tubedrve 19” manual

singular
audio

rev 1 05/2025

Contents

Safety warning

First of all, thank you for purchasing the tubedrve 19”.

Some safety warnings first:
Vacuum tubes require lethal voltages (+240VDC) to work. Capacitors can hold this charge even after the module is powered off. The unit will discharge itself in a few minutes when powered off. However, still exercise caution.
Singular Audio is not responsible for any injuries or bodily harm. Please, if you are not 100% sure about what you’re doing, leave it to a professional.

When installing the tubedrve, leave the power switch off. Hook up the power and then turn on the power switch.

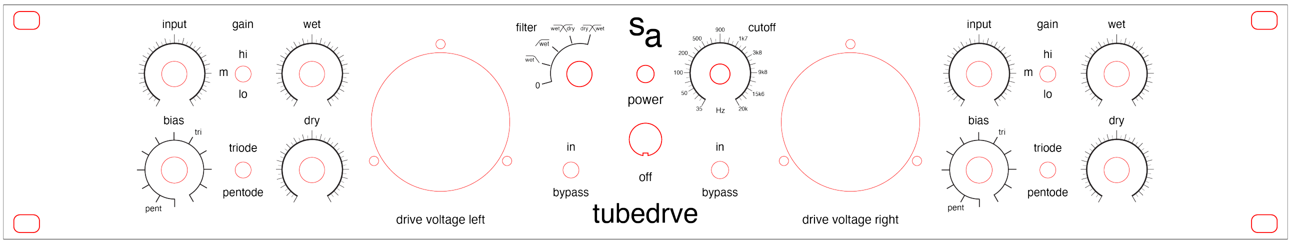
The unit doesn’t create a lot of heat but it’s still analog electronics which could be sensitive to excessive temperatures for an extended amount of time. Please keep this in the back of your mind when installing it in a fully loaded rack.

Features overview

The boring stuff first :

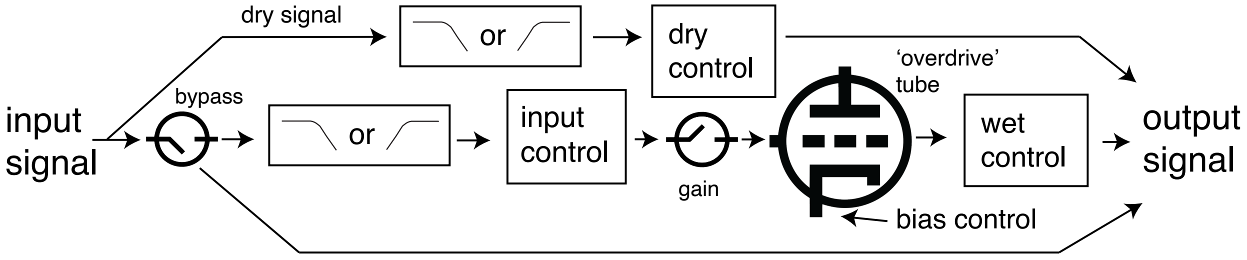
Tubedrve 19” uses a universal power supply which accepts voltages from 85-265VAC, this means it can be used all over the world without any problems. Therefore an IEC power cord is not included as there are many different types used worldwide: it’s more practical to source one locally.

The unit does not contain a traditional disposable fuse inside. There is a self-resetting PTC fuse in the unit if any short circuit should accidentally occur. This is not a user serviceable part. Should any short circuit or excessive current draw occur, the fuse will trip. After a few minutes of the unit being powered down, the fuse will reset itself.

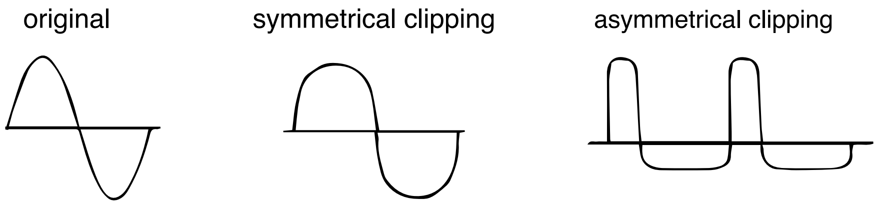


A simplified overview of how the module works is located at the bottom of this page.

