Swanky Amp Pro User's Manual

This manual covers the use of the **Swanky Amp Pro** plug-in. You will also find general information about guitar amplifiers and tone building to help you get the most of Swanky Amp Pro.

Installation

Windows installation

Download the <u>installer</u>, run it, follow the prompts.

Alternatively, to install the plug-in file directly, download the file and move it into `C:\Program Files\Common Files\VST3`.

macOS installation

Download the <u>installer</u>, run it, follow the prompts. Most audio software on macOS (e.g. GarageBand, Ableton ...) supports the `AU` plug-in format. Some 3rd party software might support only the `VST3` plug-in format.

Alternatively, to install the `AU` plug-in directly, download the zip file and extract it inside `/Library/Audio/Plug-Ins/Components/`. In the case of the `VST3` plug-in, download the zip file and extract it inside `/Library/Audio/Plug-Ins/VST3/`.

Quick Start Guide

Edge-of-breakup

Here are some basic steps you can take to get started with a good edge-of-breakup guitar tone in Swanky Amp Pro. An edge-of-breakup tone offers a great foundation on which to build wilder tones.

Set the `input` level: strum the guitar lightly, and set the control such that the meter peaks around `S` or `H` for a single coil or humbucker pickup.

Adjust the pre amp `drive`: do some heavy strumming and listen for the attack to sound distorted, while the ringing out of the chord sounds clean. If no pedals are loaded, this should cause the input (blue) signal on the scope to rise above the output (orange) signal momentarily.

Set the tonestack as desired: start with the `mode` control to chose the type of tonestack: 1) Fender-like mid scoop, 2) Marshall-like mid boost, 3) Vox-like bright highs. Now scoop `mid` for a clean acoustic tone, or a modern metal tone; boost `mid` for an aggressive crunch tone; boost `high` for some chime; or boost `low` to add some weight to the tone.

Adjust the power amp `drive`: the power amp starts to add nice saturation (and compress the signal) at values around 4. Pick a note lightly and listen for the compressed attack followed by a saturated swell.

At this point you should have a nice edge-of-breakup tone: when you play softly, your guitar sounds clean. But when you hit the strings harder, the amp breaks up giving rise to some very dynamic sounds.

Sculpt your tone

- Add any effects pedals you have in mind
- Push the pre amp drive higher for more crunch
- Push the power amp drive higher for more saturation, or really high for all out fuzz
- Experiment with the `grit` and `tight` knobs in both amp sections to find different distortion sounds
- Experiment with the `stage` and `filter` options to voice the pre amp differently
- To change the overall frequency response, experiment with the cabinet options

Bigger-than-life stereo

Toggle on the stereo edit mode.
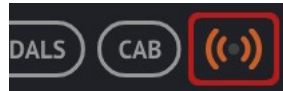
Add some spread to the tone stack for a subtle stereo effect: boost the `mid` and `high` in the left channel, and boost the `presence` in the right channel to balance it out.
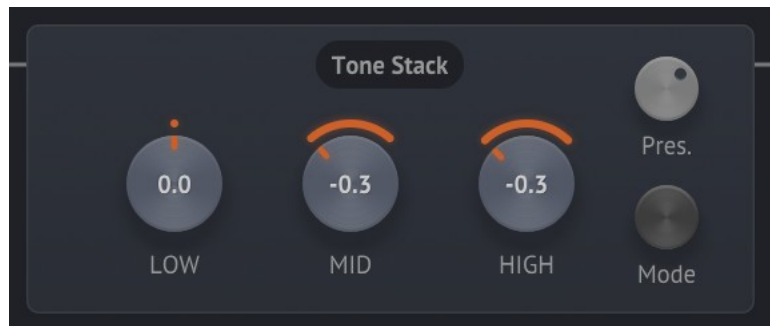
Add some spread to the drive for a more obvious stereo effect:

Presets

You can <u>click here</u> to download the latest factory presets. Or you can delete your presets directory to force the plug-in to re-populate it with factory presets (you should backup your custom presets first). The preset directory can be found by clicking the ⬈ icon beside the preset selector.

