SNAKEPIT

Tube channel strip · by Pointless Audio



WHAT IT DOES

SnakePit is a tube channel strip: one input channel of a console that never existed, built around a single valve. Put it on a track, set the input level with the three lamps, and decide how much character it adds — from "this went through real hardware" clean, through warm and dense, to openly saturated.

The valve is where the character comes from. It's a physical model of a triode — an original design, not an emulation of one specific unit — and the rest of the chain exists to serve it: put the right level in front of it, catch what comes out the other side. In front sit a high-pass and an iron DI stage you can switch off; after the valve, two compressors in series — PEAK fast for grip, BODY slow for weight — then the COLOR tilt and the HF AIR shelf, an output transformer stage, a tape polish, and an optional safety limiter on the way out.

With AUTO GAIN on, it keeps the loudness anchored while you do all this, so every control is a tone decision: turn DRIVE up and the sound gets denser and rounder, not louder. You can push hard and trust that what you're hearing is character, not level.

It is not an amp sim, not a cabinet sim, and not four machines in one — it sounds like one machine, and the controls change how hard you push it. It was born around a bass DI, and bass is still the thing it was built for: the low end carries a gentle lift from the DI stage and a second one, at about 90 Hz, from the output transformer stage. The valve doesn't care what you feed it — drums, voice, brass, synths and a full mix all work, and the DI color is a switch, not the point.

FORMAT	VST3 · AU · CLAP · AAX (macOS Universal Binary) · VST3 · CLAP · AAX (Windows x64) · VST3 · CLAP (Linux x86_64)
OS	macOS 10.13+ (Intel) · macOS 11+ (Apple Silicon) · Windows 10+ (64-bit) · Linux x86_64 (glibc of Ubuntu 24.04 or newer)
PARAMS	16 automatable parameters · 14 factory presets
CHANNELS	Mono or stereo, same layout in and out
LATENCY	69 samples at 44.1 kHz, 73 samples at 48 kHz (about 1.5 ms), reported to the host

START HERE: THE THREE LAMPS

Everything in SnakePit depends on hitting the valve at the right level, so the first thing to learn is the row of three lamps above GAIN.

- **Green** — signal is arriving (peaks above about −40 dBFS).
- **Yellow** — you are in the right place. This is the level the whole plugin was voiced at: the average level, read after GAIN, has reached about −21 dBFS (−3 VU, where 0 VU is −18 dBFS).
- **Red** — the average level is above the working point, about −16 dBFS (+2 VU). Come down.

The three lamps are a scale: green, then green and yellow, then all three, as the level goes up. Yellow and red read the average level with VU ballistics (about 300 ms), not single peaks, so red does not flash on individual hits. **Yellow on with red dark means the input level is right.**

Set GAIN so yellow is on and red is dark, then forget it and use the rest of the plugin. If you are feeding a modern master that already sits loud, you will need to bring GAIN *down*, not up, to find yellow.

If your source is very quiet, GAIN may not have enough range on its own — put some gain in front of SnakePit in your DAW and then set the lamps.

PARAMETERS

Sixteen controls across the four panel sections — INPUT, TUBE PRE, COMPRESSOR and OUTPUT. All of them are automatable. Where the panel name and the host automation name differ, the automation name is in brackets.

PARAMETER	RANGE	DEFAULT	WHAT IT DOES
GAIN *(Input)*	0–10 dial · ±20 dB	5 (unity)	Drives the valve — with AUTO GAIN on it changes tone, not loudness
D.I. BOX *(DI)*	on / off	on	Front-end color: weight down low, a little presence on top
HI-PASS *(Low Cut)*	Off / 40 / 80 / 120 Hz	Off	High-pass ahead of the valve — protects as well as tidies
DRIVE	0–100%	28%	How hard the valve is pushed
COLOR	0–100%	50%	Tone of the whole machine, dark to bright
PEAK	0–100%	0%	The fast compressor — grip on the transients
BODY	0–100%	0%	The slow compressor — weight on the sustain
MIX *(Comp Mix)*	0–100%	100%	Parallel blend of the compressed signal
COMP ON	on / off	on	Takes the compressor out, keeps the knobs
FAST / SLOW *(Comp Fast)*	toggle	FAST	Release of the slow compressor
TAPE	0–100%	0%	A polish, not an effect
HF AIR	0–100%	12%	A shelf at 8 kHz that opens the top end, 0 to +6 dB
MASTER *(Output)*	0–10 dial · ±20 dB	about 4 (−4.2 dB)	Sets the level — with SOFT LIMIT on, past a point the limiter does the work
SOFT LIMIT *(Limiter)*	on / off	off	Safety ceiling on the output. The factory presets switch it on
AUTO GAIN	on / off	off	Keeps loudness anchored while you shape the tone. The factory presets switch it on
BYPASS	on / off	off	The whole plugin out, timing-matched. It is also the host's bypass

