# Voltage Amps

## Guitar and Bass Amp Bundles

## User Guide

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# Introduction

Thank you for choosing Waves! To get the most out of your new plugin, please take a moment to read this user guide. For even more information, visit the Voltage Amps product page at www.waves.com. We also suggest that you become familiar with the Waves Support pages: www.waves.com/support. There, you'll find technical articles about installation, troubleshooting, system requirements, and Waves contact information.

## *Voltage Amps*

Waves Voltage Amps provide a quick way to choose between high-quality guitar and bass amps, and control them to your liking. They offer a rich assortment of amps and cabinets that deliver a wide array of guitar and bass sounds. Despite their diversity of sound, the five Voltage guitar amps share the same controls, so you can easily hear how different amps behave with the same settings. The is also true for the Voltage bass amps: two amps in a single plugin, so you can choose an amp immediately, without loading a new component and without losing your settings.

Voltage Amps are quick and easy to use—that's the whole point. Whether you're a seasoned guitarist or bassist, familiar with the intricacies of amps, or a novice who simply wants to find the right sound, right now, Voltage Amps make it easy. And they can be used by keyboardists who don't play guitar at all.

Voltage Amps Guitar and Voltage Amps Bass each have three components: mono-to-mono, mono-to-stereo, and stereo.

### VOLTAGE AMPS GUITAR

Voltage Amps Guitar is a set of five iconic guitar amplifiers and cabinets. These amps are not modeled from specific hardware models, but rather are designed and categorized by styles of music and often by decade. Amps range from giant lead sounds emblematic of the '70s to aggressive modern-sounding amps. Each amp has three channels: Clean, Drive, and Lead.

## VOLTAGE AMPS BASS

Voltage Amps Bass is a set of two bass guitar amplifiers and cabinets. Each embodies the sound of musical era, reflecting its style and technology. *Vintage Velvet* gives you a fat, overdriven sound that ranges from Motown to Queen; *Dark Mass* is a versatile amp that runs the gamut from ’80s to present day. The controls for both amps are the same, in position and values, so you can quickly compare and choose the right amp sound.

# Voltage Amps Guitar

Voltage Amps Guitar combines five very different guitar amps in a single plugin. Switch between amps to hear their distinctive sounds. Drive, amp color, and cabinet characteristics can be precisely controlled, and each amp has a clean, drive, and lead channel. Settings remain the same when moving between amps, so it's easy to compare how each amp influences your bass sound.

## *Quick Start*

More than likely, you'll learn Voltage Amps Guitar by plugging in your guitar and turning knobs until you get a sound you like. This will get you off to a good start, and it may be all you need. If, however, you'd like more order as you get started, follow the steps below.

There are three different interrelated sections: amp select (top), preamp and EQ controls (middle), and cabinet controls. Each section affects the overall sound, so adjustments to one section will invariably influence the other sections. Since the controls are the same for each amp—in purpose and location—you can easily compare amps while adjusting specific controls.

1. **Instantiate Voltage Amps Guitar** on a DAW channel (mono or stereo).
2. **Select an amp**. This choice defines the personality of the amp, around which other decisions are made.
3. **Choose an amp channel**. (Clean, Drive, or Lead). This defines the attitude of the amp.
4. **Adjust the focus**. Focus is precisely what it sounds like: it optimizes the guitar's DI signal, and lets you control its tightness. It's like having an assortment of pedals. Turn the knob until you find the sweet spot of the guitar. You may need to readjust Focus when you change amps.
5. **Set the gate**. This eliminates unwanted input noise.
6. **Adjust the EQ controls**. (Gain, Bass, Middle, Treble, and Volume).
7. **Adjust the cabinet**. Select one of the matched cabinet pairs. Use Cab Tone to mix between the two cabinets. Use Room to add early reflections to the cabinet.

Now, switch between amps or amp channels to hear how these settings will play in different combinations.

## *Interface*

Controls are identical on all Voltage Amps; only the look is different.

1. Input Level from Audio Interface
2. Amplifier Select
3. Plugin Output Gain Control
4. Amp Channel Select
5. Noise Gate
6. Guitar Focus
7. EQ Controls
8. Master Section
9. Cabinet Controls
10. WaveSystem Toolbar

# Controls

## Input

Used to set the input level from the audio interface. Click the Lock icon to prevent the input setting from changing when loading a preset. Control range: -12 dB to +12 dB

The LED meter displays the input level. An occasional red LED is probably not a problem, but if the indicator is constantly red, your input level is too high.

Meter range: range: -12 dB to +12 dB

(blank=no input; green= signal present, low; orange=acceptable; red=hot)

## Amplifier Select and Amp Channel

### Amplifier Select

Use the Select buttons to choose an amp. These represent significantly different types of tube amps. Their mood is more iconic than specific: from the pristine, the clean of sound of Royal-X to the aggressive lead tone of Aggro.

