



# **Firefly**

## **Pilots' Notes**

# Introduction

Congratulations on acquiring your Firefly amplifier. You now have the very best in guitar amplification, the result of thousands of hours of development, playing and listening and I sincerely hope it is everything you expect it to be.

The Firefly is built in the UK to the highest standards using the best quality components. It is designed to last a lifetime, to be easily and reliably serviced and to give the guitarist the pleasure of experiencing truly outstanding tone.

## Safety

Before looking at what the amplifier offers there are some safety issues that must be addressed:

- The amplifier operates with mains power and has very high internal voltages that can be lethal. The amplifier must not be operated with the chassis removed from the cabinet.
- There are no user serviceable parts inside. Servicing must be done by qualified personnel only.
- The amplifier may get hot after prolonged use. Allow adequate space around the amplifier for cooling.
- The amplifier must be earthed. Do not operate with the mains earth disconnected.
- The amplifier is protected with two fuses, a mains fuse integral to the IEC socket on the rear panel and an HT fuse inside the amplifier. Failure of either fuse usually indicates there is an issue with amplifier needing to be addressed by a service engineer. Replace only with correct type. Failure to do so could result in significant damage to the amplifier and in it becoming unsafe to use.

## Guarantee

Your 633 amplifier comes with a lifetime guarantee covering all components and workmanship with the following exceptions:

- Pre amp valves – 6 months
- Power amp valve – 3 months
- Power supply capacitors – 5 years
- Damage due to misuse
- Wear and tear on cabinet materials and fittings

## Overview

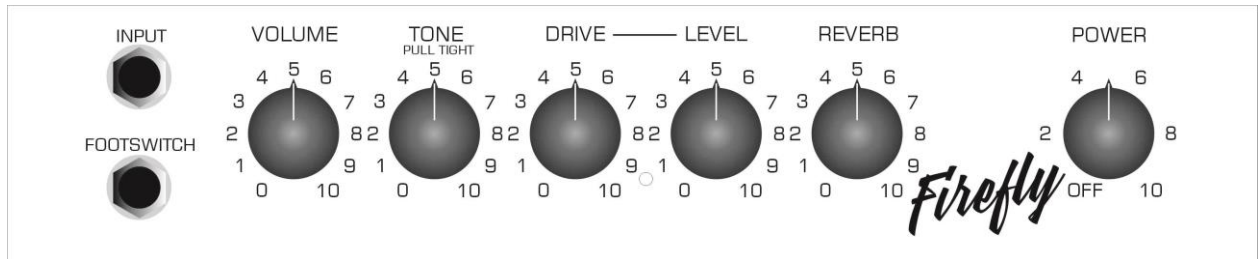
Single-ended amplifiers clip asymmetrically, producing primarily even order distortion, which is very rich, musical and flattering to the electric guitar. A characteristic of this type of circuitry is that as signal level or gain increases the tone becomes full of warmth and sparkle before the onset of audible clipping. The dynamic range over which this occurs is quite large, compared to a push-pull design so cleaner tones will have warmth without too much distortion. And when pushed hard the overdrive will be rich and thick. Beyond a certain point, particularly with lower notes, the distortion characteristics will change and become less sweet, but still musical to many ears. All part of the Single-Ended design's charm. A perfect example would be the Fender™ Tweed Champ which has been used on countless recordings by some of the greatest guitar players and is responsible for many of the timeless guitar tones we love.

The Firefly embodies the single ended amplifier topology and wraps it with more essential features for today's player. The core is a 7 watt single-ended valve amplifier with 'Variable Headroom', allowing the maximum output power to be reduced down to around 1/2 watt. This method of power reduction, unlike the use of resistive or reactive loads, reduces stress on and prolongs the life of the output valve.