GAIN AND MASTER

Both dials are marked 0 to 10. That's a scale, not decibels — the parameters underneath run ±20 dB, so **5 is unity** and either end is twenty decibels away. In a new instance and in Init, MASTER starts at about 4 (−4.2 dB): with AUTO GAIN and SOFT LIMIT off, steady program, such as pink noise at −18 dBFS, then comes out at about the level it went in; the gain changes with the level of the material, so other material can come out louder or quieter. With AUTO GAIN on, 5 is unity. They have different jobs and it's worth knowing which.

GAIN pushes the valve. With AUTO GAIN on it barely changes how loud the plugin is — it changes how hard the valve is working. That's the point: you drive with GAIN and the output stays where you put it.

MASTER sets the level and doesn't push anything. With SOFT LIMIT on, the limiter starts to act somewhere between about 5 and 14 decibels above the default working point, depending on how peaky the source is: about 5 dB on a drum bus, about 9 dB on a bass DI, about 14 dB on a sine. By then the output needle is already pinned at the right end of its scale (+3 VU): it will keep getting louder, but you're listening to the limiter, not the valve.

(The panel says GAIN and MASTER; the host automation parameters are Input and Output.)

HI-PASS — OFF / 40 / 80 / 120

A high-pass at the very front, before the valve, so it protects as well as tidies. It is a 12 dB per octave filter. A fixed 30 Hz high-pass is always in the chain, whatever the position.

- **Off** — the selectable cut is out; only the fixed 30 Hz high-pass remains. It is a gentle filter: with the DI out, a five-string's low B (30.9 Hz) is about 5.5 dB down and the low E of a four-string about 1.5 dB.
- **40** — stage rumble and handling noise, without touching the low E of a four-string.
- **80** — the DI voicing of earlier versions. Tightens a bass, keeps the body.
- **120** — for voice and guitar: plosives, proximity boom, and the rumble under the low string.

The three numbers are the filter's own corners. Where you actually *hear* the cut also depends on where COLOR is sitting, because both work on the same low end — so trust your ears over the number, and pick the position that sounds right rather than the one that matches a frequency you had in mind.

(The panel says HI-PASS; the host automation parameter is Low Cut.)

DI BOX

The front-end color: a lift in the low end and a little presence on top. It's what makes a DI'd bass sound like it went through something instead of straight into the converter.

On bass and drums it's about a decibel and a half of extra weight down low, and that's where it earns its place. On a voice it also softens the presence band a touch — the consonants — which is why the Vocal factory preset leaves it out. Turn it off if you want the source back plain.

(The panel says D.I. BOX; the host automation parameter is DI — on means in.)

DRIVE

How hard the valve is pushed. Low is warm and mostly clean; as you go up the transients start to round off and the harmonics come forward. Below about 5% the valve is taken out of the path. From about the middle of the travel you're in saturation on purpose — the flattening of the transients *is* the effect at that point, not a mistake.

COLOR

The tone of the whole machine, dark to bright: a low shelf at 180 Hz (+3 dB to −3 dB) and a high shelf at 4.5 kHz (−2 dB to +2 dB), plus a top-end roll-off that moves between 14 and 18 kHz. Turn it down and the low end fills out and the top softens; turn it up and it opens and thins. AUTO GAIN does not compensate it, so its level shift is part of the tone change; use your ears rather than expecting it to stay put.

PEAK, BODY, MIX, COMP ON — THE COMPRESSOR

Two compressors, one after the other. **PEAK** is the fast one: it catches transients and adds grip. **BODY** is the slow one: it leans on the sustained part and adds weight. Both knobs set *how much*, never how fast.

Two things to know, because they aren't obvious:

They are in series, and the fast one goes first. BODY works on whatever PEAK leaves behind. The higher PEAK goes, the less is left for BODY: with PEAK past three-quarters, BODY does about a quarter of what it does on its own. **If you want the slow compressor's character, keep PEAK low.**

Both need level to bite. Their thresholds are fixed, so how far you have to turn them depends on how hard you're going in. At the calibration level — yellow lamp on — both start working from the first notch: around 30% each is a light couple of decibels of gain reduction, and they grow evenly from there. Feed it ten decibels quieter and the first half of each knob goes quiet. If a knob feels inert, look at the lamps first.