- The 3 way **gain** switch provides lo, mid and hi gain control in bigger steps. In mid and hi setting the wet output has a pad so it’s easier to maintain appropriate levels and provide good resolution on the output control.



- The **input** level control controls the input gain in smaller steps for fine adjustment.
- The **triode/pentode** switch controls if the overdrive tube is operating in triode or pentode mode. In triode mode the distortion is ‘warmer’ and has primarily 2nd harmonics (‘even harmonics’). In pentode mode the tube has more distortion, compression and has more 3rd harmonics (‘odd harmonics’). In short, triode mode is smoother and pentode mode is more aggressive.
- The **bias** control controls the tube biasing. It sets the operating point for the overdrive tube. Therefore it controls the amount of symmetrical vs asymmetrical clipping. For an overview of symmetrical vs asymmetrical clipping please see the diagram below. The control has markings (‘tri’ and ‘pent’) for where the clipping is most symmetrical for both triode or pentode operation. Generally speaking a ‘smoother’ distortion will be symmetrical and a more pronounced effect will be asymmetrical clipping.



- The **wet** level control controls the audio level coming out of the distortion tube.
- The **dry** control controls the amount of undistorted signal feeding the output.

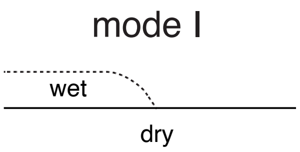
filtering

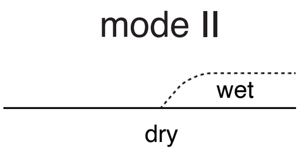
The unit offers analog filtering capabilities which can be applied to both the dry and wet signal. The filter operates in stereo mode only.

Cutoff controls the cutoff point of all filters at the same time, from low to high frequencies. There are five filter modes :

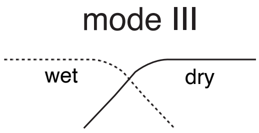
Filter mode	Wet signal	Dry signal
Off	Off	Off
I	Low pass filter	Off
II	High pass filter	Off
III	Low pass filter	High pass filter
IV	High pass filter	Low pass filter

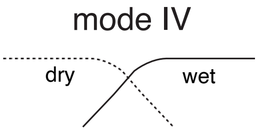
In filter mode I & II a low or high pass filter is put in series with the wet signal to tame any high or low end frequencies.
You can also combine the dry and wet signals. You can then get these frequency responses:





Filter mode III & IV have filtering for both the dry and wet signals, so it functions more like a crossover. In filter mode III the low frequencies are running through the distortion tube, and the dry signal has the high frequencies. In filter mode IV it is vice versa.





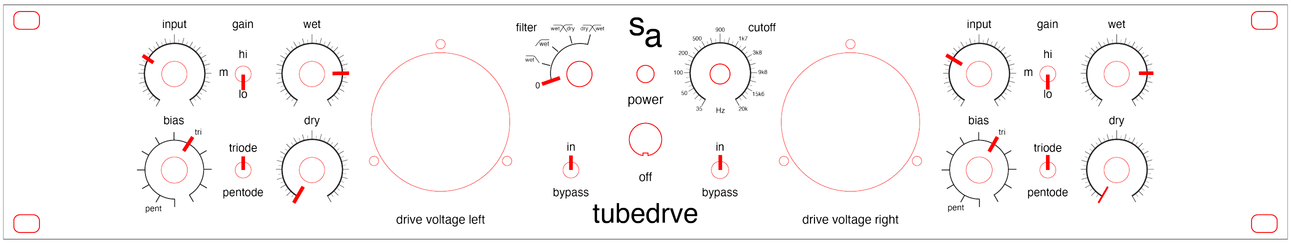
In filter mode III and IV the mix of the dry and wet output levels will determine the resulting overall frequency response. If you're looking for a flat overall frequency response, it's important to keep the dry and wet output levels in balance with each other. Easiest is to verify quickly by putting the unit in bypass.

The two analog meters give an indication on how much audio signal is coming out of the distortion tubes. Therefore they give an indication on how much distortion is being applied to the audio signal.

