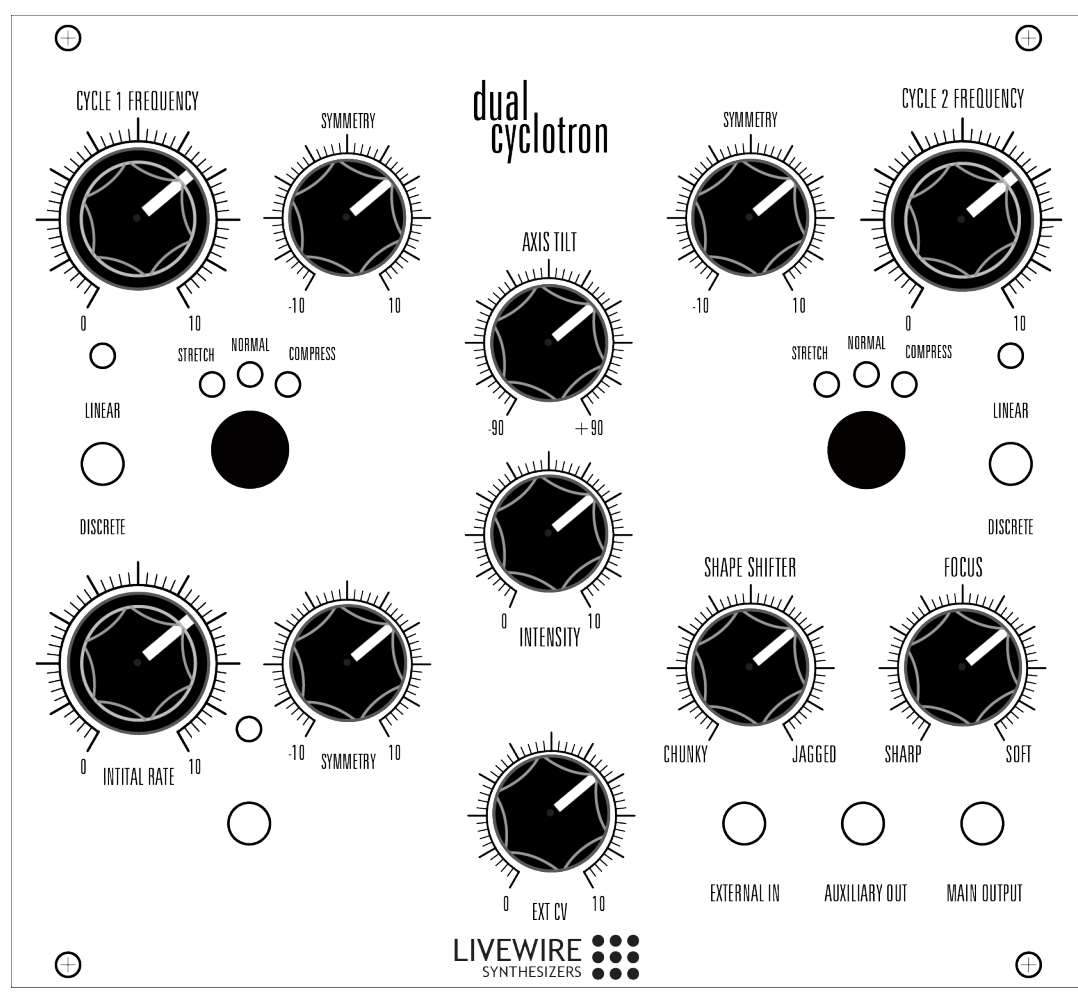


LIVEWIRE SYNTHESIZERS



dual cyclotron 7

OPERATION MANUAL

INTRODUCTION:

The Livewire Dual Cyclotron is a complex output, CV modulation source.

OPERATION SUMMARY:

Function of the Dual Cyclotron is divided into three sections:

- a. **THE CYCLOTRONS**
- b. **MAIN LFO**
- c. **Input/Output**

The two Cyclotron waveform outputs are summed together and routed the **AUXILIARY OUT** and to a modulation input for the MAIN LFO.

The MAIN LFO can also be modulated by the **EXTERNAL CV** input prior to final waveshaping enroute to the **MAIN OUTPUT**

SECTION 1 - THE CYCLOTRONS:

The Cyclotrons are waveform oscillators capable of Low to Audio frequency rates.

Initial frequency ranges are selected by **TIME CONTINUUM** momentary switch (options are STRETCH/NORMAL/COMPRESSED).

Waveform Frequencies can be fine tuned using the **CYCLE FREQUENCY** controls.

Initial waveshapes are selected by the **LINEAR/DISCRETE** toggle switch.

Waveform symmetry is adjusted by the **SYMMETRY** control (next to **CYCLE FREQUENCY** controls).

The output waveforms are mixed and individual levels adjusted by the **AXIS TILT** control.
The final level of the summed output are adjusted by the **INTENSITY** control.

The summed output is routed the **AUXILIARY OUT** and to a modulation input for the MAIN LFO.

SECTION 2 - MAIN LFO

The MAIN LFO is routed to the **MAIN OUT** via the **SHAPE SHIFTER** and **FOCUS** controls.

Initial frequency range is controlled by the **LF/AF** toggle switch and fine tuned by the **INITIAL RATE** knob.

MAIN LFO waveform symmetry is controlled by the **SYMMETRY** knob.

Additional waveshaping is controlled by the **SHAPE SHIFTER** and **FOCUS** controls.

SECTION 3 - INPUT/OUTPUT

EXTERNAL IN allows an external CV source to modulate the MAIN LFO.
External CV levels are attenuated by the **EXT IN** knob.

AUX OUT is the summed output of the CYCLOTRONS.
Output levels are attenuated by the **INTENSITY** knob.

MAIN OUT is the master output of the Dual Cyclotron

ADDENDUM:

NORM/INVERT jumper

The **NORM/INVERT** jumper on the rear of the Dual Cyclotron permits the inverting of the **MAIN OUT** waveform

TRIM POT

The trim pot on the rear of the Dual Cyclotron has been factory calibrated. Users should avoid adjusting this control as it is possible to cause the MAIN LFO to stop oscillating.

TROUBLE SHOOTING

Extreme settings of the **SYMMETRY** controls on the Cyclotrons and/or the MAIN LFO can cause them to stop cycling. In the event any of the LFO's stop cycling, adjust the corresponding **SYMMETRY** control.

In the event there is no waveform coming from the AUX OUT jack, check the settings of the **INTENSITY** control (**INTENSITY** controls summed output level to **AUX OUT** and MAIN LFO).

WARRANTY

Warranty 1 year parts and workmanship full coverage (buyer pays return shipping). Initial defects should be returned to dealer or initial point of purchase (subject to dealer return policy).