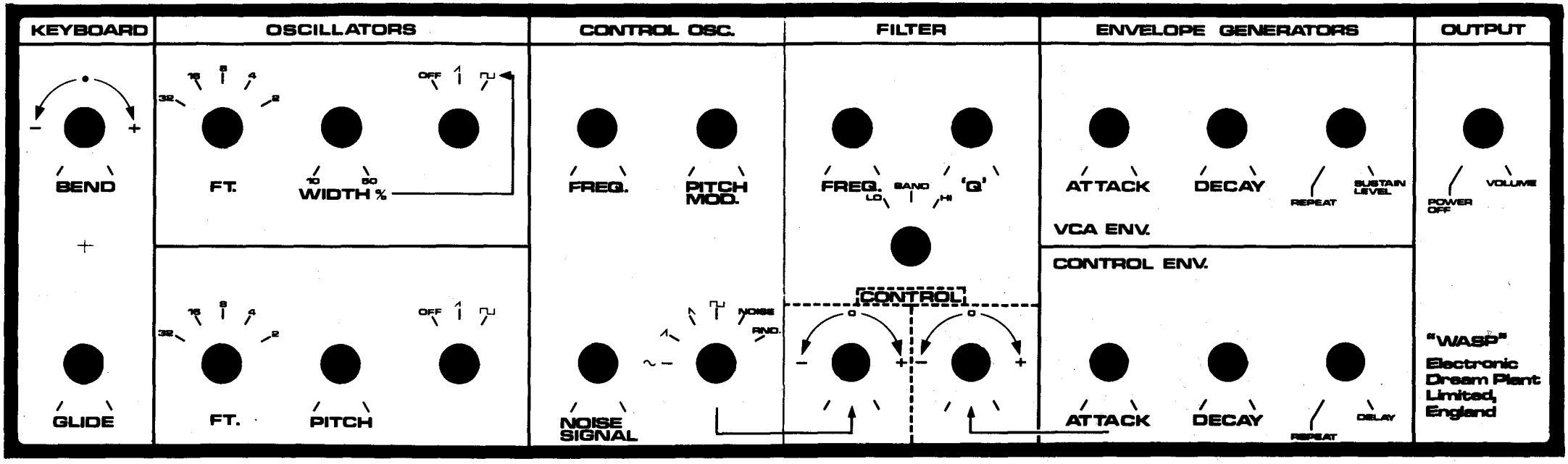
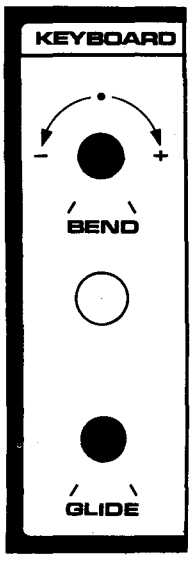
WASP SYNTHESISER ELECTRONIC DREAM PLANT LTD

Wasp Performer's Manual



KEYBOARD SECTION

The two octave keyboard controls the frequency of the oscillators and filter. The conductivity of the fingers touching the keyboard provides the means by which the digital sensor selects a particular frequency which in turn ensures that the oscillators are constantly in tune. **You will find a hole located above the top note of the keyboard; through this hole there is a *pre-set* (a small screw) for adjustment of the keyboard 'touch' sensitivity. An adjustment may be necessary due to varying finger sizes.**



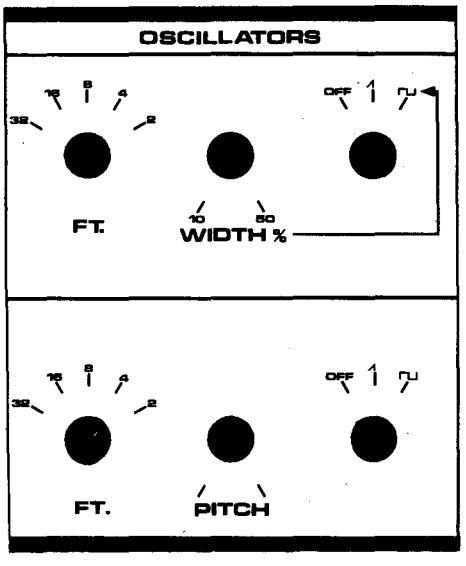
The keyboard also provides a trigger which sets off the envelope generators (see Envelope Generators and Output sections).