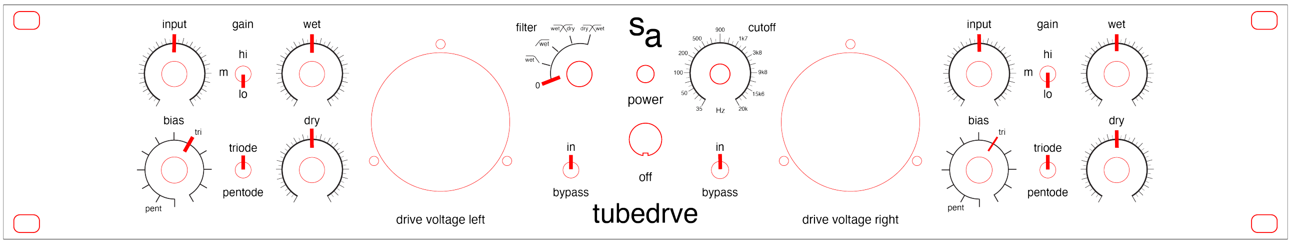
Suggested settings / quick start

By popular demand here are some suggestions on how to use the unit and get to know it's behaviour quickly. Distortion levels are very dependent on input level so please take that into account.

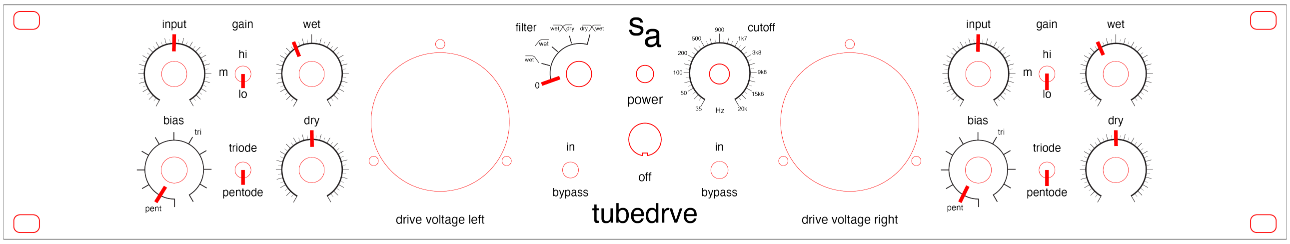
1. Basic warming setting - triode



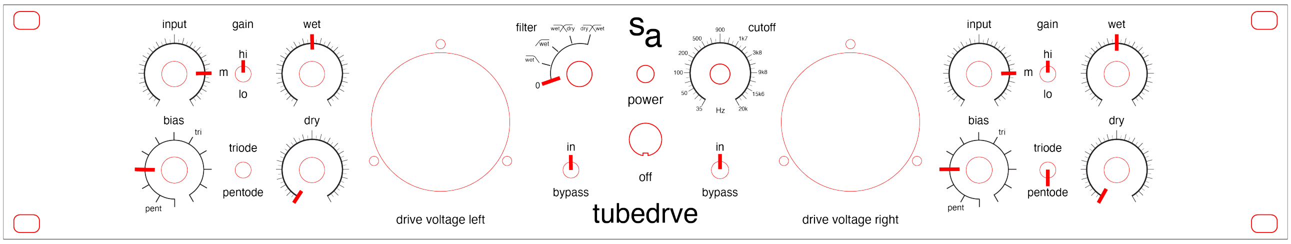
2. Basic warming setting - triode + parallel



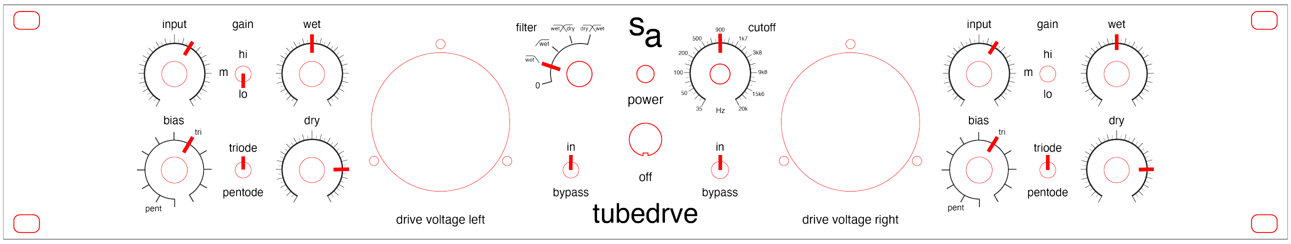
3. Medium aggressive setting - pentode + parallel



