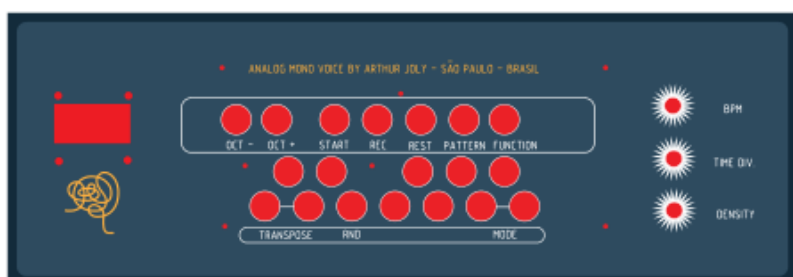
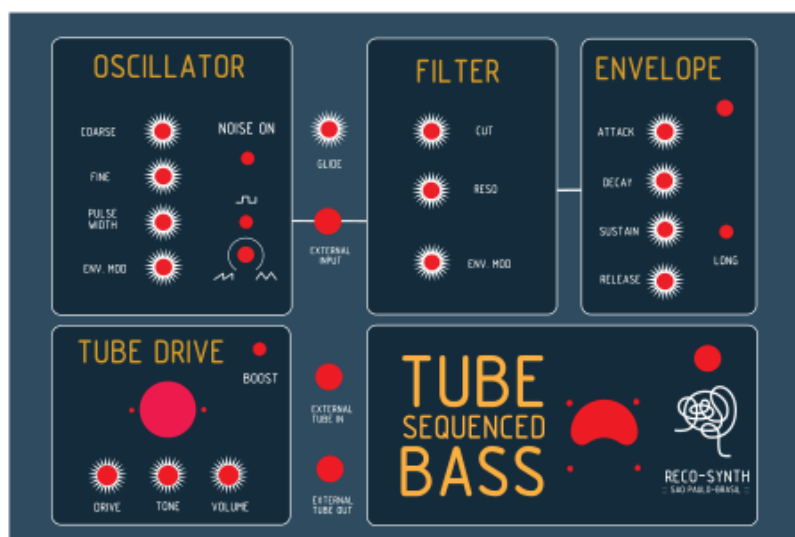


TUBE SEQUENCED BASS

RECOSYNTHS | USER MANUAL



ANALOG MONOPHONIC SYNTHESIZER • SÃO PAULO, BRAZIL

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This manual describes the controls and functions of the Tube Sequenced Bass. The illustrations reproduce the original RecoSynths instrument panels.

01 — INTRODUCTION

The RecoSynths Tube Sequenced Bass is an analog monophonic synthesizer based on the CEM3340 oscillator, used in classic instruments such as the Sequential Circuits Prophet-5 and Pro-One.

It combines a RecoSynths-designed 24 dB/octave analog filter, an analog envelope generator, an analog VCA, and a tube saturation stage positioned between the filter and the VCA.

The instrument can also process external audio signals. Its built-in sequencer offers pattern programming, CV/Gate control of external synthesizers, and creative features such as DENSITY.

02 — GETTING STARTED

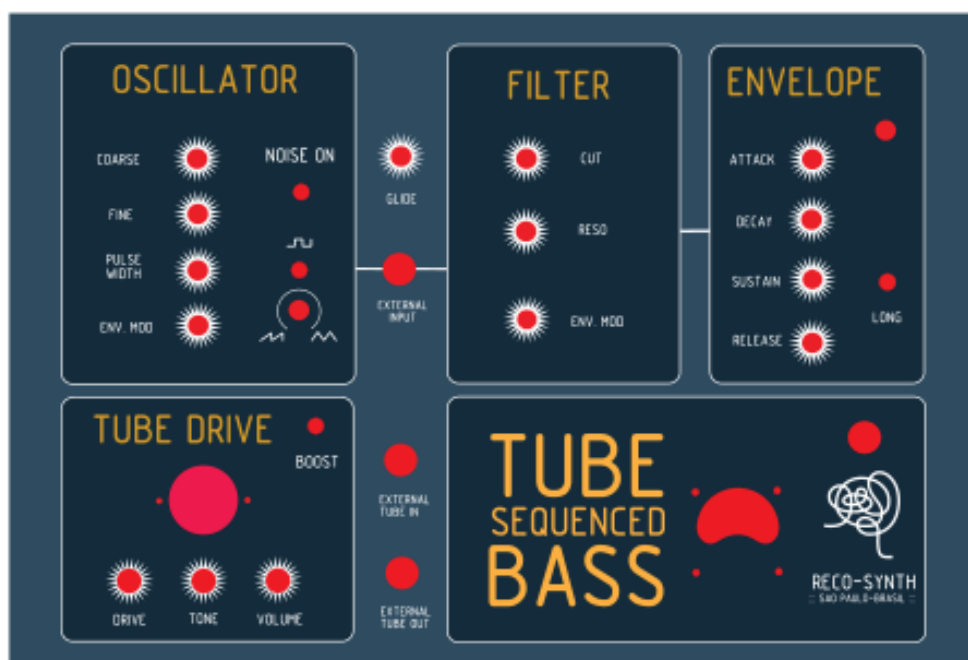
Power: check the voltage rating of your particular unit before connecting it to the mains. The standard configuration is 110 V; some export units accept voltages up to 240 V. If in doubt, contact the manufacturer before powering on.

