



PREMIUM TUBE SERIES

VARI COMP

Manual



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1 Welcome to VARI COMP

Thank you for purchasing VARI COMP, a professional compressor/limiter created by Native Instruments and Softube.

The following manual will give you an overview of the features of the VARI COMP, as well as explain how to use the software.

1.1 What Is a Compressor?

A compressor is an audio processing unit designed to automatically control the output level of a signal based on its input level.

For many studio and live music applications, the usage of compressors is inevitable: both as a tool to control large variations in dynamics, or as a creative effect to shape the envelope of a sound. Compression can be used for a wide range of applications. Here are a just few examples:

- **Electric guitars and basses:** Compression is applied to picked string instruments in order to smooth the varying intensity of the individual strokes, thus increasing the perceived overall level. At extreme settings, you can get a “wall-of-sound” effect.
- **Drums:** Adding compression to a bass drum or snare track will add punch and help define its sound in your mix.
- **Vocals:** Adding compression to vocals can make them sound more balanced by leveling the soft and loud sounds in the voice.
- **Mixing/pre-mastering:** A slight compression applied to the overall mix (or some specific subgroups) can add cohesion between the various instruments.

Using compression is a fine art: You can easily destroy your sound if you don't carefully set the compression parameters. For each purpose, specific settings are required. A good understanding of each parameter's effect, together with experience gained by using the compressor, will allow you to achieve great results.

As with everything, there are many common applications, but no set rules. Compressors can be used and misused in many ways, so take some time to experiment.

1.1.1 Main Compression Parameters

Compression can be controlled by several parameters. The most important parameters are the following:

- The **threshold** defines the audio level above which compression takes place. Below this threshold level, the incoming signal is left untouched; above this threshold level, the gain of the incoming signal is attenuated.
- You can choose how much attenuation is applied to the signal by defining an input/output **ratio**. For example, when you select a ratio of 2:1, an input level that is 2 dB above the threshold will create an output level that is only 1 dB above the threshold.



By setting an extreme compression ratio, you can practically prevent the signal from exceeding the threshold level. The compressor then acts as a limiter.

- Since the compression attenuates the higher levels of your input signal, most compressors allow you to add a fixed **make-up gain** to the output in order to counterbalance the loss of level.

1.1.2 Other Compression Parameters and Features

The compression process can be further tuned by using additional parameters and features.

Attack and Release

The **attack time** can define how long it takes for the compressor to come into full effect when the threshold level is reached. For example, a longer attack time can be useful to retain the attack transients on a percussive or plucked string instrument in order to only compress the instrument sound coming after the transients.

Similarly, the **release time** can define how long it takes for the active compressor to return to its standby state after the signal level has fallen below the threshold level.

The right settings for attack and release time strongly depend on both the current purpose of the compression and the kind of instrument that you are working on.

Side Chain Input

Every compressor uses a detector to decide when to kick in. This detector listens to a control signal and activates the compressor when needed.

Usually, the detector listens to the input signal itself and activates the compressor whenever the level of the input signal exceeds the selected threshold.

A **side chain input**, on the contrary, allows you to feed the detector with another signal (e.g. another track in your mix). In this setup, compression is applied according to the level of the other signal. This greatly widens the versatility of your compressor. For information about how to activate the side chain input, please see section [↑2.2, The Main Interface](#).



Typically the side chain input is fed by the bass drum track as a control signal to trigger the compressor, which in extreme cases causes the "pumping" effect heard on many songs in dance genres. Another example is the "auto talk over" feature found on several mixers, which automatically attenuates the level of the music as soon as you talk into the microphone.

1.2 The VARI COMP

The VARI COMP is modeled after an analog device famous for its great sound. Because of the analog nature of the device, by increasing the input gain whilst lowering the output gain, it is possible to overdrive the effect to produce tube distortion.

The VARI COMP can be used on both mono and stereo tracks, with an automatic joint stereo set-up (the same compression amount is used on both the left and right channels). It also has the option for a side chain input, as well as a [Dry](#) mix knob for easy parallel compression.

2 Using the VARI COMP

2.1 The Menu Bar

At the very top of the VARI COMP interface, you will see the menu bar. This is primarily used for saving and loading presets, but also has a few other functions.



The Menu Bar is located at the top of the interface.

