

# Welcome to the Wobulator™

## THIS MANUAL CONTAINS IMPORTANT SAFETY INSTRUCTIONS -

### PLEASE READ BEFORE USE!!

The Wobulator™ is a twin oscillator tremelo/vibrato with extensive modulation capabilities. Even though it is possible to use the Wobulator™ without any knowledge at all, it is essential to grasp the following basic concept to understand what is going on. The modulator is split up into low and high frequencies (L Out and R Out respectively) each with their own modulation depth control (L Depth and R Depth respectively). The slight exception is Panner mode (see below). These can be thought of as being separate paths taken from the input signal which can be modulated as follows:

There are 4 basic modes:

- 1 **Tremulant** - both Left and Right move up and down at the same time, but with a "cross-over" effect where Left is low pass filtered and Right is high pass filtered.
- 2 **Panner** - Left and Right move in anti-phase motion without a cross-over, akin to a normal "figure-of-eight" auto-panner.
- 3 **Vibrato** - same as Tremulant but in anti-phase motion, creating subtle phase cancellation (and therefore pitch and volume change) effects.
- 4 **Dual Trem** - this again uses the cross-over but brings into play the second LFO. Left is now driven by LFO 1 and right by LFO 2.

Each LFO has a **Rate** control and an option for Triangle or Square waveforms. (LFO 2 operates in a higher range and goes up to audio frequencies which creates some unusual if subtle frequency modulation effects.) As you would expect the square waveform gives a "gated" effect which can get pretty weird in stereo. LFO 1 also has a Pedal input for controlling Rate as well as a Trigger Input, which resets the waveform each time it receives a suitable voltage. Both Left and Right outputs each have an "Enable" footswitch. Disabling the modulation on either one so that the other is moving against the straight signal opens up a whole new world of rather scary sounds! Note that the footswitches have a "soft" start which may result in a momentary increase in perceived level. The **Waveform selector** gives various waveform permutations from each LFO as shown on the panel. The **LED** indicators show the amount of attenuation and therefore are opposite to level indicators. This ceases to matter at high speeds (unless you are an insect or equivalent). All the above effects are available in mono where they are summed to (L/Mono).

#### HOUSING (BENEFIT)

Opening up the Wobulator™ and accessing the battery compartment is so simple it can stump the most highly developed musician's brain. There are no screws - you just lift the front panel up by the middle foot switch while holding down the outer casing and voila - as they say! Keep case closed when in use for maximum signal screening and minimum hum pick-up. This also prevents ambient light from disrupting the optical workings.

**WARNING!! The circuit board and components can be sharp - PLEASE DO NOT TOUCH!**

#### Battery holder

The clip on the back of the battery holder (opposite the contacts) is designed to latch on to the back of the battery. The ideal way to remove the battery is with a pen by lifting the back of the battery and sliding the pen underneath, between the battery and the holder, thus releasing the battery from the clip. Alternatively you can lever it out using a suitable blunt instrument (e.g. medium to large screwdriver) but make sure you lever against the battery holder and not the pedal casing.

**WARNING!! Never attempt to remove the battery by pulling on it with excessive force! Avoid placing your hand near the circuit board.**

#### CONNECTIONS (TOP PANEL RIGHT TO LEFT)

##### In/On

Connecting a jack to this will power up the unit when using a battery. Please note this will use battery power even if the pedal is in bypass. You can connect either the output of your instrument, or the output of another effect or a send from a mixer.

##### Power jack

This is a commonly available type of jack for connecting a power supply (a.k.a. psu, AC adapter, wall wart)

**WARNING!! If you wish to use a power supply you must remove the battery first. Never have a battery and a power supply connected at the same time (see below).**

#### BATTERY OR POWER SUPPLY? (or "How To Get Your Money's Worth!")

Even though the Wobulator™ will run on a suitable battery (e.g. 9 volt PP3, 6F22 or MN1604 type) and a battery holder is provided, we strongly recommend that this is only as a last resort as the performance of the pedal will be seriously compromised! The inherent voltage decrease (esp. over time) and the relatively high internal resistance of batteries (compared to the low impedance of a good quality regulated power supply) will not be flattering to the potential sound. A dying battery will sound awful! The maximum current consumption is approx. 30mA, but even with no signal or modulation it will be relatively high. This means that even an alkaline battery will not last very long. In the long term it makes absolutely no financial (or ecological) sense to keep replacing them when you can buy a power supply for literally the price of a few disposable batteries. The Wobulator™ will sound even better on 12 volt operation, giving extended modulation depth and headroom (very desirable for studio applications). **NEVER RUN THIS PEDAL ON MORE THAN 12 VOLTS!!** Please note also that a single power supply can be made to run a number of pedals (easily done with a more than fashionable Lovetone pedal board!)

#### POWER SUPPLY SPECIFICATIONS:

The power supply should have a Japanese-style, tip (centre) negative, "barrel" type connector. This type of connector is widely used in many devices and should be readily available from music or electronics outlets. (We do not currently sell power supplies.)

**IMPORTANT!!** Even though it is widely used, it is a non-standard part and comes in many size variations not all of which will work reliably. The connector has a dual function; to supply power to the pedal and also switch out the battery supply if a battery is fitted. The ideal dimensions for the connector are 2.1mm internal diameter and 5.4mm external diameter. Lovetone cannot guarantee that the correct connector will be used at all times by all customers and we therefore stress that when using a power supply you remove the battery first. Do not connect a power supply without

checking to see if a battery is fitted.

For safety reasons we recommend using a power supply with **double insulation** as opposed to earthing /grounding - in addition this will help prevent hum loops. It should be well **smoothed**, otherwise you can also get hum problems (from "ripple" on the dc output). The power supply should also be of the **regulated** type, which means that its output voltage should not vary significantly with load.