Connect a cable from the rear-panel AUDIO OUT to your audio system, starting with the volume turned down. Switch on the instrument and play using the keyboard built into the sequencer.

Explore the oscillator's COARSE and FINE controls, the filter cutoff, and the envelope settings. To begin, set ATTACK to minimum and leave TUBE DRIVE switched off.

To use tube saturation, wait 4 minutes after powering on, engage BOOST, and gradually raise the VOLUME control in the TUBE DRIVE section.

03 — OSCILLATOR



COARSE

Main tuning control. Its wide frequency range extends from very low frequencies approaching LFO territory to high frequencies beyond the audible range. The instrument has no fixed tuning reference; use an external tuner when needed.

FINE

Provides small, precise tuning adjustments.

PULSE WIDTH

Changes the pulse width when the square wave is selected, producing rectangular waveforms with different harmonic content.

ENV MOD

Sets the amount of envelope modulation applied to oscillator frequency, useful for pitch attacks and percussive sounds.

NOISE ON

Adds a fixed-level, high-intensity noise signal.

WAVEFORM

Continuous selection: sawtooth on the left, square in the center, and triangle on the right. Intermediate positions offer additional tonal variations.

The oscillator is calibrated to the 1 V/octave standard and receives note control from the internal sequencer and via MIDI.

04 — FILTER

The RecoSynths 24 dB/octave analog filter has an aggressive character. At high resonance settings it can self-oscillate and produce piercing tones. Start at a low listening volume when exploring these settings.

CUT — CUTOFF

Sets the cutoff frequency. Closing the filter reduces high frequencies, producing a darker sound.

RESO — RESONANCE

Emphasizes frequencies near the cutoff point and can cause self-oscillation at extreme settings.

ENV MOD

Sets how strongly the envelope modulates the cutoff frequency.

Signal Routing to Tube Drive

The filter output is routed to the TUBE DRIVE section before reaching the VCA. With BOOST down, the tube stage is bypassed; with BOOST up, the signal passes through the tube circuit.

05 — ENVELOPE

The analog ADSR envelope generator shapes the sound's amplitude through the VCA and can also modulate the filter and oscillator frequency.

ATTACK

Time taken for the envelope to rise from 0 V to its 5 V peak after a note is triggered.

DECAY

Time taken to fall from the peak to the SUSTAIN level.

SUSTAIN

Level held while a key remains pressed.

RELEASE

Time taken for the envelope to return to zero after the key is released.

Envelope modulation of the oscillator produces fast pitch attacks and percussive tones; modulation of the filter creates dynamic cutoff movements.

06 — TUBE DRIVE

The TUBE DRIVE section uses a 12AX7 tube operating at low voltage. Its circuit draws inspiration from the Valvecaster / Safety Valve family of designs, shared with the DIY community by Look Mum No Computer (Sam Battle), and includes original modifications by RecoSynths.

Positioned between the filter and the VCA, this stage adds saturation and harmonics to the signal.

DRIVE

Adjusts the intensity of saturation.

TONE

Shapes the tonal character of the distortion.

VOLUME

Sets the output level of the tube circuit.

