



moof

Owner's Manual

Important safety instructions

- Please read this instruction manual carefully before switching on
- Always use a 9VDC (Center Negative) supply capable of delivering at least 300mA
- There are no user serviceable parts
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped
- Never use this equipment in damp or wet conditions. No objects filled with liquids should be placed on the apparatus
- Always unplug this apparatus during lightning storms or if unused for long periods of time
- Protect the power supply from being walked on or pinched particularly at plugs, convenience receptacles and at the point where they exit from the apparatus

Note: This equipment has been tested and found to comply with the requirements of the EMC directive (Environments E1, E2 and E3 EN 55103-1/2) in the E.U.

Note: It is recommended that all audio cables used to connect to Moof are of a high quality screened type. These should not exceed 10 Meters in length

**FOLLOW ALL INSTRUCTIONS
HEED ALL WARNINGS
KEEP THESE INSTRUCTIONS**

What is mooF?

Back in the 90s when we were still making the Mutator, lots of people, including me, really wanted to use it as a guitar effect. Without a load of extra jiggery-pokery (to interface non-friendly impedances and signal levels) it didn't really work well, so the potential remained confined to the studio setting where it could be used as an outboard effect - it's natural setting. Failure to tap the potential always rankled and as Audio Kitchen began to take form, I often daydreamed of one day making a guitar-friendly version. The lack of current production SSM2045 chips meant it was never really possible, but a few years ago a couple of manufacturers announced they were making repros of that very filter. One of them was okay but didn't sound like the original, the second though, billed as an upgraded version of the 2045 was created by the original designer. This one sounded... well, like the Mutator!

This is the part of the manual where I regularly talk about the arduous development cycle, all the hurdles overcome and the despair which often set in, but I'll spare you that, this time. Suffice to say that I provoked my good friend Dr Damon McCartney with board revisions, so often and for so long, that we basically ceased communication for about 6 months at one point.

The responsibility lies at my feet.

The thing is, I so desperately wanted maximise the quantity of Mutator spirit in this little pedal, that when I felt we could get closer, I pushed for a mod, and another mod, and one more mod.. etc. ad nauseam.

How do I use moof?

Anybody not familiar with the Mutator will be confused as to what Moof actually is and how you might use it; I'll try to explain.

Its heart is a 4 Pole, low pass filter. You can open and close the filter by changing the frequency (cutoff) at which it begins to roll-off. This is done most simply by changing the position of the **Cutoff** control. In order to avoid dead spots at either end, the range of Moof is rather tighter than the Mutator's, but still plenty broad enough to cause havoc.

The other control which relates specifically to the 'sound' of the filter is **Res** or resonance. This effectively turns up the gain of signal content at the cut-off frequency - think the sound of a wah pedal or the self-resonating, almost 'whistling' sounds on Jonny Greenwood's guitar at the end of Paranoid Android (created using a Mutator).

Side note: as you increase the **Res**, signal content at the cutoff frequency will be greatly amplified, but frequencies outside that tight band will drop in level - trim the output gain to taste using the **Volume** control.

So, we have a low-pass filter with an adjustable cutoff and a resonance control which is cool, but not THAT cool. What we need is a way to create some dynamic movement, and the rest of the controls are all paths to achieve this via different means.

Before we begin, I'll state explicitly that all the following controls will mix together with the **Cutoff** control and therefore all interact; we will call this the cutoff mixer.

Firstly, we'll look at the Expression Pedal jack on the rear panel.

Any standard 10k expression pedal should work here. This will sweep the cutoff up and down, and remember: this will be adding to the voltage from the **Cutoff** control. Moving that will adjust the centre frequency about which the expression pedal will work. Mess around with both controls and you'll get the hang of how they interact.

Secondly, we have the on-board LFO, controlled by the **Speed** and **Depth** controls. This is a triangle wave which can go from very slow to very fast.

Third, we have the **External LFO** input jack. Plugging a mini jack into this will disconnect the internal LFO so that whatever signal you have plugged in will now mix with other cutoff controls modulating the cutoff frequency.