MIX blends the compressed signal back against the untouched one, for parallel compression. The gain-reduction meter follows what you actually hear, so as you bring MIX down the needle comes down with it.

COMP ON takes the compressor out without losing where PEAK and BODY are set — it's there for A/B, not for tone.

FAST / SLOW

The release of the slow compressor. **FAST** is the default and is how the plugin has always behaved. **SLOW** holds on longer — up to about five decibels more tail on a sustained note. It's the one switch here that clearly changes the sound.

TAPE AND HF AIR

TAPE is a polish, not an effect: a gentle squeeze (2:1, slow), a little saturation, and a softening of the very top (a roll-off that moves from 14 kHz down to 10 kHz as TAPE goes up). At 0% the stage is skipped. **HF AIR** is a shelf at 8 kHz that opens the top end, from 0 to +6 dB; the default of 12% is about +0.7 dB.

AUTO GAIN

Off in a new instance and in Init; the factory presets switch it on, and so do projects saved before this change, which open as they were. When it is on, it's the reason the plugin doesn't get louder every time you turn something up. It compensates the level the character stages add, so an A/B against bypass is a comparison of *tone*, not of volume.

Turn it off if you want to hear the raw gain structure. COLOR is not compensated — it's a tilt, and its level shift *is* the tone change. Everything else is, DI BOX included: engaging the DI changes the sound, not the loudness.

SOFT LIMIT

A safety ceiling on the output. It is off in a new instance and in Init; the factory presets switch it on, and so do projects saved before this change, which open as they were. With it on, nothing leaves the plugin above −0.1 dBFS — not even the first hit after silence. It looks one millisecond ahead to catch a front before it arrives; that millisecond is part of the latency the plugin reports, so your DAW lines it up for you.

With it off the plugin can go past full scale — that's your choice to make, and your DAW's problem to catch. If you like the crunch of a pushed output clipping in the DAW, that's the way to get it.

(The panel says SOFT LIMIT; the host automation parameter is Limiter.)

BYPASS

Bypasses the whole plugin, and the dry signal is delayed to match — so switching back and forth compares the sound and not the timing.

FACTORY PRESETS

Fourteen starting points. The first eight store no GAIN or MASTER value of their own: loading one puts GAIN and MASTER back at 5 (0 dB) — except Init, which puts MASTER at about 4 (−4.2 dB) — and the input level is yours to set with the lamps afterwards — that's the first gesture of the plugin, and a preset that carried its own input level would be wrong on any source but its own. The last six, by Andi, are the exception and are described below the table. Every preset leaves BYPASS alone.

PRESET	WHAT IT'S FOR
Init	The plugin's own defaults, with AUTO GAIN and SOFT LIMIT off, and MASTER at about 4 (−4.2 dB).
Clean Lift	A touch of valve and nothing else — DRIVE at 10%, DI out, compressor still, no tape, no air. The point of departure for hearing what everything else does.
Warm Glue	Mix bus. Gentle compression from both stages kept low (PEAK 20%, BODY 20%), HI-PASS at 40, DI out, a little tape and air.
Bass DI	Weight from the slow compressor (BODY 50% leads, PEAK 25%), HI-PASS left off so a four- or five-string keeps its fundamentals.
Bass Tight	The other half of bass: articulation instead of weight. The fast compressor leads (PEAK 43%), BODY stays off, and HI-PASS sits at 80.
Drum Bus	Push hard and blend back — MIX at 45% is the point of this one, not a detail. PEAK 48%, BODY off, HI-PASS at 40, DI in, for the extra weight down low.
Vocal	The optical case: BODY leads (50%) with PEAK low (20%), the release on SLOW, HI-PASS at 120 for plosives, DI out to keep the consonants.
Brass	Lots of mids and hard attacks, so the two stages share the work (PEAK 35%, BODY 25%), HI-PASS at 120.
Beat Box	By Andi. A drum sound pushed hard and gone to tape: GAIN 2.8 (−8.6 dB), HI-PASS 40, DRIVE 64.6%, COLOR 44.3%, PEAK 0%, BODY 19.3%, MIX 54.5%, TAPE 100%, HF AIR 0%, MASTER 4.5 (−1.8 dB), DI out, FAST.
Cookie Slice	By Andi. Compression from both stages and a lot of air: GAIN 5.9 (+3.6 dB), HI-PASS off, DRIVE 45.3%, COLOR 19.3%, PEAK 70.5%, BODY 66%, MIX 100%, TAPE 75.1%, HF AIR 76.2%, MASTER 4.9 (−0.4 dB), DI out, FAST.
Fireball	By Andi. Body and tape with little drive: GAIN 7.0 (+8.2 dB), HI-PASS 40, DRIVE 22.7%, COLOR 0%, PEAK 0%, BODY 94.4%, MIX 54.5%, TAPE 77.2%, HF AIR 0%, MASTER 4.7 (−1.4 dB), DI out, FAST.
Piano Placement	By Andi. Light and soft: GAIN 2.0 (−11.8 dB), HI-PASS 120, DRIVE 28.8%, COLOR 42%, PEAK 14.1%, BODY 62.3%, MIX 56.8%, TAPE 15%, HF AIR 15%, MASTER 5 (0 dB), DI out, SLOW.
Tele Tube	By Andi. A dark, saturated tone: GAIN 5.0 (0 dB), HI-PASS 80, DRIVE 52.3%, COLOR 12.5%, PEAK 60%, BODY 0%, MIX 100%, TAPE 68.2%, HF AIR 47.3%, MASTER 4.8 (−0.9 dB), DI in, FAST.
Vocal Stab	By Andi. A saturated voice: GAIN 3.8 (−5 dB), HI-PASS 80, DRIVE 34.5%, COLOR 50%, PEAK 17.1%, BODY 21.6%, MIX 100%, TAPE 92.8%, HF AIR 10%, MASTER 5 (0 dB), DI in, SLOW.

