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# Voxengo Powershaper User Guide



Version 1.5

<https://www.voxengo.com/product/powershaper/>

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## Introduction

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Powershaper is a saturation, distortion, and overdrive effect plug-in for professional music production applications. Powershaper's approach to saturation is quite unique as it works in multi-stage manner utilizing dozens of saturation stages in a specified variation. While Powershaper was designed to apply extreme saturation, it can be also used to boost presence of audio tracks subtly.

The flexibility of this saturation plug-in is most apparent when applying saturation to the drums: it is possible to dial settings that retain or even extend the punch while applying strong pleasant coloration and presence effect.

Powershaper can be used to apply saturation with good results to various sounds: vocals, drums, bass, guitars, synths, mixes. This effect is, however, quite CPU-intensive, especially during continuous parameter changes, and requires a higher-end processor for comfortable use.

## Features

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- Multi-stage algorithm
- Algorithm variations
- Stereo processing
- 64-bit floating point processing
- Preset manager
- Undo/redo history
- A/B comparisons
- Contextual hint messages
- All sample rates support
- Zero processing latency

## Compatibility

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This audio plug-in can be loaded into any audio host application that conforms to the AAX, AudioUnit, VST, or VST3 plug-in specification.

This plug-in is compatible with Windows (32- and 64-bit Windows XP, Vista, 7, 8, 10 and later versions, if not announced otherwise) and macOS (10.11 and later versions, if not announced otherwise, 64-bit Intel and Apple Silicon processor-based) computers (2.5 GHz dual-core or faster processor with at least 4 GB of system RAM required). A separate binary distribution file is available for each target computer platform and audio plug-in specification.

## User Interface Elements

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**Note:** All Voxengo plug-ins feature a highly consistent user interface. Most interface elements (buttons, labels) located at the top of the user interface are the same in all Voxengo plug-ins. For an in-depth description of these and other standard features, and user interface elements, please refer to the “Voxengo Primary User Guide”.

### Saturation

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The “Drive” parameter controls the overall saturation intensity. Makeup gain is automatically calculated and applied. Note that even at -24 decibel setting, saturation can still be noticeable as this plug-in was designed for strong saturation applications.

The “Emph” parameter controls emphasis gain of saturation stages. Positive values produce stronger saturation effect, negative values produce gentler saturation without oversaturation. The accompanying mode switch selects width of internal filters, affects perceived smoothness of the saturation. The “wide” mode needs a considerably lesser “Drive” to reach saturation.

The “Hi Emph” parameter specifies an additional saturation gain (in decibel) applied to the higher frequencies. It produces an effect of over- or under-saturated higher frequencies.

The “Bias” parameter switches between “transistor” (at low settings) and “valve” saturation. Higher values produce saturation with even harmonics more prevalent in the sound.

### Variation

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The “Boost” parameter controls additional inter-stage gain (in decibel). Higher values push algorithm into oversaturation, while lower values produce gentler saturation.

The “Variation” parameter selects internal stage configuration randomly. By adjusting this parameter, you can control the overall “flavor” of the saturation algorithm. Its effect is most apparent on drum tracks.

### Out

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This panel displays output level meter with the overload (“OL”) indicator.

The “Dry Mix” parameter (in percent) controls the balance between saturated and dry input signal. Set to 0.0 for full saturation signal, or 100.0 for dry signal.

The “Out Gain” controls the overall output level of the plug-in, specified in decibel.

## Credits

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DSP algorithms, internal signal routing code, user interface layout by Aleksey Vaneev.

Graphics user interface code by Vladimir Stolytko. Graphics elements by Vladimir Stolytko and Scott Kane.

This plug-in is implemented in multi-platform C++ code form and uses “zlib” compression library (written by Jean-loup Gailly and Mark Adler), “LZ4” compression library by Yann Collet, “base64” code by Jouni Malinen, FFT algorithm by Takuya Ooura, filter design equations by Magnus Jonsson and Robert Bristow-Johnson, VST plug-in technology by Steinberg, AudioUnit plug-in SDK by Apple, Inc., AAX plug-in SDK by Avid Technology, Inc., Intel IPP and run-time library by Intel Corporation (used under the corresponding licenses granted by these parties).

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