### Amp Channels

Each amp has three different gain structures that define the basic tone and response. In tube amps, after which Voltage Amps are modeled, signal flow is from one tube to the next, in series. This cascade determines the amount and character of the amp's harmonic distortion. When a guitar is played into a **Clean** channel, the first tube is moderately excited, so the signal it forwards to the subsequent tubes is relatively free of added harmonics. The **Drive** and **Lead** channels deliver increasingly more signal to the first and second tubes, thus providing more distortion to the later tubes.

Drive strongly affects the overall sound. Amp channel selection in each of the five amps yields very different results, so it's worth experimenting with various combinations of amps and channels.

- **Clean** provides a clear sound without a lot of drive. Fewer tubes are used, and those tubes that are used are driven colder, so the sound is not hard hitting.
- **Drive** has more gain, more bass, harder driven than Clean, and are usually a bit less articulate.
- **Lead** Provides a heavy music sound with modern, high-gain distortion. This is the hardest-driven channel.

## Amp/Amp Channel Combinations

Era: Late '90s to modern-day guitar sounds with sparkling tones and punch.

- Clean channel is fat and chime-like.
- Drive channel has added breakup-style gain.
- Lead channel retains chime, while adding lots of gain.

Era: Late '90s to current day guitar tones. This is an aggressive amp for aggressive music.

- Clean channel runs from very clean to mid-crunchy tones.
- Drive responds very quickly and is very responsive.
- Lead is smooth and less percussive.

Era: ’80s to current day. Can range from pristine clean to mild crunch.

- Clean channel ranges from fat/clean to pleasing overdrive.
- Drive channel is tight, aggressive, but not so percussive.
- Lead is horn-like, with a nice top end, lots of gain, with a singing lead tone.

Era: Late ’70s to current day. Hot rodded British sound.

- Clean channel has a mild crunch with a fair amount of gain.
- Drive is articulate, thick with top-end bite.
- Lead is open sounding with lots of gain.

Era: ’60s to current day. Fat, punchy, and clear. A versatile amp that’s between mild and aggressive amps.

- Clean ranges from pristine clean to mild crunch.
- Drive is touch sensitive, with mild overdrive when played harder.
- Lead is big, fuzzy, lost of low end. Classic ’70s hero guitar sound.

## Noise Gate

The **Gate** removes system noise, such as pickup buzz and hiss, to provide a clean signal for the processor. It is located between the amp's tubes and the EQ section.
With threshold settings of less than -40 dB, hiss and other low-level noises should be eliminated without impacting the notes themselves.

**Threshold**: Sets the level at which the gate opens and closes. Range: -60 dB to 0 dB
**Speed**: Controls attack and release times. Range: 0 to 10

## Focus

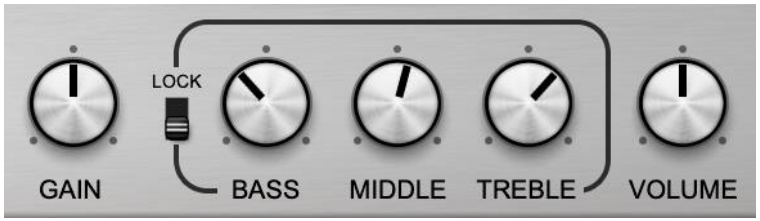
Use the **Focus** control to find the "center" of a guitar's sound. If you find the amp too muddy, or you're hearing unwanted harmonics, or the guitar doesn't feel "there," fine tune with the Focus control until the instrument is right where you want it. The Focus control sits before the EQ section in the signal flow, so it can function much like an overdrive pedal before the amp.[1] Don't think of focus as just a "finishing tool." It's a key element in creating the best guitar sound.

Focus addresses the selected amp and amp channel, so when you switch amps or channels, focus settings change accordingly.

Range: 0 to +10

[1] Focus is a sweepable bell that controls the low-frequency and high-frequencies that enter the amp. This affects the color of the early tubes in the amp; the signal hitting the initial tubes greatly influences the overall harmonic structure of the amp.

## EQ Controls




The **EQ** section is after the noise gate and focus in the signal flow. EQ settings apply to the current selected amp and amp channel, so settings change with these selections. If you change amp channels during a song, the EQ settings will change accordingly.

- **Gain** Input level to the preamp
- **Bass** Clean/Lead/Drive channels low frequency control
- **Middle** Bass Clean/Lead/Drive channels mid frequency control
- **Treble** Bass Clean/Lead/Drive channels high frequency control
- **Volume** Output of the EQ section for the selected amp channel

  Use the Volume control to match the levels of different amps and channels. Let's say that you play part of a song using the Clean channel, and then you switch to the Drive channel. This will naturally result in different compressions and distortions, which influence the relative volumes. Use the Volume control to balance the two channels.