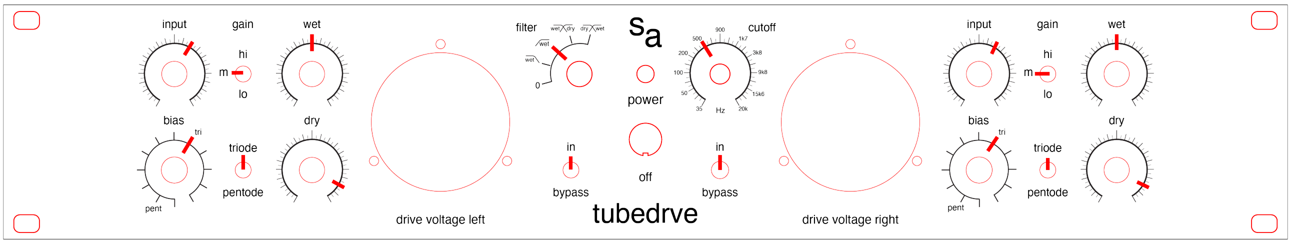
4. Aggressive setting - crush (great with guitars)



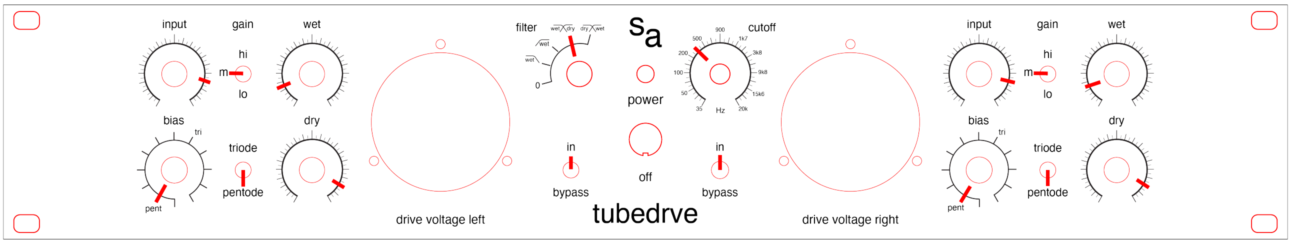
5. Low end boost - low pass filter + parallel



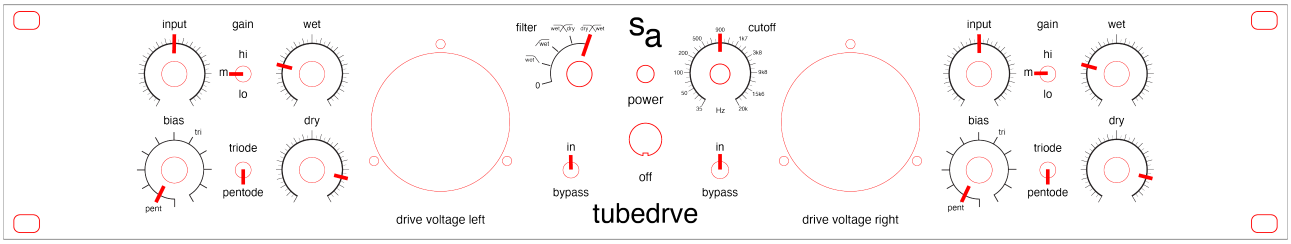
6. High end boost - high pass filter + parallel