A simple control set, just Volume, Tone and Power, provide everything required to get a great range of tones from bright spanky cleans to old school rock crunch, from warm jazzy cleans to thick sweet tweed - style breakup. Then add Overdrive, Reverb and a Cabinet Simulator output to provide the complete package for home use, practice and recording and easy integration into a live set-up. The Overdrive is the double triode circuit from the Drive King and is of the cascaded gain variety, similar to that found in Mesa Boogie™ and Dumble™ designs and has a wide range of gain and level. The reverb is the DSP design found in all 633 amplifiers. The dwell or length of the reverb can be adjusted from short to almost infinite by accessing the screw through the small hole in the front panel.

The Firefly is designed, and hand built with love and care in Northamptonshire, England using high quality components to ensure long and trouble-free service. And because they are hand built, in the unlikely event that they require attention, they are straightforward and easy to maintain.

# Front Panel Controls



## Input Socket

Plug your guitar in here.

## Foot-switch Socket

For connection of remote on-off switching for Overdrive. Requires a latching switch with a mono 1/4" jack (not supplied). Shorting tip to barrel turns the overdrive on.

## Volume

Adjusts the amount of gain at the front end of the preamplifier section.

## Tone

Adjusts the amount of high and high mid frequencies. This control operates early on in the preamp so it acts as a pre-voice for overdriven tones.

## Tight

Pulling the Tone control knob out revoices the preamp from a Blackface style, slightly scooped tone, to a mid-focussed higher level tone with a tighter low end, more akin to a 'tweed' style voicing.

## Drive

Adjusts the gain of the overdrive section. Turning clockwise increases the amount of gain when Overdrive mode is selected.

## Level

Adjusts the level of the overdrive section. Turning clockwise increases the volume level when Overdrive mode is selected.

## Reverb

Sets the amount of reverb from off to cavernous!

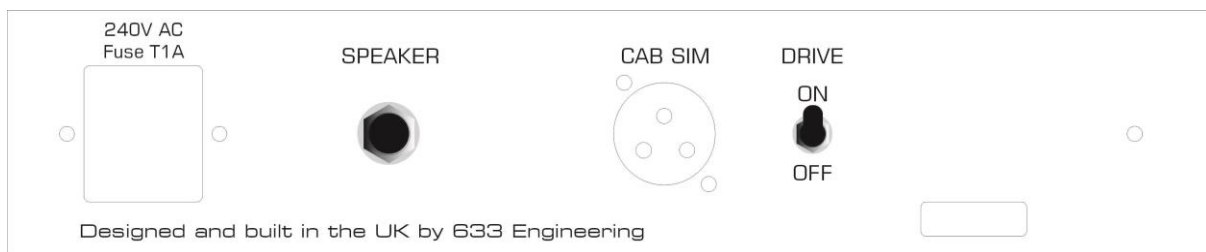
*Note – the decay or dwell time of the reverb can be adjusted using a small flat bladed screwdriver to access the trimmer through the hole between the Drive and Level controls. The trimmer has a centre detent to set the nominal position. Turning it anti-clockwise will shorten the dwell time; clockwise will increase it.*

## Power

This control switches on the amplifier and allows adjustment of the maximum output power from around 1/2 watt up to 7 watts. In its fully anti-clockwise position mains power will be disconnected from the amplifier. Turning clockwise

there will be a click and power will be applied to the amplifier, indicated by the 633 Engineering logo illuminating. After a few seconds the three valves will have warmed up and the amplifier will be operational. Setting the Power to a low position and turning up the Volume and Tone controls will introduce power amp compression and saturation at lower volume levels. Higher settings of Power will allow for higher volumes and cleaner tones. To generate saturated tones at higher volume increase both the Power and Volume/Tone controls.

## Rear Panel Controls



### AC Power Input

Mains power inlet socket. Connect the supplied power lead here. Also has an integral mains fuse. T1A 20mm. *Note – in the event of failure replace with the same type only once, then refer to a qualified technician.*

### Speaker

A 1/4" jack socket for connecting the internal speaker (combo) or speaker cabinet (head).

### Cabinet Simulator Output

A fully transformer balanced and earth free microphone-level output for connecting to a mixer or sound card/audio interface, with filtering to simulate the frequency response of a guitar speaker. *Note – to prevent noise if connected to a PA system which is on, disconnect before powering down.*

### Drive ON/OFF

This switch activates the relay which switches in overdrive section. If using a footswitch set this switch to OFF.

