

Stoke Saturator

User guide · version 0.2.0



What it is

A saturator built around one deeply tuned analog-style voice and four knobs: Drive, Tone, Mix and Output. The low end cannot thin, Auto holds loudness within ± 0.5 LU across the whole Drive range, and every one of those claims is a measured test that fails the build if it moves. No modes, no styles. VST3, AU and AAX for Windows and macOS. Free.

Drive is the sound, deeper. Low on the dial it adds second-order warmth; pushed, it grows controlled upper harmonics under a hard ceiling on shrill orders. The character never switches modes: one voice, continuously. Tone is a minimum-phase ± 6 dB tilt around 800 Hz on the saturated path only. Mix is a phase-clean parallel blend against a dry path that is a bit-exact delay line, so Mix 0 and Drive 0 are exact nulls. Output is the final trim.

Auto is equal-loudness Drive: turning it up gets thicker, not louder, with output loudness held within ± 0.5 LU across the whole range and across a 24 dB input-level window. Input calibration watches program loudness with BS.1770 weighting and normalizes the drive circuit's operating point, so Drive 40 means the same character whether the source sits at -24 or -6 dBFS. A program-dependent bias gives sustained material a slight bloom, and a transient-aware ease protects the first milliseconds of every hit: drums keep their attack crest at nominal drive, bounded within 4 dB at full drive. Energy from 20 to 120 Hz holds within ± 0.5 dB at nominal drive. The aliasing floor measures -131 dBFS at full drive.

Power is an honest bypass that passes the input bit-exactly. Latency is a fixed 6 samples (0.125 ms at 48 kHz), reported to the host and verified by test. Twelve source-named starting points, precision readouts you can type into, and the coal under Drive glows with the harmonic energy the circuit is actually adding.

Every number above is a measured contract: a test that fails the build the moment it moves. Null-test us.

Built and used at a working recording studio. Support: support@vitricaudio.com

Key features

- One deeply tuned analog-style voice; Drive morphs it continuously, no modes or styles
- Low end that cannot thin: 20 to 120 Hz holds within ± 0.5 dB at nominal drive
- Auto holds loudness within ± 0.5 LU across the whole Drive range and a 24 dB input window
- Bit-exact dry path and a separate harmonic residual, so Mix 0 and Drive 0 are exact nulls
- Input calibration tracks program loudness, so the character follows the knob, not the fader
- Fixed 6-sample latency, reported exactly; aliasing floor measured at -131 dBFS at full drive

One sound, four knobs. Insert it, turn DRIVE, done. Everything below is detail.

The controls

- DRIVE (0-100) — the sound, deeper. Low drive adds second-order warmth (thicker, rounder); high drive grows controlled upper harmonics under a hard ceiling on shrill orders. The character never "switches modes" — one voice, continuously.
- TONE (+-6 dB) — a minimum-phase tilt around 800 Hz on the saturated path only. Right is brighter, left is darker. Zero-latency; at 0 it is exactly out of the circuit.
- MIX (0-100 %) — parallel blend. The dry path is time-aligned to the sample, so any blend is phase-clean. At 0 the output is the dry signal, bit-exactly.
- OUTPUT (+-12 dB) — the final trim, after everything.
- AUTO — equal-loudness Drive. On (the default), turning Drive up gets thicker, not louder: a fixed, published compensation curve holds output loudness within ± 0.5 LU across the whole range. Click to defeat when you want the raw level change.
- POWER — honest bypass. Off passes the input bit-exactly (no hidden pad, no trim). Toggling is click-free.
- The menu (...) — input calibration trim (see below), presets, and the suite-wide switches: tooltips, reduce visual effects, and the keyboard shortcut guide. Press O to open it.

Mouse and keyboard

Every knob follows the Vitric standard:

- Drag to adjust; Shift + drag is 10x finer (Pro Tools: Cmd + drag).
- Wheel steps on the parameter's grid — 5 % on Drive and Mix, 0.5 dB on Tone and Output; Shift + wheel gives 1 % and 0.1 dB. Tone and Output also fall into soft detents at whole dB, with 0 dB the strongest.
- Double-click or Cmd-click (Pro Tools: Alt-click) resets to the default: Drive 20 %, Mix 100 %, Tone and Output 0 dB.

- Arrow keys nudge the focused knob one grid step; Shift = fine.

Keys, with the plugin window focused: A toggles AUTO, P toggles POWER, O opens the menu, ? opens the shortcut sheet and Esc closes it. Every one of them also has a control on the face.

One honest note: the knobs are ray-traced film strips, so the pointer moves in whole frames. A fine gesture can move the value by less than one frame and the knob will not visibly turn — the sound follows regardless.

The coal

The ring under DRIVE is not decoration: its glow is driven by the measured harmonic energy the circuit is actually adding, so the plate smolders exactly as much as the sound does. Silence rests dark. If you enable the suite's "Reduce visual effects" option, the frame rate halves but the coal stays honest.