7. Low end distorted, high end clean - crossover I



8. High end distorted, low end clean - crossover II

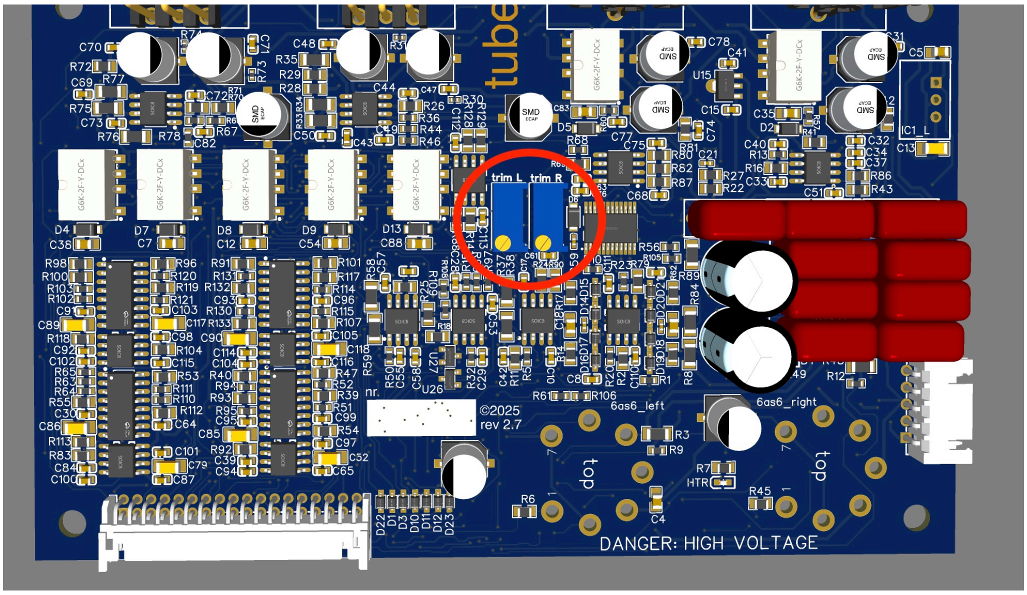


Serviceability

The two small signal pentode 6J2P tubes normally last a very long time. You can of course extend life by powering off the unit when not in use.

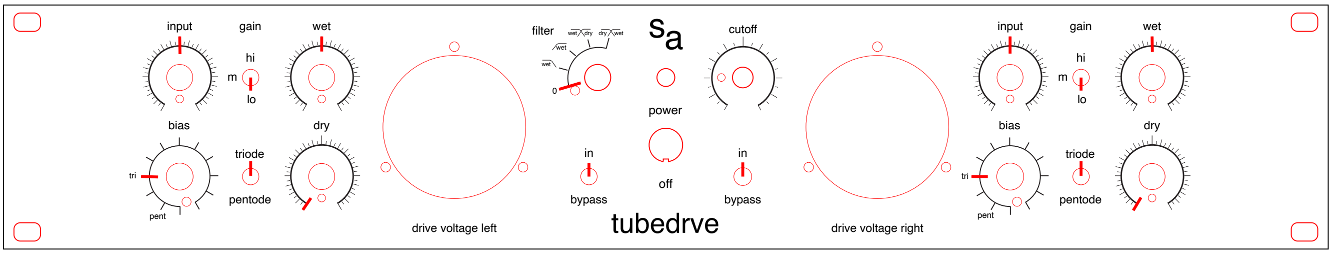
Singular Audio does not assume any responsibility when replacing your tubes. Any damage caused is your own responsibility. There are high voltages present in the unit when this unit is powered on.

The 6J2P tubes can be replaced if they ever need to be. It's best to buy a matched set. If possible buy a few: they are not very expensive and then you can try out a few different sets to see which ones have the closest stereo match.



There are two trimmers in the middle of the motherboard which calibrate the output signal of the tubes by a few dB. After replacing the tubes it's best to check these and recalibrate when needed.

Start by setting the controls to the following settings:



Feed the unit a stereo test signal of -10dBFS peak from your DAW.

Check the output levels coming from the unit. Check the stereo balance on the meters on your interface or DAW. When needed adjust the output voltage with the trimmers.

Cycle through a few bias and gain settings to make sure the stereo balance is right.

After burn-in (approx. 24-48 hours) check if the output signal has changed and readjust when necessary.

Technical data

THD: 0.2% to >85%
Noise : <95dB below maximum output level at typical settings

Frequency response (triode): 30Hz - 20kHz ±1dB
Frequency response (pentode): 40Hz - 20kHz ±1dB

Filter cutoff frequency (-3dB point) : 35Hz - 20kHz
Filter : 6dB/oct

Max gain (clean): 25dB
Max gain (overdriven): 45dB
Gain switch: -14dB, 0dB and +12dB input level (output level compensated in low gain setting)

Potentiometer detents: 41 steps
Bias switch : 12 steps

Bypass : relay switched balanced bypass
Stereo tolerance between channels : ±0.5dB at typical settings

Input voltage 85 - 265VAC
Max. power consumption: 15W

Input : XLR 3 pin female
Output : XLR 3 pin male

Tube complement: 2 x 6J2P (6AS6 pin compatible)
Weight : 2.5kg

Recall sheets