  Range (all controls): 0 to 10

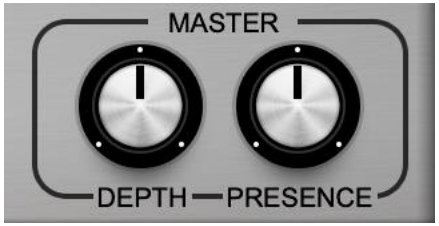
## EQ Lock

EQ Lock sets the behavior of EQ settings when moving between amps.

When **EQ Lock** is set to On, each amp's individual settings are maintained when you change from one amp to another or choose another Channel type. This lets you compare different amps, each with its own EQ.

When EQ Lock is set to Off, EQ settings remain the same regardless of the amp selected.

## Master Section




The **Master** section is the last harmonic stage before the cabinet speakers.

**Depth** shapes the low end sent to the loudspeakers. Range: 0 to 10

**Presence** shapes the high-end. Range: 0 to 10

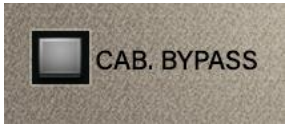
## Cabinet Controls

The **Cabinet** controls govern the acoustic characteristics of the speaker cabinet, after the amp. There are six pairs of cabinets. Each pair has its own unique sound.

Use the six-way **Cab Select** switch to select a pair of cabinets. Generally, selections to the left provide darker cabinet sounds, while settings to the right are brighter.

**Cab Tone** adjusts the mix between the two selected cabinets. Turn the Cab Tone knob counterclockwise for fatter and darker tones; turn clockwise for a brighter and thinner cabinet sound. When the knob is at its midpoint, there is an equal mix of the two selected cabinets.

Use **Room** to increase the air around the cabinet by incrementally adding early reflections. It does not add a reverb tail. With higher settings, the size of the space increases. To bypass the room effect, turn the control completely counterclockwise.




Select **Cab Bypass** if you want to forgo the built-in cabinet and use your own.

To use another cabinet, make sure that the Cab is bypassed. Instantiate an IR loader, such as IR1, after Voltage Amps Guitar in the DAW's plugin rack. Load the cabinet.

## Output Gain Control and Meter

The knob sets the level of the plugin output.

The LED meter displays output level. The output signal is limited to -0.1 dB. When this level is reached, a red LED lights up. Click on the clip LED to reset it.

Meter range: -24 dB to +24 dB (blank=no input; green= signal present, but low; orange=acceptable; red=hot)

## WaveSystem Toolbar

Use the bar at the top of the plugin to save and load presets, compare settings, undo and redo steps, and resize the plugin window. To learn more, click the icon at the upper-right corner of the window and open the WaveSystem Guide.

# Voltage Amps Bass

Voltage Amps Bass is a set of two bass guitar amplifiers and cabinets in one plugin. *Vintage Velvet* delivers a fat, overdriven sound that ranges from Motown to Queen; *Dark Mass* is a versatile amp that runs the gamut from ’80s to present day. Cabinet characteristics can be controlled, as can drive and amp tone.

The controls for both amps are the same, in position and values, so you can quickly compare and choose the right bass amp sound.

## *Quick Start*

Whether or not you have experience with bass amps, you'll find Voltage Amps Bass logical and straightforward and very easy to master. If you want to just plow ahead, plug in your bass, and start turning knobs, you'll manage. But we suggest that you get started by following the steps below. It will add some order to your learning.

1. **Instantiate Voltage Amps Bass** on a DAW channel (mono, mono-to-stereo, or stereo).
2. **Set the input level**: The plugin is very forgiving about input level, but, as with all plugins, check that it's neither too low nor too high.
3. **Load an amp**: Vintage Velvet or Dark Mass. This choice defines the overall personality of the amp.
4. **Adjust the direct signal**: Control the tone, level, and mix of the DI signal.
5. **Set up the drive**: Use the Drive section to control the type and amount of drive and its mix with the amp.
6. **Choose an Amp Voice**: There are three wide bell filters (low, mid, high) that shape the sound as it enters the amp.
7. **Adjust the EQ controls**: (Gain, Bass, Mid, HiMid, and High).
8. **Adjust the cabinet:** Use Cab Tone to mix between two cabinet IRs; use Room to add early reflections to the cabinet.
9. **Adjust the output level**, if needed.

Now, switch between amps to hear how these settings work in different combinations.

## Controls

Shown here is the Vintage Velvet amp, mono-to-stereo component. Controls are identical both amps; only the look is different.