On the control panel there is a 'bend' knob which is normally set in the centre position and by turning this knob to either side, one can shift the keyboard pitch up or down.

Below the 'bend' knob there is another hole containing another pre-set for altering the tuning range of the keyboard. When you receive your 'WASP' you will find the keyboard tuned to concert pitch (A=440), but this pre-set can be used should you wish different tuning.

The lower knob is a 'glide' control, which, if turned clockwise slows down the change from one note to another: (this is also known as 'portamento').

OSCILLATORS



There are two signal oscillators in the 'WASP'.

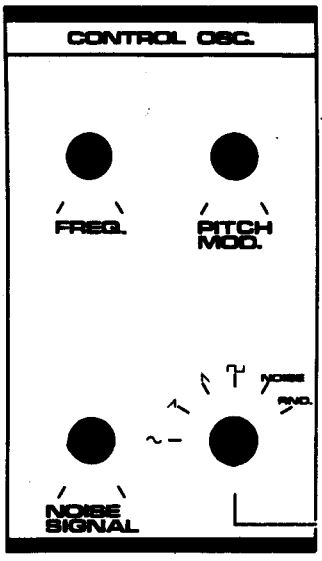
Oscillator 1: the term 'feet' (FT) is used as in organs because the length of an organ pipe determines its note; when the length is halved, the note increases by an octave. You will find 5 switch positions which range from '32' foot to '2' foot, and this provides a five octave range.

The right-hand knob has three position, 'OFF', 'sawtooth', and 'square' wave.

The square wave is linked to the centre knob which controls its width.

Oscillator 2: this has similar controls except for the 'pitch' control which allows the interval between the two oscillators to be adjusted.

By using the 'glide' control, the tuning of the two oscillators is offset during the glide producing an interesting effect.

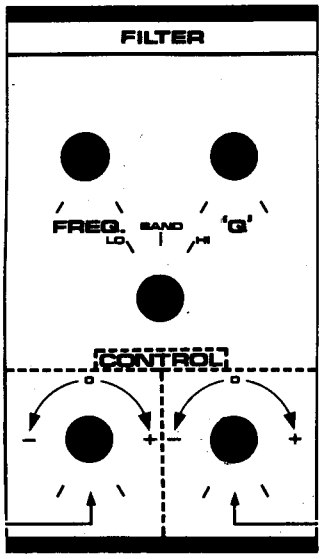


CONTROL OSCILLATOR

This is a low frequency oscillator which provides no sound itself but can be used to control both oscillators and filter. The 'frequency' knob adjusts the speed, and 'pitch mod.' controls the two oscillators.

The 6-way switch on the lower right provides the choice of control. These controls are sine wave (vibrato), rising sawtooth, falling sawtooth, square wave, noise and random (RND), which turns on a sample and hold circuit.

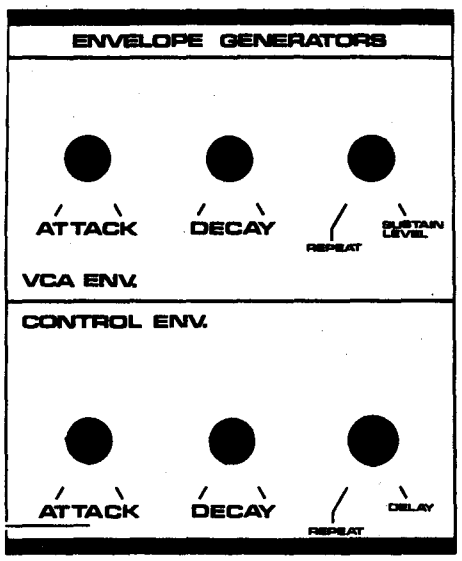
Noise signal: this knob produces white noise, which is useful for percussion sounds.