User Interface (UI)

There are three sections to the UI:

1. The top bar
2. The plug-in controls
3. The tab area

The tabs can be selected using the tab buttons in the *top bar*. The content in the *tab area* will change accordingly to reveal the controls related to the selected tab. As such, the top bar is always visible to allow navigating between the various tabs.

The controls in the *plug-in controls* section relate to the plug-in as a whole. As such, those controls are also always visible such that they can be tweaked at any time.

Top Bar

Presets

The preset selection menu allows you to select a preset. It displays the name of the currently selected preset.

The buttons to the right function as follows (in order): load the `previous` preset, load the `next` preset, create a `new` preset, `save` over the current preset, `open` the preset directory. When creating a new preset, a dialogue will allow you browse to the desired file location. When overwriting a preset, a dialogue will ask you to confirm the action.

The presets menu shows you the files in the preset directory. You can make sub-directories in the preset directory, and they will show up as sub-menus.

> NOTE: the preset selection shows the preset names sorted alphabetically as seen in the preset directory. If you want to delete a preset, delete the corresponding file. If you want to re-order presets, rename them starting each file name with a number.

The `input` level and `cab toggle` parameters are not saved in the presets. These parameters tend to be global to a session. For example, if you switch guitars, you need a different input level, regardless of which preset you are using.

> TIP: if you have a series of presets you want to quickly switch between (e.g. for a gig), you can copy them in a directory (under the preset directory), number them, and then you will be able cycle between them using the `previous` and `next` buttons.

Tabs

The tab buttons allow you to switch between viewing the controls related to the amplifier, pedals and cabinet. The amplifier tab also contains the tone stack, and the cabinet tab also contains the stereo mix controls.

Stereo Edit Mode

When this button is toggled on, part of its icon turns orange. The UI is then in *stereo edit mode*.

While in stereo edit mode, the controls change to represent the stereo spread of their corresponding parameter. If a control is centered, its parameter has no stereo spread: the parameter affects the left and right channels in the same way. If the control is moved to the left, the parameter is increased in the left channel, while it is decreased in the right channel, and vice versa.

For example, when in *stereo edit mode*, moving the power amp's `drive` to the right adds distortion to the right channel and decreases the distortion in the left channel.

Some controls are greyed out (disabled) when stereo edit mode is toggled on. This means that their parameters cannot be changed independently in the left and right channels.

When adding a lot of stereo spread to some parameters, the stereo mix will sound unbalanced: either the left or right channel will sound louder. This can be corrected in the cab tab, as described in that section of the manual.

> NOTE: the signal is treated as mono coming from the guitar and going through the pedals. Once it reaches the amplifier section, it is split into a left and right channel. There are in effect two amplifiers working on it, one for each channel. By default, both amplifiers are configured identically, and changing a parameter while **not in** stereo edit mode changes its value equally in both amplifiers. However, when **in** stereo edit mode, changing a control affects the parameter differently in left and right amplifiers, leading to stereo spread.

Plug-in Controls

The controls shown in this section of the UI affect the overall behaviour of the plug-in.

Noise Gate

The noise gate allows you to automatically mute the plug-in when the input signal is quiet. This is used to reduce the noise coming from the guitar in moments when it is not being played.

To use the noise gate, with the guitar plugged-in and its volume knob turned up, increase the gate's `level` until the guitar's hum goes away. Then play some chords and tweak both the controls to get a good sound. Leave time between the chords to see if the gate closes too fast, or if too much noise is heard in those moments.

> TIP: both the `level` and `tight` controls affect how quickly the gate opens and closes. Once you have found the noise level beyond which the gate closes when the guitar isn't played, you will probably want to set the `level` control slightly higher than that. This will ensure the gate opens and closes more rapidly, instead of wavering between being just above then just below the threshold.

Increasing the `tight` control affects how long it takes for the level to climb and drop down once the signal is low. A small `tight` value can lead to abrupt changes (even some sawtooth behaviour). A large `tight` value can lead to too much noise being heard while the guitar isn't played. There is a trade-off to be made, and it depends on your style of playing and how noisy is your recording setup.