The last six presets were made by Andi, a beta tester, and chosen from the ones he sent. Their sound is his, and unlike the first eight they carry their own GAIN and MASTER, as he set them: after loading one, check the lamps. Only in Cookie Slice and Tele Tube was MASTER moved, to bring their level in line with the other presets. In all six the compressor, AUTO GAIN and SOFT LIMIT are on.

Each one is a sound you refine with the two or three knobs it points you at, not a finished picture.

THE BOTTOM BAR

Under the panel: the preset menu (factory presets first, then your own), SAVE for your own presets, A and B to swap between two states, INIT to put every parameter except BYPASS back to its default, and the S, M and L buttons for the window size (642 × 329, 856 × 428 and 1141 × 560 pixels). Dragging a dial shows its value as text: dB for GAIN and MASTER, percent for the rest.

THE METERS

The VU at the top of the OUTPUT section reads the output, from −20 to +3 VU, with 0 VU at −18 dBFS. The meter at the top of the COMPRESSOR section shows gain reduction from the two compressors together, 0 to 20 dB; it follows MIX, and goes dark when COMP ON is off or BYPASS is on. The tube lights up with DRIVE, starting where the valve comes into the path.

HOW IT WORKS

For the curious. You don't need any of this to use it.

The chain has one job before it has any other: put the right level in front of the valve. That's why GAIN and the lamps come first, why AUTO GAIN exists, and why the compressor sits after the valve rather than before it. The valve makes the character; the dynamics keep it in the window where it sounds good instead of competing with it.

The selectable high-pass sits at the very front, ahead of everything non-linear. That isn't only tidiness. A very low note that reaches a valve comes back out as its own harmonics an octave or two up — you lose the fundamental and keep the buzz. Cutting before the valve means those harmonics are never made in the first place.

The low end has a gentle rise at about 90 Hz (a resonance at 87 Hz in the output transformer stage, +0.5 to +1.5 dB depending on the signal) and then falls away below. That shape isn't an accident: it's built to follow what iron does at the bottom of its range, with a filter whose gain follows the level of the signal.