Loading Presets

In the center part of the menu bar, you will see the preset menu. To navigate through presets, either:

- Click on the left and right arrows to cycle through and load the presets one at a time, or
- Click on the dropdown menu to view a list of all available presets.

When using the second option, a preset is loaded when you click on its name.

Saving and Deleting Presets

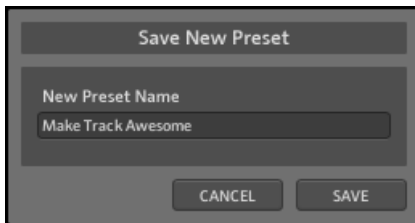
To save a preset:

1. Click on the drop-down arrow to the very left of the menu bar to open the File menu.

2. Select *Save as...* from the File menu:



3. Enter the name of your preset in the area under the label **New Preset Name**:



4. Click the **SAVE** button to finish the process and close the dialog box.



If you wish to remove a preset you no longer want, you can delete it by selecting *Delete* from the file menu. Please note: you are not able to delete factory content.

A/B Comparisons

VARI COMP offers an A/B comparison system to help you fine tune your settings.

Basically, this feature gives you two slots into which you can enter different parameter settings. You can then quickly switch between the two slots to quickly compare the settings and use whichever sounds better.

By default, you edit the parameters of slot A. To **switch to slot B**:

- Click on the **A/B** switch located beside the preset menu.
- You will now be editing and listening to the parameters of slot B, until you click on the switch again.

To **copy the settings of slot A to slot B**:

- Go to the File menu on the left side of the menu bar and select *Copy A to B* from the list. You can also copy from B to A when editing the parameters of slot B.

Other functions

The File menu also offers the following options:

- *Show User preset folder*: opens a system window in the location of where your presets are saved.
- *Open Manual*: opens this PDF document for reference.
- *Visit Vari Comp on the web*: opens your default web browser and takes you to the VARI COMP page on the Native Instruments website.

2.2 The Main Interface



The VARI COMP Interface

The VARI COMP has controls that are common on many compressors, as well as a few unique features.

Compressor Modes

The VARI COMP does not feature a ratio control; instead, to the right of the interface, under the compression meter, you will find a mode switch that allows you to toggle between **Comp** and **Limit** mode.

- If you set the mode switch to **Comp**, then the compressor acts as a compressor with a ratio of about 1.5 to 1, with a soft knee. This means that rather than kicking in at 100% when the threshold is passed, the effect is gradual. If driven very hard, by a high input gain, the ratio can reach as high as 8 to 1.
- If you set the mode switch to **Limit**, then the compressor changes character to act like a limiter. First of all, the ratio is a lot higher, around 12 to 1; secondly, the knee is significantly harder, so the compressor kicks in at full effect shortly after the threshold is passed.

In both cases, the setting set by the **Threshold** control changes to exact ratio and knee settings in both modes. Generally, lower Threshold settings give a softer knee, but a higher ratio.

Parameters

The other parameters of the VARI COMP follow a more traditional approach.

- **Input**: controls the input gain of the effect — the gain at the first stage, before the signal reaches the compressor.
- **SC Gain**: controls the input gain of the sidechain signal — a signal that can be used as an alternative control source for the compressor.
- **Output**: controls the output gain of the effect.
- **Dry**: controls the dry mix. You can use this control to mix in a little of the unprocessed signal to soften the artifacts of hard compression. This technique is commonly called Parallel Compression.
- **Threshold**: controls the threshold level, above which the compression effect kicks in. As noted in the above section, this knob also affects the ratio and knee settings.

- **Detector HP:** when this button is active, a highpass filter is applied to the signal before the level detector. This makes the compressor less sensitive to low frequencies, which usually have higher power. The filter has a cutoff setting of around 100Hz; frequencies below this are attenuated at a rate of approximately -6dB per octave. The highpass filter is not applied to the signal that is processed by the compressor.
- **Recovery:** this control is similar to the release time found on other compressors and sets the time it take for the compression amount to fade after the detection signal drops in amplitude.
- **Attack:** controls the attack time of the compressor, which is the time it takes for the gain reduction to reach full effect after the detection signal passes the threshold level.

For all controls, the value is displayed in place of the control label when the mouse pointer hovers over the control, or when you are interacting with the control.

Activating the Sidechain Input

- To activate the sidechain input, click on the LED to the right of the SC Gain label.



3 Credits

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