When the gate's `level` is at `0`, it is completely disabled.

> NOTE: as opposed to a noise gate inserted at the start of the signal chain, this noise gate turns down the **output** (not the **input**) level of the plug-in. In both cases, the gate is triggered when the input level is low. But if the gate controls the input signal, then while it is ramping up an ddown it can have an audible effect on the amplifier's distortion and overall tone. Instead, by controlling the output level, the amplifier's tone remains consistent as the gate is ramping up and down.

Staging

The `input` and `output` controls directly affect the plug-in's input and output levels. The values are in decibels, and they range from −35 to +35 dB.

It is important to gain stage the input signal before working on your tone. Strum the guitar lightly and adjust the input level such that the input meter peaks at either the `S` or `H` tick. Aim for the `S` tick if you are using a single-coil (or low output) pickup, and the `H` tick if you are using a humbucker (or high output) pickup. If you aren't sure, it's a safe bet just to aim for a peak between the two ticks.

Just as with a real tube amplifier, Swanky Amp Pro's tone depends strongly on the input signal level. If you've got your audio interfaced turned down, and you work on a preset without first setting the input level correctly, you might find that preset sounds completely different later when you've got your audio interface volume back up.

> TIP: in a typical guitar recording setup (using an audio interface and adjusting its gain so that the signal isn't clipping there), you will often need to add about 10 dB to the input level. But this can vary a lot for different guitar pickups and signal chains.

Now you can set the output level to an appropriate value for your situation. Lots has <u>been said</u> about metering, but keep in mind that a guitar signal with drive will usually be fairly compressed, so it won't need as much overhead as something like an acoustic guitar or vocals.

> NOTE: with a physical (tube) amplifier, the volume knob affects not only the output level, but also the power amp distortion (and hence overall tone). In Swanky Amp Pro, the distortion is controlled with the power amp's `drive`. In effect, increasing the `drive` increases the power amp's output, while compensating by decreasing the plugin-in's output. This is all done behind the scenes (and for more than just the `drive` control), so that you can worry about setting your tone, then setting your output level independently.

Tooltip Area

This part of the UI displays tooltip messages about the various controls. The message is shown for a control when the mouse cursor hovers over that control.

The messages are brief, and convey critical information about a control's usage. In a pinch, you can rely on those messages instead of reading this manual. But if you're reading this then that means ... never mind.

Amplifier

The amp tab contains the typical controls associated with a guitar amplifier, customization options unique to Swanky Amp Pro and a scope to help you visualize the effect of the amplifier on the input signal.

> TIP: many of the unique controls in this section affect the amplifier's underlying circuitry and even its tubes. In a typical amplifier plug-in, to get that kind of variety you usually need to load (or sometimes buy) a different amplifier model. In Swanky Amp Pro, you can turn a knob and discover new amplifier configurations.

Scope

The scope shows two signals: the input signal in blue, and the output signal in orange. The output signal is normalized such that changing the plug-in's output level doesn't impact it. The input signal is taken after the pedals: changes to the input level and effect pedals will impact it.

With no pedals in the signal chain, when the blue signal is above the orange signal, the amplifier is adding distortion and compression. When the orange signal is above the blue signal, the amplifier is adding sustain. By contrast, when both signals overlap and follow one-another, the amplifier usually sound fairly clean.

> TIP: you can use the scope to find a good edge of breakup tone: if you strum (or pick) hard and see the blue signal rise above the orange signal, shortly followed by the two signals overlapping and following one-another, then the amplifier is at the edge-of-breakup. Of course you should always rely on your ears, but this cue can be helpful anyway.

Pre Amp

In tube amplifiers, there are two sets of tubes used which typically differ significantly: the pre amp tubes and the power amp tubes. Overdriving the pre amp tubes is what typically leads to the crunchier distortion sound. The onset of this distortion is usually abrupt: hitting the strings hard will result in a distorted sound, and as the sound decays, the distortion gives way to a clean tone.

The `drive` control affects how large is the signal going into the pre amp. Above some level, the input signal will exceed the tube's overhead room leading to distortion.