BOOST

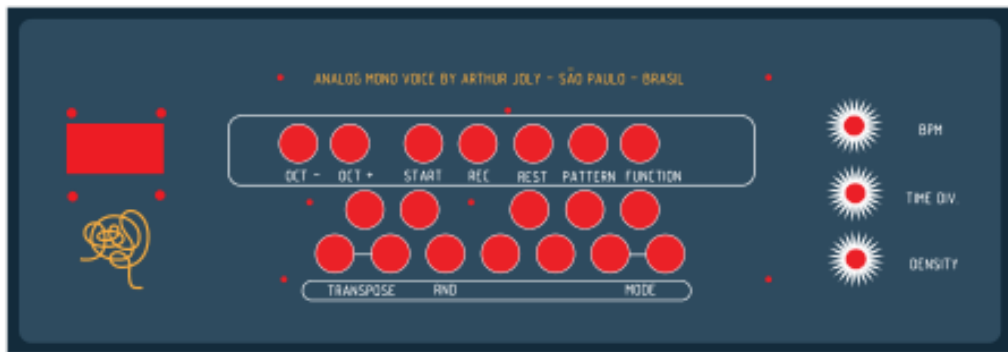
Down: bypasses the tube stage. Up: routes the signal through TUBE DRIVE.

Semi-Modular Connections

EXTERNAL TUBE IN only: external audio enters TUBE DRIVE and continues to the synthesizer's VCA.

EXTERNAL TUBE IN + EXTERNAL TUBE OUT: external audio passes through the tube circuit and exits through OUT, interrupting the subsequent path to the VCA. In this configuration, the tube stage works as a standalone processor.

07 — SEQUENCER



Developed for RecoSynths by Brazilian engineer Ícaro Ferre, the sequencer uses digital programming with analog CV and Gate outputs. It provides 12 pattern memories and a keyboard with three selectable octaves.

BPM

Sets the sequence tempo when using the internal clock.

TIME DIV

Selects the timing division used for playback.

DENSITY

Randomly selects which recorded notes will play. Fully clockwise, all notes play; turning counterclockwise progressively reduces the number of notes played.

OCT - / OCT +

Select among the keyboard's three octaves.

START

Starts or stops playback.

REST

Inserts a rest during recording.

07 — SEQUENCER (CONTINUED)

Recording a Pattern

1. Press PATTERN and select one of the 12 memory keys.
2. Press REC to start recording.
3. Play the desired notes; use REST to insert pauses.
4. Press REC again to save the sequence to the selected pattern.

Special Functions

FUNCTION + A / B

Transposes the sequence down / up.

FUNCTION + C / D

Changes the note from which the sequence starts.

FUNCTION + E

Generates a new random selection based on the DENSITY setting.

FUNCTION + F

Normal mode: play the keyboard or the patterns selected with PATTERN.

FUNCTION + G

Keyboard Mode: each key triggers a stored sequence.

PATTERN + keys 1-12

Selects one of the 12 stored patterns.

Controlling External Synthesizers via CV/Gate

Connecting the rear-panel CV and Gate jacks disconnects the sequencer from the internal synthesizer and routes its control to the external instrument instead. It does not control both destinations simultaneously.

08 — REAR PANEL CONNECTIONS



The rear panel provides AUDIO OUT, CV OUT, GATE OUT, MIDI IN, and MIDI OUT. The CV/Gate outputs can control external analog synthesizers, as explained in the previous chapter.

MIDI — CHANNEL 1

The Tube Sequenced Bass operates on MIDI channel 1, receiving note information from compatible MIDI keyboards, sequencers, and other MIDI devices.

09 — TUBE MAINTENANCE AND REPLACEMENT

The 12AX7 (ECC83) tube operates at low voltage and normally has a long service life. Routine replacement is not required; consider replacing it only in the event of failure or a significant change in performance.

Switch off the instrument, unplug the power cable, and allow it to cool completely. Internal access and replacement should preferably be performed by a qualified technician.

If the tube is fitted in a removable socket, gently rock it from side to side with very small movements while pulling it free. Do not twist it or force the glass. Fit a replacement 12AX7, carefully aligning the pins. If the tube is soldered in place, do not attempt to pull it out.

Warning: never open the instrument while it is connected to the mains. Internal components may retain electrical charge even after power has been disconnected.

Service Life

Tube life depends on operating conditions. Sam Battle's Safety Valve design uses the 12AX7 at a relatively low temperature, which may support a long service life. No specific operating-hour rating has been validated for the Tube Sequenced Bass.

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