1. Input Level from Audio Interface
2. Amplifier selector
3. Plugin output gain control
4. Direct controls
5. Drive controls
6. Amp voice: Fat, Tight, Sharp
7. EQ controls
8. Cabinet controls
9. WaveSystem Toolbar

All settings apply to the selected amp. When two amps are swapped, all settings will follow; and when you return to the previous amp, all settings will return to their original positions.

## Input

Sets the input level from the DAW. The adjacent LED indicates the approximate input gain: green=moderate level (maybe low); orange=level is aggressive (but probably appropriate); and red=hot (level is likely too hot). Occasional red LED indicators are fine, but if this meter is constantly red, reduce the input level. Click the lock icon to prevent input gain from changing when you load a preset. Range: - 12 dB to +12 dB

## Amplifier Select

Use the select buttons to choose between Vintage Velvet and Dark Mass amps. These two amps have distinct sounds and personalities, and they respond differently to drive. There's no point describing them, just listen to what they do to your bass sound, and you'll understand the differences.

## Direct Sound

The Direct section functions like a hardware direct box. It controls the level and color of the Input signal after the DI process, as well as the mix between the DI and the amp.

**Tone** adjusts the color of the direct signal. When Tone is set to zero, the Direct section does not affect the signal. However, sound still passes through the plugin and the limiter, so the input and output signals will be slightly different.
**Level** controls the gain of the Direct section. This control is before the Direct Mix in the signal flow.
**Amp–DI** is the balance between the Direct section and the rest of the chain.
Range for all controls: 0 to 10

**Phase Reverse** flips the phase of the DI signal. Since phase is an important subjective element when creating an amp sound, we recommend that you experiment with both polarities.

The Direct section is parallel to the Drive section. Both are fed from the audio interface.

## Drive

Adds drive, before the EQ section and the amp. Like the Direct section, it is fed directly by the plugin input (DI). This section works like a stomp or overdrive pedal.

There are three types of drive: **Fat**, **Tight**, and **Sharp** (and off). Click the name box to toggle through the drive options or use the drop-down menu.

Three controls are used to adjust the drive:

**Tone** controls the color of the Drive channel. The drive process typically reduces the low end of the signal, so use this control to restore the low-frequency tones to your liking.

**Gain** sets the absolute gain of the Drive going to the Drive mix control, which then feeds the amp.

**Mix** is the balance between the output of the Drive section and the amp.

The Drive signal is parallel to the Direct signal, not in series. This lets you control the Drive separately from the Direct signal.

## EQ Section

The EQ section controls the tone and voice of the amp itself. It sits after the DI and Drive sections, and it consists of two parts:

**Amp Voice Select** is a three-button switch for selecting tone-shaping modes. Each mode is a bell filter whose Q ranges from narrow (Voice 1) to wide (Voice 3).

### EQ Controls

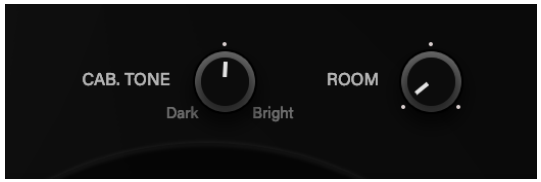
- **Gain** Adds harmonic distortion to the input of the mix. It also influences the amp level, but not appreciably.
- **Bass** Clean/Lead/Drive channels low frequency control
- **Mid** Bass Clean/Lead/Drive channels mid frequency control
- **HiMid** Bass Clean/Lead/Drive channels high-mid frequency control
- **High** Bass Clean/Lead/Drive channels high frequency control

  Range (all controls): 0 to 10

EQ and Amp Voice settings apply to the current selected amp and amp channel. So, if you change amp channels during a song, the EQ settings and Amp Voice will change accordingly.

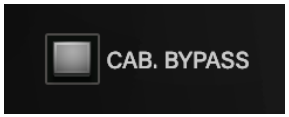
## Cabinet Controls

This controls govern the acoustic characteristics of the speaker cabinet, after the amp.




**Cab Tone** adjusts the thickness of the cabinet sound. It is a mix between two cabinet IRs. Settings to the left yield fatter and darker tones; those to the right are brighter and thinner. When the knob is at its midpoint, there is an equal mix of the two IRs.

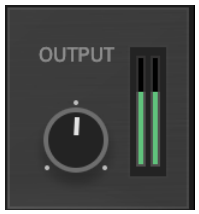
Use **Room** to increase the air around the amp by incrementally adding early reflections. This does not add a reverb tail. To bypass the room effect, turn the control completely counterclockwise. This is the dry mix.




Select **Cab Bypass** if you want to forgo the built-in cabinet IRs and use your own.

To use another IR, make sure that the Cab IR is by passed. Instantiate an IR loader, such as IR1, after Voltage Amps Bass and load an IR.

## Output Adjust and Meter

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Range: -24 dB to +24 dB
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