

# therevox

ET-4.1

user manual



Therevox builds custom musical  
instruments in Tecumseh Ontario Canada.

The ET-4.1 was designed and constructed  
by Mike Beauchamp and Melissa  
Damphouse with heaps of support from  
family, friends and our customers.

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Made in Canada

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ET-4.1  
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# contents

Playing	1
Switches	3
Oscillators	4
Filter and Reverb	6
Power and Outputs	7
Exp and CV Jacks	8
Care	10
Technical Info	11

# playing

The ET-4.1 is a continuous pitch analog instrument. Sounds are produced by two oscillators, each producing six different waveforms. A low-pass filter and spring reverb allow for further sonic goodness.

The pitch of the instrument is controlled by the ring and the amplitude of each oscillator is controlled by the pressure sensitive intensity keys.

### The Keys



2

By varying the pressure on each of the intensity keys, you create amplitude envelopes for each of the oscillators.

Use these separately to switch between different voices, or mix the oscillators together creating unique sounds.

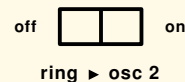
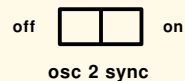
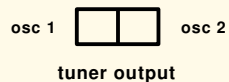
### The Ring



The ring controls the pitch of the oscillators. The reference keyboard allows you to point to notes and everything in between.

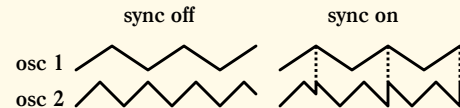
The ring can be adjusted to fit comfortably between the first and second knuckle by moving the rubber retainer to a different notch.

## switches



A tuner can be connected to silently verify and modify tuning of either oscillator at any time. The tuner output switch selects which oscillator to tune.

3  
Synching oscillator 2 will force the waveform to reset at the same pitch as oscillator 1.



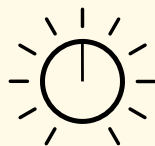
The pitch of oscillator 2 can follow the ring or be disconnected from it using the ring > osc 2 switch. Disabling this allows oscillator 2 to be set to a consistent pitch.

# oscillators

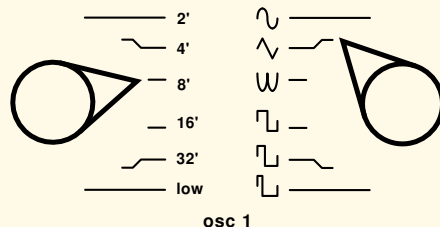
Ring offset is the master tuning control for both oscillators and the external ring CV.

Oscillator 2 can be tuned independently using the osc 2 offset control. This control can also be used to detune or offset the pitch of oscillator 2 to any harmonic interval of oscillator 1.

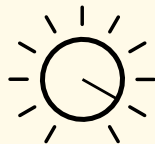
For each oscillator there are six octave positions and six waveform options.



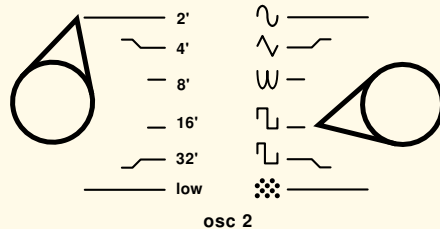
ring offset










osc 1



osc 2 offset



osc 2

-  Sine Wave
-  Triangle Wave
-  Rectified Sine
-  Square Wave
-  30% Pulse
-  10% Pulse
-  White Noise

# filter and reverb



filter cutoff

The filter cutoff alters the timbre of the oscillators. Turning the knob clockwise on this low-pass filter allows increasingly higher frequencies to be heard. This can also be controlled with an expression pedal or external control voltage plugged into the exp jack.



dry+reverb mix

Reverberation is generated by sending the sound through a series of springs inside the ET-4.1. The dry+reverb mix knob controls the blend between the original and reverberated sound.



output volume

The amplitude of the output signal is controlled by the output volume knob.

# power and outputs

power



16VAC

tuner



output

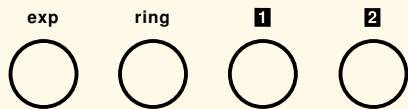


The ET-4.1 is powered by a 16VAC 1000mA adapter.

An instrument tuner can be plugged directly into the front panel.

The output is a line-level signal, appropriate for most recording equipment, amplifiers and effects. Lower the output volume if you experience unwanted distortion.

# exp and cv jacks



8

An expression pedal can be used to control the filter cutoff frequency. Use a 1/4" TRS plug with an appropriate pedal. The exp input can also accept an external CV within 0 and +10V.

To interface with external synthesizer gear, control voltage outputs are available on the side panel. A 1V/oct CV for the ring is available, as well as control voltage outputs for each intensity key.

A 1/4" mono cord can be used on the side panel to create custom patches.

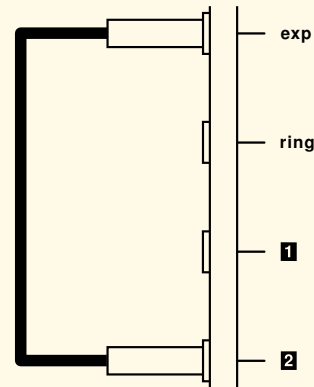
ring -> exp : filter cutoff frequency will change with ring position.

[1] -> exp : control the filter cutoff frequency with intensity key 1.

[2] -> exp : control the filter cutoff with intensity key 2. Optionally mute oscillator 2 by turning sync on and setting this oscillator to the lowest octave.

Tune Out -> exp : use osc 2 as an LFO by setting it to "Low" and disabling ring > osc 2.

The filter cutoff knob changes the range when using the exp input.



9



## care

This instrument is handcrafted out of North American black walnut and is protected with a hand rubbed tung oil finish.

Panels and wood can be cleaned with a slightly damp rag.

Because of the internal spring reverb, take care when handling and moving.

Avoid water and extreme temperatures. In case of emergency, do not use instrument as a flotation device.

Your instrument has been calibrated and tested by Therevox. Please contact us if you have any questions or comments.

## technical info

### Power

voltage: 16V AC 1000mA. (Not DC!)  
input: 2.1mm barrel type.

### Ring CV

voltage: 0 to +6V @ 1V per octave.  
impedance: <100 ohm.

### Key CV

voltage: -0.15V to +10V.  
impedance: 1000 ohm.

### Audio Output

voltage: 3V p-p.  
impedance: 5000 ohm.

### Expression Pedal

type: 1/4" TRS. Tip - CV, Ring - Reference, Sleeve - Ground.