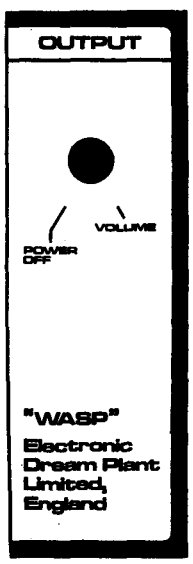


FILTER SECTION

There are three types of filtering available: low pass, band pass and high pass. All have an adjustable 'Q' which resonates the filter to enhance individual harmonics. A manual control adjusts the filter's frequency.

Control: these two knobs situated beneath the filter are used to control the filter from the control oscillator and control envelope (see 'control Env.'). They are set in centre position and have '+' and '—' functions, i.e. a rising sawtooth can control the oscillators whilst the reverse (falling) is available to control the filter.





Link sockets: these 7-pin DIN sockets enable any number of 'WASPS' to be connected together. In future these will be used to connect additional accessories such as digital sequencers when they become available.

ENVELOPE GENERATORS

VCA Env.: this contains three knobs: attack, decay and sustain/repeat.

Attack: this increases the volume of the signal at a rate set by its position.

Decay: this has a dual function. Firstly it comes into effect directly after the 'attack' and reduces the volume of the note at a rate set by its position while the finger remains on the keyboard. Secondly, when the finger has been removed, it comes in again after the 'sustain level' to produce a controlled fading of the note.

Sustain level/repeat: while the finger remains on the keyboard, this controls the volume of the note. By turning the knob to the left until it clicks you are then bringing in the 'repeat' facility. This operates attack and decay which controls the speed of the repeat.

Control Env.: this is a separate envelope which is only used to control the filter (see Filter section) and provides a separate attack, decay and repeat facility. It also has a 'delay' knob; when turned to the right this produces up to one second delay.

OUTPUT AND LINK SECTION

The volume control is also a power off switch; **please ensure that the 'WASP' is switched off after use to preserve battery life.**

Line out: this socket switches off the internal loudspeaker when plugged in and enables you to use alternative amplification.

Phones: this is a socket for stereo headphones, which also switches off the loudspeaker when in use. (NOTE: The output will be mono.)

9VDC mains adaptor: a 9 volts DC calculator type adaptor may be used instead of batteries.

BATTERIES

When the batteries have run down, the touch keyboard will not operate properly and tuning may drift a little.

Six 'C' size batteries are used; high power types such as HP11 are recommended. A battery symbol in the battery compartment shows how to fit them.

Technical Data

KEYBOARD

BEND:— Approximately one tone up or down with 90° centre "dead band".

TUNE:— Approximately one tone up or down (pre-set to A=440 Hz).

GLIDE:— adjustable up to 3 second sweep over two octaves.

OSCILLATORS

Oscillator 1: choice of five octaves — 32' to 2' sawtooth or pulse adjustable from 10% to 50% duty cycle.

Oscillator 2: As oscillator 1 but with sawtooth or square waveform; pitch continuously variable over more than one octave, encompassing oscillator 1 pitch.

CONTROL OSCILLATOR

1 Hz to 100 Hz approx.

Sine, rising or falling sawtooth, or, square waveform. Also available for control are white noise or noise sampled and held at control oscillator rate. Pitch of oscillators 1 and 2 can be modulated by approx. ± 1 tone from control oscillator.

NOISE

Level control adjusts amount of white noise added to oscillator signals (Oscillators 1 and 2).

FILTER

Low pass, band pass (fixed bandwidth) or high pass. 'Q' factor adjustable from maximally flat to verge of oscillation.
Automatic overload limiter.
12dB/octave roll off in low or high pass.
6dB/octave in band pass.