Voltage: the output should be 9v or 12v d.c. (or either if it has a selector switch).

**WARNING!! Never use more than 12v as this can result in permanent damage.**

Current: the current rating should be a minimum of 200mA (0.2A) up to 1.5A. Higher current (more expensive) supplies will generally have a stiffer, smoother output resulting in a cleaner sound. Anything higher than 1.5A, however, would be a waste of money for running a bunch of pedals. PLEASE NOTE: THE CURRENT RATING OF THE POWER SUPPLY IS ITS MAXIMUM CAPACITY - THE PEDAL WILL ONLY DRAW THE CURRENT IT REQUIRES!!

#### Trigger jack

A positive voltage greater than +0.7V and not exceeding +9V can be applied to this socket (tip +ve, sleeve ground). Please note that this constitutes a range that may exceed normal "line" level. If using an FX send or group output from a desk, a high level of gain may be required for effective audio triggering. (You could also try a headphone output). The Wobulator™ responds mainly to the low frequency content of trigger signals. As long as this voltage is applied the movement of **LFO 1** will be arrested. Removing the voltage will restart the oscillator. A Gate or Pulse (e.g. from a synth, drum track or any other suitably percussive high level signal) will allow synchronisation of **LFO 1** with your track. This obviously requires setting the **LFO 1** rate to give the desired effect (which of course does not necessarily have to be 4 to the bar - lower rates will give gating or "ramp" effects and higher settings can give for instance triplet or "burst" effects). In environments where there is a strong mains electricity field present (i.e. studios, live, power stations etc.) it may be possible to perform triggering by merely touching the tip of a lead connected to the trigger jack with your finger. This is not dangerous - it's magic. If the Wobulator™ doesn't respond, it's not faulty - it just has a headache. (As a special bonus in square wave mode the "frozen" state will be somewhat unpredictable.)

#### Pedal jack

This enables external foot pedal control of **LFO 1**. (The position of the **LFO 1 Rate** control will determine the default lowest speed setting available from **LFO 1**.) Also, connecting a footswitch to this socket will give either full speed or whatever default setting is dialled in on the **LFO 1 Rate** control.

#### **WARNING!!:**

**The pedal input jack is to be used with a passive (i.e. non-battery using) volume pedal such as the Boss FV50/FV60.** Connect the output of the volume pedal to the socket. It is essential that any such device is fully insulated from other electronic equipment or earthed chassis.

**DO NOT CONNECT ANYTHING ELSE TO THIS (E.G. INSTRUMENTS, AMPS ETC.) AS THIS COULD RESULT IN PERMANENT DAMAGE.**

#### Phase switch

This is an addition to the original design and reverses the phase of the right output (or the right signal prior to summing with the left in mono use). In the + position the pedal

performs exactly as before. The - position, however, offers many new sounds and textures for both mono and stereo operation. Please note that in this mode (especially in mono use) the bypass signal may sound "scooped out" on some settings.

#### R Out

This gives the right output signal in stereo use. It is isolated to avoid ground/earth loop problems in stereo applications (especially with separately earthed/grounded equipment).

#### L/Mono

This gives the left output signal in stereo use and a summed (mono) output when there is nothing connected to **R Out**. It is always connected to the input signal earth or 9V earth.

#### Attention mono amp-with-two-or-more-channel owners!

The Wobulator™ provides an excellent way of channel-linking. Set the channel volumes to a similar level and experiment with different tone settings as well as different settings on the pedal. Used in this way with vintage classics the phase switch comes in to its own as some (e.g. Twin Reverb, AC30 top boost) have their channels out of phase while on others (non-mv Marshalls, HiWatts, Selmers, Vox AC50s, most Gibson GA amps, and other black face and tweed Fenders without reverb such as the '59 Bassman) they are in phase.

**IMPORTANT!! Please ensure that associated equipment e.g. amplifiers (especially of the valve variety) and any other equipment connected to this product is safely earthed. Always use high quality cables, connectors and power supplies. Lovetone cannot be held responsible for misuse of this product due to associated equipment being faulty, unsafe or poorly maintained.**

**LOVETONE SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT OR CONSEQUENTIAL LOSS, HOWEVER CAUSED, RESULTING FROM THE USE OF THIS PRODUCT.**

This product is guaranteed by Lovetone for a period of ONE YEAR from the initial date of shipment by Lovetone to a distributor, dealer or end user. Lovetone will at its discretion repair or exchange for a new one, free of charge, any faulty or defective product returned to it within the above period except where the product:

- a/ is deemed by Lovetone to have suffered unreasonable misuse or abuse
- b/ has been tampered with or modified either in any way not compatible with normal use as suggested in the manual, or without the express permission of Lovetone.

PLEASE NOTE: If any product is found to be defective or develops a fault please contact us first on +44 1491 571411 or e-mail [info@lovetone.com](mailto:info@lovetone.com) before sending it back as most problems can be sorted out by phone, fax or e-mail.

**IMPORTANT!! If you do have to return the pedal and are outside the United Kingdom you must write clearly on the customs declaration:**

**"RETURNED FOR REPAIR UNDER WARRANTY - CUSTOMS VALUE ZERO"**

**LOVETONE RESERVES THE RIGHT TO PASS ON TO THE CUSTOMER ANY CHARGES INCURRED IF THE CUSTOMER DOES NOT DO THIS.**

**ALWAYS REMOVE THE BATTERY WHEN POSTING A PEDAL!!**

Lovetone products are subject to continuous refinement and improvement. Lovetone reserves the right to change the specifications of its products without notice. Lovetone is not under any obligation to retrofit any such changes or improvements to earlier models.

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