> NOTE: the gain knob on modern amplifiers increase the signal going into the pre amp. But this also increases the signal going into the power amp, meaning the amp becomes louder. Usually then, to add just distortion, the gain is increased the volume is decreased. With Swanky Amp Pro, the pre amp's `drive` does these two things together: it increases the signal going into the pre amp, and compensates for it such that the signal going into the power amp stays the same. This way the two can be driven completely independently.

The `tight` control affects the timescale on which the tubes respond to large signals. This is related to both the tubes and capacitors used in the pre amp.

The `grit` control affects the amount and sharpness of the tube's overhead. A higher value for the `grit` control leads to a quicker onset of distortion, and a crunchier sound.

The `stage` control selects the number of pre amp tubes, and blends between them. Each tube is voiced differently (the frequency response differs slightly), so the overall tone of the pre amp can be modified by selecting a different number of stages.

Setting the `stage` control to the maximum value of `5.1` introduces a cold bias. This means that one of the tubes clips the signal even when it is small, meaning that the distortion is more persistent and pronounced.

> TIP: the cold bias is the key to modern sounding hi-gain tones. Not only does it add distortion, it also changes the sound of the distortion by extending the lows and highs in the signal. This won't quite get you a full-on chugging tone, but it does offer a wide range of satisfying hi-gain options.

The `filter` control affects the amount of low-end removed at each pre amp stage. The more stages are active, the more pronounced the effect. This is often called the *contour*, and it is common for moders to change this value in physical tube amplifiers.

Tone Stack

The tone stack emulates typical equalization circuits in the style of Fender, Marshall and Vox amplifiers. The particular tone stack style is controlled with the `mode` control. Set to 1, the circuit is in the style of a Fender tone stack; set to 2, it is in the style of a Marshall tone stack; and set to 3, it is in the style of a Vox tone stack.

In any case, the `low`, `mid` and `high` controls add or remove from their respective part of the frequency band. The exact shape of the equalization depends on the `mode`. The lows tend to range in the low 100s of Hz, the mids range in the low 100s to the low 1000s of Hz, and the highs tend to include frequencies above 4 kHz. The `presence` control boosts or cuts frequencies around 4 kHz.

The Fender tone stack is known for its mids scoop: the mid frequencies are subdued, leading to a cleaner and more acoustic tone. The Marshall tone stack is known for its boosted mids: the mid frequencies are boosted, leading to a more aggressive tone that doesn't clash as much with the bass and drum crash. The Vox tone stack is known for its bright character.

> NOTE: the tone stack shapes the signal before it enters the power amp. In the case that the power amp is overdriven, the resulting distortion can significantly alter the underlying frequency content. This means that tone stack controls have a lesser impact when the power amp is overdriven.

> NOTE: certain amplifiers implement presence control in different ways, or not at all. In the case of Swanky Amp Pro, it's simply a boost or cut near 4 kHz. Moreover, Vox amps usually don't have a mids knob. In the case of the Swanky Amp Pro tone stack with the `mode` control set to 3, the mids control is added to what is otherwise a Vox-like tone stack.

> TIP: boosted mids on their own tend to sound a bit like the signal is coming out of a cheap telephone, which makes it tempting to scoop out the mids to get a cleaner guitar tone. But it is often beneficial to instead spend some effort to find a tone with good mids content, so that the guitar can stand out when mixed with other instruments. Moreover, the mids is where the guitar tends to sustain the longest, so a mids boosted signal into a distorted power amp can create some nice sustain.

Power Amp

As discussed in the pre amp section of this manual, the amplifier has two sets of tubes which differ significantly. The Swanky Amp Pro power stage is modelled after EL34 tubes in push-pull configuration, going into a transformer. This type of power section leads to a smoother distortion than the pre amp.

The distortion onset is more subtle, leading to compression and what is sometimes called *note bloom*. Great care has been taken to capture the distortion mechanisms that arise in this configuration, such that these subtle dynamics are well represented in Swanky Amp Pro.

The `drive` control affects how large is the signal going into the power amp. Above some level, the input signal will exceed the tube's overhead room leading to distortion.