# In Use

## Getting Started

Connect the supplied power cable to the mains inlet on the underside of the rear panel of the amplifier and plug the other end into a mains outlet. Turn the Power control clockwise and check that the 633 logo has illuminated. Connect a guitar to the INPUT socket and turn up the VOLUME. After a few seconds the amplifier will be warmed up and ready to use.

The Firefly offers the player a huge pallet of clean and driven tones with a very simple control layout. With the Power control set to maximum and the DRIVE On/Off switch set to OFF it offers the cleanest tone. Experiment with the Tone control and see how it affects the warmth and brightness of the tone. Reduce the Power control and hear the amp break up. Turn up the volume more to push the amp further into saturation. Adjust the tone again to affect the quality of the overdrive. Pull up on the TONE knob to select a tighter more mid range focussed tone. Note how this makes the overdrive tone more refined.

Now set the amp back to a maximum headroom clean tone again with the TONE control pushed back in and switch in the Overdrive using either the switch on the rear panel. Turn the DRIVE control clockwise to increase gain and distortion and use the LEVEL control to set the overall volume. See how changing the VOLUME and TONE controls affects the quality of the overdrive. Try with the TONE control pulled out and see how the mid boost sweetens up the overdrive tone.

Once you have a feel for how these controls operate and interact start to add Reverb to add more dimension to your tone. Note how these effects change when the amp is distorting compared to when the amp is clean.

Take a small (~2mm) flat bladed screwdriver and insert it into the hole between the Drive and Level controls. Turning anti-clockwise will reduce the reverb dwell time. At minimum it will sound like a small room. Turning all the way clockwise to maximum the reverb will last almost indefinitely. The trimmer has a detent in the centre position for resetting to 'standard'.

## Recording with the Firefly

The size and nature of the Firefly make it particularly easy to record. Great tones can be found at relatively low volumes and its compact size keep low frequencies under control helping the guitar sit nicely in the mix.

Mic placement is important in getting the tone you want. For the brightest clean tones try placing the mic towards the centre of the speaker cone. With overdriven tones you may want to move the mic towards the edge of the speaker cone. This will smooth out the higher frequencies and reduce fizz.

Close mic'ing where the head or capsule of the mic is only a few cm from the speaker cone is common, but great results can be had by placing the mic say half to one meter from the speaker. If using a mic with a figure-of-8 pattern then you

can balance the 'dry' amp tone with the ambience of the room by moving the mic closer or further from the speaker.

You can also record direct using the Cab Sim output. The tone won't be quite as detailed as when using a mic but will work well in many applications. Often it can be interesting to combine both direct and mic'd up tones.

### **Playing Live**

For rehearsing in a small room or for small intimate gigs the 7 watts produced by the Firefly can be sufficient. To maximise volume, placing the amp tightly in the corner of a room can increase the apparent loudness and bass response. For more volume you can take a cable from the Cab Sim out and go direct into the PA system. The sophisticated filter in the Cab Sim circuitry produces a very convincing simulation of a mic'd up guitar speaker. Use the tone controls on the PA mixer to tailor the tone coming through the PA system.

*Note although the Firefly has an inbuilt relay power off mute, to avoid any popping through the PA system either disconnect the cable or mute the channel on the mixer before turning the Firefly on or off.*

*Note - always keep the speaker connected to the amplifier. Failure to do so may damage your Firefly.*

Remember there are no rules on how to use musical gear so experiment and find your own voice and most importantly, enjoy the creative process. Please drop us a line to let us know how you find the Firefly or if you have any questions not covered in this manual.

*Cliff Brown*

## **Specifications**

- Valves: 6L6 x1, 12AX7 x2
- Power: 7 watts max variable down to 1/2 watt
- Input Impedance: 1M $\Omega$
- Speaker: Celestion VT 10" 8 $\Omega$
- Cab Sim Output: 50-300mV typical
- Dimensions: 380mm x 360mm x 230mm
- Weight: 10kg

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