What can you plug in here? Well, it will accept voltages between 0V-10V, so any equipment which sends out CV (Gate, Pitch, Mod) in that range will work but remember: any signal plugged in here will **ONLY** affect the cutoff frequency. Audio will make ring-mod type sounds which can be fun. Also, stand-alone LFO generators like the Soundgas LFO-MO are good fun and I have a plan to make a rather elaborate control box of my own to use on this input!

All that brings us to the part which was toughest to distil/ translate from the Mutator - The envelope follower...

What is an envelope follower? Without getting too tech, it is a circuit which transforms an input signal (AC, normally audio) into a fluctuating DC signal which can be used to control other circuits such as gates, VCAs, ...and filters. On the Mutator this was controlled by Sensitivity, Attack, Release pots and a Gate/Envelope switch, plus an Envelope Sweep control. 5 was too many controls, so after much fiddling and listening we managed to whittle the controls down to a single three-way toggle switch for attack/ release (**a/r**) settings and a **Sweep** pot.

Now to explain how it works.

The input signal is rectified and gated, after which you choose your attack/release (**a/r**) setting with the toggle, L->R **M** = Medium, **F** = Fast, **S** = Slow. We now have yet another control voltage which mixes in with the others to vary the cutoff frequency.

The **a/r** setting controls how quickly (or slowly) the control voltage responds to a change in input signal, so spend a few minutes listening to how this changes the effect.

The **Sweep** control is the means by which we apply the envelope follower's output to the cutoff mixer. 12 o'clock is effectively 'off' and the LED will remain off. The further it moves from 12 o'clock, the greater the magnitude of sweep applied. Turning **Sweep** counter-clockwise (CCW), we will see the LED begin to flash RED. This means the envelope follower will sweep the cutoff frequency DOWN. Turn **Sweep** clockwise (CW) from 12 o'clock, the LED will flash GREEN, and the cutoff frequency will be swept UPWARD.

(Go forth and experiment etc. etc.)

The Mutator was an extraordinarily powerful and flexible unit which rewarded the user familiarising themselves with the controls and how they interacted. Whilst Moof is much simplified, it is also very flexible and the longer you experiment with it, the more sounds and (hopefully) inspiration it will yield. Perhaps, begin with changing **Cutoff** and **Res**, then add a little bit of LFO **Depth**, then take the LFO out and play with the **Sweep** control. External inputs for LFO and expression pedal will also be fun. Moof will have interesting effects on how other pedals sound and behave, so once you have a good feel for Moof on its own, dive into combinations with drives before and after, delays before and after etc. etc.

Enjoy, and let me know how you get on!

Thank you!

SCX

By this point you will have noticed the wonderful Moof artwork which is all down to my friend Yvette Young. We have been friends (and I have been a fan!) for a few years, looking for the opportunity to do a little collab. At various stages during its development arc, Yvette has popped in and demoed Moof, so when she came up with the theme and iterations of artwork it was very much input from a friend who knows us well. Thank-you so much Yvette. We are very much in your debt.

Check Yvette out @yvetteyoung. She is great.

Depth



Res



Cutoff



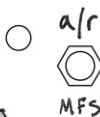
Sweep



Speed



Volume



In



Exp



Ext



LFO

9VDC



+ - G -

Out



Top Face

Depth varies the amplitude of the LFO waveform applied to control the Cutoff frequency

Speed controls the frequency of the LFO waveform

LFO LED indicates both depth and speed of the LFO

Volume is an output level trim. With **Res** on zero and **Cutoff** fully open, this control goes from unity up to around 3.6x gain

Cutoff changes the corner frequency of the low-pass filter (40Hz-10kHz +/- 10%)

Res sets the amount of resonance at the cutoff frequency

Sweep varies both the amount and direction with which the envelope follower moves the cutoff frequency

a/r is a toggle which changes the attack/release times of the envelope follower (**M** = Medium, **F** = Fast, **S** = Slow)

Envelope LED shows both depth and direction of the envelope follower - Green is up, Red is down

Rear face

In is the signal input jack

Exp is the input for an expression pedal to control the cutoff frequency

Ext LFO is the input for an external control voltage. This defeats the internal LFO and will mix (as described on the bottom of p.4) with other internal sources to affect the cutoff frequency

VDC is the power input. 2.1mm connector, centre negative and draw is around 300mA

Out is the signal output jack





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