> TIP: to get the most of the power amp's subtle dynamics, try turning down the pre amp drive, then pick a note lightly and listen for the power amp's characteristic compression. Tweak the power amp's `drive` until you can hear the attack of the note being compressed, followed by a swell accompanied by some saturation arising form the power amp's distortion.

The distortion can be tweaked with the `tight` control. As in the pre amp section, this control affects how much time it takes for the circuit to recover from dynamic effects. This has many knock-on effects and the overall change to the tone can't be succinctly explained in this manual; it's best to experiment with this control and formulate your own opinion about its effect.

In vintage amplifiers, an effect known as *voltage sag* occurs when the signal arriving at the power amp is so large that it tries to draw more power than is available. In this situation, the output level drops a bit before recovering. This is a form of compression with a unique character, and it is emulated in Swanky Amp Pro. It can be configured with the `sag` control: increase it to make the effect more dramatic, or dial it back for a flatter more modern tone. The `tight` control also affects the sag recovery time.

> NOTE: the voltage sag is most pronounced when the signal arriving at the power amp is very dynamic: that is, when it hasn't been overly compressed by the pre amp. To get a very obvious voltage sag, the pre amp drive should be low. Swanky Amp Pro allows for the effect to be greatly exaggerated; user discretion is advised when using this one.

Reverb

Swanky Amp Pro offers a stereo digital reverb as a post effect. It sits in the signal chain between the amplifier and the cabinet, meaning that it acts after the distortion and won't get muddied by overdriven tones.

The reverb is the result of layering a few different reverberation techniques, leading to a full room-like sound. It has been tailored to complement guitar tones, moderately emphasizing to the upper mids.

> TIP: use the reverb with a low mix level (around `3.5`) to add ambience to your tone.

Pedals

Swanky Amp Pro can load up to 8 pedals into the signal chain. Since only 4 can fit in the UI, you can switch between two pages of 4 pedals.

Each pedal *slot* has a drop down menu from which a pedal can be selected. The same pedal type can be used in more than one slot. The pedal in a slot can also be swapped with the pedal in an adjacent slot using the `left` and `right` buttons.

Once a pedal is loaded into a slot, its controls will be shown alongside generic pedal controls: the `mix` and the `output` controls. The `mix` control mixes the pedal's output with its input signal. This way, for any effect pedal, you can dial in the strength of the effect by tweaking the `mix`. The `output` control changes the pedal's output level. This allows you to do gain staging between the pedals.

> TIP: any pedal in Swanky Amp Pro can act as a boost simply by turning up its `output` control. If you also turn down the `mix` control, the pedal is not affecting the signal at all other than the output boost.

Compressor

The compressor pedal is loosely based on the CS-2. It acts somewhere between a compressor and a limiter, and can be very audible.

Strum some chords and turn down the `threshold` control until the louder parts of the strumming are noticeably quieter. Then, compensate for the volume reduction with the `output` control.

Tweak the `tight` control until you get a satisfying effect. Small values will reduce the attack and can help to control very dynamic playing. Large values will lead to a pumping sound and can be used to follow the musical beats.

Boost

The boost pedal is a very simple clean boost with no additional saturation. It boosts, or cuts, the signal around some frequency which is selected with the `frequency` control. The strength of the boost or cut is changed with the `boost` control.

Chorus

The chorus pedal is loosely based on the CE-2. It uses similar equalization and the same triangular LFO signal. The chorus effect delays the signal by a variable amount of time which is controlled by the LFO. That delayed signal is mixed back with the original signal.

The `rate` control affects the LFO rate. Low rates create a more ambient washing sound. The `depth` control affects the amount of delay. Large depth values are more audible. This effect can be quite overpowering, so the `mix` control should be used judiciously.

Green Overdrive

The green overdrive is based on the Tube Screamer circuit. The Tube Screamer's op-amp has been modelled, and the effect's circuit follows the same soft clipping and tone shaping as the Tube Screamer.