DESIGN NOTES

- **The dials say 0 to 10, not decibels.** That's the console convention — 5 is unity and either end is twenty decibels away. The lamps tell you where you are; the numbers just give you somewhere to come back to.
- **The soft limit looks ahead.** Up to v1.4.1 it only reacted, and the first swing of a sudden front could slip past the ceiling. Since v1.4.2 it holds the ceiling on every sample, and pays for it with one millisecond of latency that the host compensates. It's still a seat belt, not a mastering limiter.
- **BODY lives downstream of PEAK, by design.** The fast stage goes first, so the higher PEAK goes, the less the slow one has to work on. That's not a bug to fix — it's how a chain of two compressors behaves. Keep PEAK low when you want the optical character.
- **Since v1.5.0 PEAK and BODY start where the knob starts.** Before, the compressor's thresholds sat a few decibels above the level the valve hands it: BODY did nothing until about halfway, PEAK very little until a third. They also work the same with AUTO GAIN on or off, and DRIVE no longer moves the compressor's threshold. The factory presets were retuned to match.
- **AUTO GAIN leaves COLOR alone.** COLOR is a tilt, and its level shift is the tone change itself; compensating it away would fake the comparison it exists to let you make. The DI used to be exempt for the same reason — but it ships engaged, so its level never got compared, it just made the plugin louder than its own bypass. Since v1.4.1 it's compensated like every other character stage.
- **It's an original design.** There is no emulation target and no captured unit: valve-and-transformer behavior in general, tuned by measurement and kept honest by ear.

INSTALLATION

MACOS

Double-click the `.pkg` installer in the download — it places the VST3, AU, CLAP and AAX in the standard system folders (the AAX, for Pro Tools, in `/Library/Application Support/Avid/Audio/Plug-Ins/`), and the Customize step lets you pick which formats to install. Rescan in your DAW, or restart it. The plugin is signed and notarized.

WINDOWS

The zip holds the three formats. Copy the `PA SnakePit.vst3` folder from the zip to `C:\Program Files\Common Files\VST3\`, `PA SnakePit.clap` to `C:\Program Files\Common Files\CLAP\` if your DAW speaks CLAP, and the `PA SnakePit.aaxplugin` folder to `C:\Program Files\Common Files\Avid\Audio\Plug-Ins\` for Pro Tools — or just the one your DAW uses. Rescan or restart. Windows binaries are not Authenticode signed — if your system objects, allow it and carry on.

PRO TOOLS (AAX)

The AAX format is a real-time insert, in Pro Tools on macOS and Windows. It has no AudioSuite version.

LINUX (BETA)

The zip with the Linux build holds the VST3 and the CLAP, no installer. Copy the `PA SnakePit.vst3` folder to `~/.vst3/` and `PA SnakePit.clap` to `~/.clap/` (create the folders if they don't exist), then rescan in your DAW. x86_64 only; built on Ubuntu 24.04, so a distribution with an older glibc may refuse to load it. It is a beta: checked with automated tests, not yet in a real DAW.

No iLok, no account, no phone-home.

TROUBLESHOOTING

A knob feels like it does nothing — Look at the lamps. Most of SnakePit's controls have fixed thresholds, so they respond to how hard you're going in. Yellow on, red dark or only flickering, then try again.

BODY does very little — Check PEAK. The two compressors are in series and the fast one goes first: with PEAK up high there is little left for BODY to work on. Keep PEAK low for the slow character, and check the lamps.

It gets loud past a certain point on MASTER — With SOFT LIMIT on, that's the limiter. When the output needle sits pinned at the right end of the scale, MASTER is buying you loudness and not headroom.

Yellow never lights — Your source is either too quiet or too loud for GAIN's range on its own. Add or remove gain in the DAW before the plugin.

The plugin sounds louder than bypass — Check AUTO GAIN: a new instance and Init start with it off, the factory presets switch it on. If it is on, the culprit is usually COLOR, which is not compensated by design.

macOS says the plugin can't be opened — The build is signed and notarized, so a normal install never asks. If you moved files around by hand and Gatekeeper objects, clear the quarantine flag: `xattr -dr com.apple.quarantine "/Library/Audio/Plug-Ins/VST3/PA SnakePit.vst3"`

Windows flags the download — The Windows binaries are not Authenticode signed. SmartScreen may object once: allow it and carry on.

The plugin doesn't appear in the DAW — Rescan the plugin folders or restart the DAW; some hosts cache their plugin list aggressively.

CREDITS

The End User License Agreement and the third-party notices are in `LICENSE.txt` in the download.

The last six factory presets (Beat Box, Cookie Slice, Fireball, Piano Placement, Tele Tube, Vocal Stab) are by Andi, a beta tester.

SnakePit is an original design inspired by the behavior of valve and transformer circuits in general. It is not an emulation of, affiliated with, or endorsed by any manufacturer. Any names of studios, devices or companies that appear in our writing about this plugin are used only to describe a sound, and remain the property of their respective owners.

SUPPORT

Bug reports / feature requests: hello@pointlessaudio.studio · https://pointlessaudio.studio/support/
Web: https://pointlessaudio.studio

Pointless Audio pointlessaudio.studio

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