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VOX AC4TV with MasterTone Power Scaling

Thank you for purchasing a MasterTone modified VOX amplifier - I hope you will be delighted with the tone and performance of your new amp.

Please read this in conjunction with the VOX Manual and observe all the safety notices - remember that there are dangerous voltages inside valve amplifiers.

Why modify the VOX AC4TV?

The **VOX AC4TV** is a great single ended class A amp even in standard form. It uses one 12AX7 and one EL84 tube that gives it the potential for a rich warm tone. And, it looks great.

However, even though it has an Output Level switch it's still too loud at the ¼ Watt setting for many people to be able to benefit from the rich natural overdrive that you get when you crank it up - even a bluesy crunch will not be achieved until the amp is pretty loud.

In a medium size room, which is where most people have to practice, a 1 watt valve amp can be so loud that you would have to shout really loud to be heard (about 100 decibels) - and around 1/10th of a watt is what is often referred to as "bedroom level" for late night noodling.

The Power Output control on the AC4TV is simply an attenuator which is a set of resistors that go between the amplifier and the speaker. It's quite a decent one and the designers have done their best to retain the tone but it does suck the tone, it's not infinitely variable and it doesn't reduce the loudness enough.

By adding a Master Volume control and Power-Scaling™ you can achieve any level and combination of pre-amp and output stage distortion down to less than 1/10th watt. (see <http://www.londonpower.com/pscaling.htm>)

The AC4TV responds well to Power Scaling as most of the distortion comes from the Output tubes.

Please note that I am licensed to install Power Scaling™ and use genuine London Power Components for the Power Scaling™ circuit.

What the modifications do

All the controls work together to create the final sound.

WARNING: The level of distortion available when the Volume and Master volume are set to full AND the Power Scaling control is set towards minimum (8 o'clock) can be extreme. Use these controls carefully at first until you understand how they work together.

Volume

After my modifications this becomes the pre-amp volume control (also called "Gain" on many amplifiers). This controls how hard you drive the pre-amp valves. Turning this control up overdrives the pre amp and creates a harmonically rich distortion.

VOLUME



Clean

VOLUME



Pre Amp
Over-drive

Master Volume

The new control in the Power Output position is the Master Volume.

This controls the drive of the output stage of the amplifier. This allows the user to turn up the Volume control for maximum pre amp gain whilst keeping the amp's overall loudness at a desired level.

MASTER
VOLUME



Quiet

MASTER
VOLUME



Loud

Using the Volume and Master Volume controls you can get some mild break up at low volumes (how much depends on your pickups) but it is only pre-amp distortion. Personally I like this sound but I prefer it when the output tubes start to distort giving a richer tone. You cannot get output tube distortion at low volumes unless you have some form of power reduction. There is a lot of information on the internet covering power soaks and other types of attenuators. I have tried lots of them including expensive solutions like the THD Hot Plate® but none of them works as well as Power Scaling™. You can get more technical information on the London Power web site at www.londonpower.com/powerscaling_vs_vp.htm

Power Scale

The Power Scale control is fitted where the 'On/off' switch was located.

Using Power Scaling™ you can achieve output tube distortion at any volume.

Power Scaling is at its most effective when the Master Volume is turned up but can also provide a tonal change to a clean sound.

The Power Scaling control reduces the power to the Output Tubes as you turn it anti-clockwise. As you turn down the Power Scaling control you will need to adjust the Volume and Master Volume controls to get the exact level of over-drive/distortion that you want.

Once you are near to the sound you will find small changes can make quite a difference to the sound especially when the Power Scale is turned down and you are using a lot of distortion.

Don't forget that the Gain switch will also change the amount of drive.

VOLUME



**MASTER
VOLUME**



**POWER
SCALE**



Other 'unseen' modifications

- A screen resistor is fitted to the output tube to improve reliability and tough sensitivity. [all amplifiers should have a screen resistor(s)]

Important Notes

Servicing

If you need to take your amplifier to a shop or an amplifier technician for repair please provide the following information to them:

PLEASE NOTE that the Power Scale potentiometer carries a potentially lethal high voltage (around 300 volts).

The power supply caps may not discharge as quickly as normal - CHECK VOLTAGES.

This also applies if you decide to open the amplifier yourself !!

Warranty

I will correct any fault with my workmanship or the parts I fit for 12 months from the date of sale. Warranty applies only to the original purchaser. Warranty is void if the amplifier is altered or modified in any way or the serial number has been tampered with or altered.

Contact

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