The `drive` control affects the strength of the effect's distortion. It also has an impact on the tone shaping. The `tone` control darkens or brightens the tone. Even at low `drive`, this effect is shaping the signal, boosting the mids and reducing the low end.

Orange Distortion

The orange distortion is based on the DS-1 circuit. The DS-1's op-amp has been modelled, and the effect's circuit follows the same hard clipping and tone shaping as the DS-1. The DS-1 also employs an interesting transistor clipping circuit which has been modelled in this effect.

The `drive` control affects the strength of the effect's distortion. It also has an impact on the tone shaping. The `tone` control darkens or brightens the tone. This effect tends to be overly bright, so the `tone` control is usually kept at lower values.

Rodent Fuzz

The rodent fuzz is based on the Rat circuit. The Rat's op-amp has been modelled, and the effect's circuit follows the same hard clipping and tone shaping as the Rat.

The `drive` control affects the strength of the effect's distortion. It also has an impact on the tone shaping. The `tone` control darkens or brightens the tone.

Cabinet

The cabinet in a guitar signal chain has a very big impact on the final tone. The signal output by an amplifier has a lot of harsh and brittle noise in the high frequencies. This gets removed and reshaped by the speaker, cabinet and microphone.

In Swanky Amp Pro, there are three ways you can use a cabinet in your signal chain: you can use the built-in cabinet model and configure it to your liking; you can use the built-in impulse response (IR) loader and load 3rd party cabinet impulse files; or you can disable the cabinet section altogether and load a 3rd party IR or cabinet plug-in after Swanky Amp Pro in your signal chain.

Shape

Guitar speaker cones tend to have a strong resonance in the upper mids, followed by a steep fall off. The `resonance` control affects the strength of that resonance. The `highs` control moves the frequency of the resonance. Increase the `resonance` to get a stronger upper mids boost. Increasing the `highs` moves that boost to a higher frequency, and as a result moves up the frequency at which the speaker cone starts cutting out the highs.

Speaker

The `size` control chooses the number and size of the speakers in the cabinet: the `4x12` option selects 4 speakers with a 12 inch diameter, whereas the `1x12` option selects 1 speaker with a 12 inch diameter. The `speaker` control selects the type of speaker cone. The `back` control selects whether or not the back of the speaker is enclosed.

> NOTE: it can be the case that an open back speaker cabinet affects the low end in non-trivial ways. This is usually the result of a wall or objects placed behind the cabinet. Swanky Amp Pro's built-in cabinet model emulates a cabinet in a large empty room, and in this situation an open back affects mainly the sub frequencies.

Microphone

The microphone section allows you to configure the type of microphone and its placement relative to the speaker cone. The `microphone` control chooses one of 4 common microphone types. The `position` control affects how far to the right of the speaker cone is the microphone placed. The `distance` control affects how far back from speaker cone is the microphone placed. The `tilt` control affects how tilted is the microphone with respect to speaker cone.

> TIP: the microphone placement has the biggest impact on the overall frequency response of the plug-in. Placing the microphone near the center of the speaker cone yields the most high frequencies. Moving it away from the center will darken the sound. Though moving it back will also reduce the lows, resulting in a different balance than moving it to the side.

Toggles

The toggles allow you to select between the 3 modes of operation: using the built-in cabinet model (`C` is ON and `IR` is OFF), using the built-in IR loader (`C` is ON and `IR` is ON), bypassing the cabinet section (`C` is OFF).

Stereo

The stereo section allows you to modify the stereo plug-in's final stereo image. The `balance` control affects the relative level of the left and right channels. Setting the `balance` to `0` will mute the right channel, and setting it to `10` will mute the left channel. The `width` control affects how much of the left and right channel get mixed together. With `width` set to `0`, the left and right channels are added together and the plug-in is outputting a mono signal. At a value of `5`, the left channel gets 50% of the right channel added to it and vice versa. At a value of `10`, the left and right channels are not mixed at all.

> TIP: if you set the `balance` to `0` and the `width` to `0`, the plug-in will act as a single mono channel. Keeping the `width` set to `0`, but changing the `balance` allows you to mix two separate channels into a mono output. For example, this can be used to balance uneven IRs.