, ~/Library/Application Support/ComboV on Mac OS X.

Combo Model V will respond to Note On/Off messages within the C2..C7 range. It supports both Note On and Off velocity. However, velocity is not used to vary the volume of the played notes, as is the case with most (software) synthesizers. Instead it is used to mimic the key contacts of a real-world Connie (see chapter 3.11. *Key Contacts*).

Combo Model V supports Control Change (CC) values in both 7-bit (standard) and 14-bit (MSB/LSB) resolution, depending on the control the CC is mapped to. Combo Model V optionally supports the sustain pedal (CC #64) to sustain notes (see chapter 3.13. *Sustain and Pitch Bend*), provided that CC #64 is not mapped to another control.

Combo Model V supports Pitch Wheel messages, which can be used to bend the pitch up to 2 semitones down (note that bending the pitch up is not supported). Alternatively the pitch wheel can be linked to one of Combo Model V's controls (see chapter 3.14. *MIDI Learn*).

Combo Model V supports Program Change messages for selecting one of the 32 presets (see chapter 6. *Presets*).

## 5.1. Panic

Below the drawbars you will find 2 white rocker switches (with a red pilot light in between them). The rocker switch on the left is labelled **Panic**, and when you left-click on it all notes will immediately stop playing, and sustain and pitch bend will be reset.

When Combo Model V receives an All Notes Off message, it will also immediately mute all notes.

## 5.2. Default MIDI Map

CC	Control	
1	Vibrato on/off	
11	Swell pedal	[MSB]
12	16' drawbar	
13	8' drawbar	
14	4' drawbar	
15	IV drawbar	
16	Flute (~) drawbar	
17	Reed (M) drawbar	
43	Swell pedal	[LSB]
73	Vibrato speed	
74	Vibrato depth	
-	Volume adjust	[MSB]
-	Volume adjust	[LSB]
-	Bass/chords switch	
-	Bass volume	[MSB]
-	Bass volume	[LSB]

Note that Combo Model V is basically B4/EVB3 compatible, so if your MIDI keyboard has a setting for B4 or EVB3, that setting should also work for Combo Model V. If your MIDI

keyboard has no such setting, then don't worry; you can learn your MIDI keyboard and Combo Model V to get along with each other (see chapter 3.14. *MIDI Learn*).

## 6. PRESETS

Combo Model V comes with 32 default presets, based on the list of suggested tone combinations from the original Connie manual.

Presets for your favourite Connie songs are *not* included, so you will have to figure out these all by yourself. But that shouldn't be too hard; after all, there are only a mere 377,364 combinations.

Combo Model V

Version 1.3.3

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[www.martinic.com/combov](http://www.martinic.com/combov)

Cabinet #1 impulse response by Gregor Hennig, Studio Nord.

Cabinet #2 impulse response originally by Beamsonic.

Sample rate converter designed by Aleksey Vaneev of Voxengo.

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