Input calibration (why the knob always finds the sweet spot)

Stoke watches program loudness (BS.1770 weighting) and slowly normalizes the drive circuit's operating point, so DRIVE 40 means the same character whether your source sits at -24 or -6 dBFS. Two honest notes:

- It settles over the first few seconds after transport start on hot or quiet material — deliberate, slow enough never to read as pumping.
- It changes CHARACTER only, never level: the added harmonics always stay proportionate to your signal. The menu's calibration trim biases the operating point (hotter = denser at the same knob position) without a loudness jump.

Latency

Fixed 6 samples (0.125 ms at 48 kHz), reported to the host exactly and verified by test. There is no zero-latency mode because there is no latency worth removing.

The presets

The starting-point selector exposes twelve source-named settings. Click its name to choose one, or use the arrow buttons and the [/] keys to step. Starting points set the four sound knobs and re-arm AUTO and POWER; Input Cal stays where you set it. The name reads Custom when your settings no longer match a starting point. Default identifies the original insert settings.

Precision readouts (Astra candidate)

Click a value beneath its knob to type an exact percentage or dB value. Enter applies; Escape cancels. Optional % and dB suffixes are accepted; invalid units and out-of-range values leave the parameter unchanged. Tab focuses controls and Enter opens a focused value field. Arrow keys and the wheel nudge on the same grid as the knobs; Shift uses fine steps.

The readouts show fine changes smaller than one physical knob frame. The small console reports input/output sample peaks in dBFS and explicitly shows AUTO ON, AUTO OFF or POWER OFF. A dash

marks a settled no-signal level.

Typical uses

- **Drums and drum buses.** Density without losing the hit: drums keep their attack crest at nominal drive, bounded within 4 dB even at full drive.
- **808s, kick and bass.** Weight that does not thin: energy from 20 to 120 Hz holds within plus or minus 0.5 dB at nominal drive, measured at 0.06 dB or less of movement.
- **Vocals, keys and guitars.** Push the Drive for density and let Auto hold the level within half an LU, so the decision is about tone, not loudness.
- **Everywhere at once.** One voice and seven parameters, the same at any input level, so the same instance can sit on every track without a style menu to revisit.

Full specification

- One deeply tuned analog-style voice; Drive morphs it continuously
- Four knobs: Drive, Tone, Mix, Output; Auto and Power; seven parameters in all
- Dry path is a bit-exact delay line; every harmonic lives in a separately generated residual
- Low end: 20 to 120 Hz within plus or minus 0.5 dB at nominal drive
- Punch: attack crest kept at nominal drive, bounded within 4 dB at full drive
- Aliasing floor measured at minus 131 dBFS at full drive; pre-emphasis and de-emphasis keep the added top gentle
- Auto holds loudness within plus or minus 0.5 LU across the whole Drive range
- Auto holds the same window across a 24 dB input-level window, minus 24 to minus 6 dBFS
- Input calibration tracks program loudness with BS.1770 weighting and normalizes the drive operating point
- Program-dependent bias gives sustained material a slight bloom
- Transient-aware ease protects the first milliseconds of every hit
- Power off passes the input bit-exactly; Drive 0 and Mix 0 are bit-exact nulls
- Fixed latency of 6 samples, 0.125 ms at 48 kHz, reported exactly and compensated by every host
- 12 source-named starting points
- VST3, AU and AAX on Windows 10+ and macOS, Intel and Apple Silicon

Installation on Muse Hub

This Muse Hub edition is free and needs no license key, account, activation or trial: it opens and runs directly, and the status chip in the plugin reads MUSE HUB. Muse Hub installs and updates it for you. On Windows the plugin installs as a VST3. On macOS the installer places VST3, AU and AAX builds in the standard system plugin folders. If the plugin does not appear in a host, rescan plugins, confirm the host is 64-bit, and in Audacity enable it in the Plugin Manager.

Requirements: Windows 10 or later (64-bit) or macOS 11 or later, Intel or Apple Silicon. Settings and presets are the same as the edition sold at vitricaudio.com, so projects open in either edition.

Frequently asked questions

Does Drive change the low end?

No. Energy from 20 to 120 Hz holds within plus or minus 0.5 dB at nominal drive, measured at 0.06 dB or less of movement on 808, kick and bass material. The dry path is a bit-exact delay line and the harmonics live in a separate residual.

Does it get louder as I push it?

Auto holds loudness within plus or minus 0.5 LU across the whole Drive range and across a 24 dB input-level window, so the knob changes density, not level.

How much latency does it add?

6 samples, 0.125 ms at 48 kHz, reported exactly to the host and compensated by every host. Verified by impulse cross-correlation against the host report.

Are there modes or styles to choose?

No. Drive morphs one continuous voice: mostly second-order warmth low on the dial, controlled upper harmonics arriving as you push, with a spectral ceiling that darkens slightly as drive rises.

Which formats and platforms?

VST3, AU and AAX on Windows 10+ and macOS, Intel and Apple Silicon. That covers Pro Tools, Logic Pro, Ableton Live, Cubase, Studio One, FL Studio, REAPER and every other major host.

Support: support@vitricaudio.com · Product page: <https://vitricaudio.com/stoke> · Vitric Audio, Cleveland, Ohio. This guide describes Stoke Saturator 0.2.0 as distributed on Muse Hub.