© COPYRIGHT JUNE 5th 1978
PATENT APPLIED FOR 39335/78

Turnover frequency is proportionally controlled by control oscillator*, control envelope generator* and manual frequency control. Turnover frequency is also proportionally controlled by keyboard. Frequency range 3-16 KHz
*continuously variable control from +Ve to —Ve

ENVELOPE GENERATORS.

1. VCA ENV. GEN.:— linear attack rate variable from 3mSec. to 2 Sec. Exponential decay rate variable from 3mSec. to 12 Sec. Decay is interrupted by a sustain period while the keyboard is being touched. The sustain signal level is adjustable. The repeat function causes continuous attack/decay cycles while the keyboard is being touched.

2. Control ENV. GEN.: Triggered by VCA ENV. GEN. via delay adjustable up to 1 Sec. Linear attack and decay rates separately adjustable from 15m Sec. to 6 Sec. Repeat function causes continuous attack/decay cycles to occur.

OUTPUTS

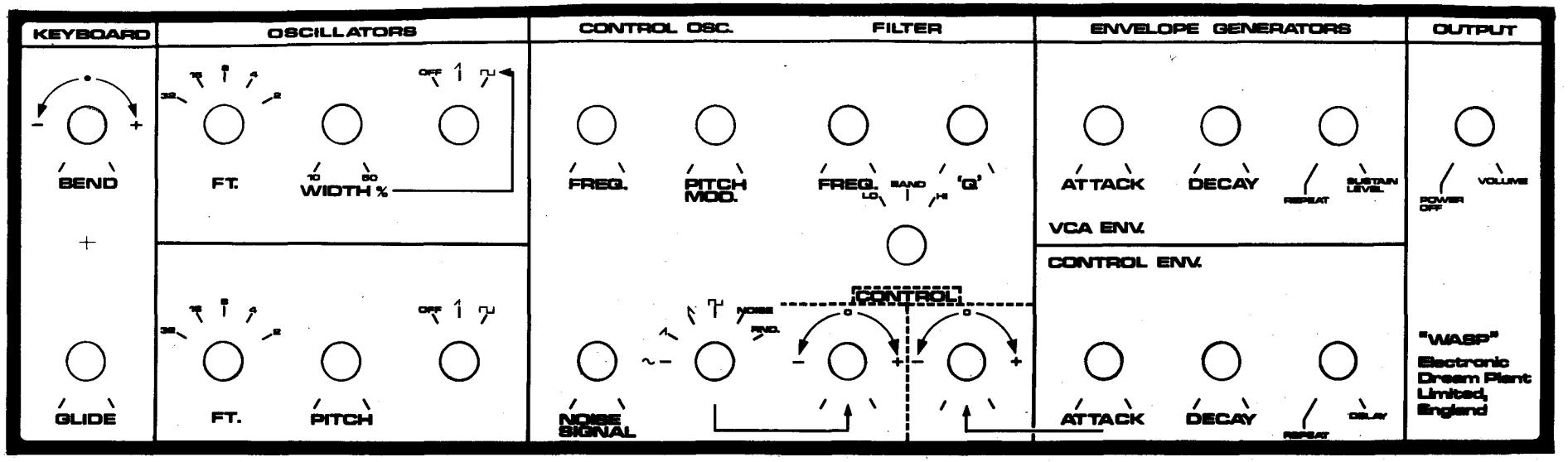
Power on/volume control adjusts line output, headphones output and loudspeaker level.
Nominal output characteristics at full volume:—
Line output:— 10dBM, 600Ω
Headphone output:— 0dBM, 50Ω
Noise level at line output in quiet state:— 65dBM

POWER

Consumption 45mA with speaker not is use
150mA at max. speaker volume.

INTERFACE

Three state interface lines — one trigger and 6 code lines.



NOTES:–

You may like to use this to keep a record of your own sounds.

ELECTRONIC DREAM PLANT LTD

RED GABLES
STONESFIELD ROAD
COMBE
OXFORD OX7 2ER