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ФГБДЯС

Фантастически гламурный интересный
бравурно-динамичный совершенный механизм



USER MANUAL

V1

CONCEPT

Oligarc is a collection of 4 world class audio effects, tied together by a set of modulation sources that can act on various parameters of each effect. Oligarc can be an LFO-driven filter, an envelope-controlled phaser, a gate-triggered saturation effect, an output ADSR envelope, or whatever else you can think up.

In addition, the Oligarc package contains standalone versions of the Oligarc drive, phaser, and chorus effects, for more traditional usage -- although we don't think there's anything traditional about these effects.

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■ OLIGARC DRIVE

Oligarc Drive is an analog saturation effect, sweet and musical in moderation; gloriously naughty when abused.

Balance the **input** and **drive** knobs to determine how hard you're hitting the virtual saturation circuit. The higher both are, the more grunt in the sound.

The **feedback** switch lets you add a crunchy top end to the sound.

The **Brickwall** soft-clipping limiter is provided to keep the output level under control.



fig1 - Oligarc Drive

■ OLIGARC PHASER

You haven't heard a plugin phaser like this before. More than an emulation, this is an imagining of what an analog phaser *should* sound like, with a unprecedented level of control.

In mono mode (**mon**), the phased signal is mixed equally back into both input channels; in stereo mode (**str**), the left and right channels are processed out of phase for a huge amount of stereo movement.

The **Level** knob determines the balance between the dry and the phased sound. Set to half way for classic 'swirling your brain' cancellation sounds, or near full to accentuate the frequency peak effects.

The frequencies are swept with a Low Frequency Oscillator. The depth of sweep is set with the **Depth** knob, and its rate is set with, yes you guessed it, the **Rate** knob. These can both be set to zero so you can experiment with Oligarc Phaser's incredible capacity for static phase and frequency effects.

Fr.1, Fr.2, Fr.3 - The phaser has three resonant frequencies, which can be individually tuned to achieve an amazing versatility of sound effects. The frequency set with one knob will affect the sound of the others in an interactive way, and their order makes a difference too. Experimentation will yield rewards!

The **Feedback** knob lets you control how much of the phased output is fed back to the input, to add anything from a bit of subtle ring to full screaming bedlam. A final **Brickwall** limiter is provided to protect the unwary.



fig2 - Oligarc Phaser

WARNING - The feedback control goes all the way into self-oscillation, and that's for all 3 frequencies. If you're fond of your ears / speakers / neighbors.... go gently, okay?

■ OLIGARC CHORUS

You haven't heard a chorus plugin like this before either, tailored to give maximum potential lushness with the minimum of distracting cyclic repetition effects.

As with the phaser, in mono mode (**mon**), the chorus signal is mixed equally back into both input channels; in stereo mode (**str**), the left and right channels are processed out of time-domain phase, which creates stereo movement, though the stereo movement is less seismic than with the phaser.

A Low Frequency Oscillator sweeps the delay line with variable **Rate** and **Depth**. At the highest sweep rate settings, you will hear some doppler pitch distortion, which can be used as a creative effect in its own right.

The **Level** knob controls the amount of effect applied, but even with the level at zero the audio will be colored, in a good way. Like a high-character analog effect, this chorus is bypassed only when the whole unit is turned off.

The **Delay** knob sets the central delay time around which the sweeps will occur. At lower delay settings, the chorus has a more flanging effect. At higher delay settings, the chorus sound is deeper. The **Spread** knob causes multiple delays to be distributed around the delay time for a thicker sound.

As with the Drive and Phaser, an optional **Brickwall** soft-clip limiter is provided at the end of the signal chain.



fig3 - Oligarc Chorus



fig4 - Oligarc

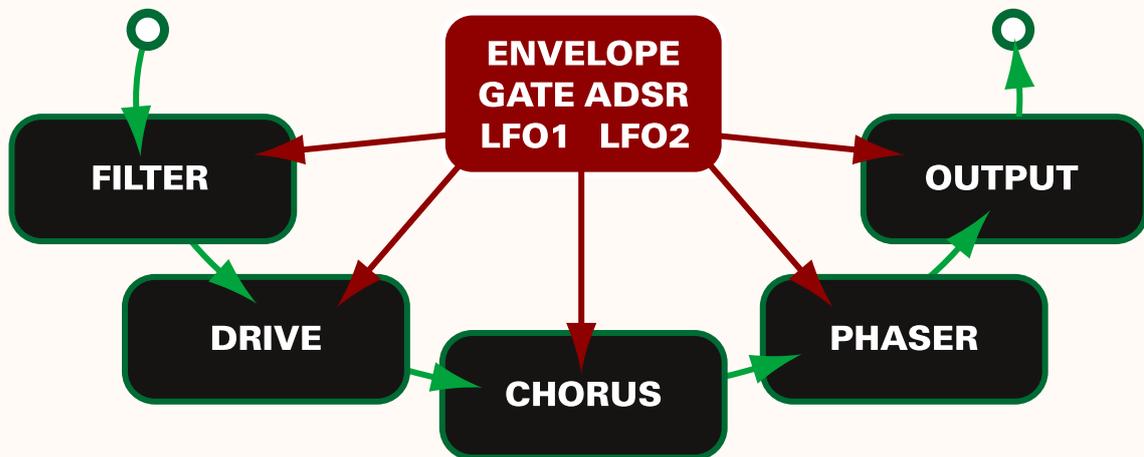
Okay, so you've met the pedals. By now you're probably thinking "*what would be great is if these incredible sound shaping tools were combined with the non-linear ladder filter from the Olga synth and put under the simultaneous and detailed control of independent, variable shape, tempo-sync'able LFOs, an envelope follower and a synth style ADSR that was triggered by a gate, all reacting to the source input level or that of a sidechain signal!*"

Oh, you aren't? Well we did.

The full Oligarc is your route to some truly exciting special effects, but more importantly a dizzying range of creative and corrective audio functions, including compression, gating, transient shaping, filtering, resonating, wah-wah and touch-phase. Plus the traditional analog-style Chorus, Phaser and 'attack of the martian death fleet' sounds.

Signal Flow

Audio entering Oligarc is adjusted in level using the **Trim** knob, and then sent to two paths: the control path (where its level is used to generate modulation signals) and the audio path. The signal flows through the audio path in this order : Filter, Drive, Chorus, Phaser, Output.



Audio Path

FILTER - This is the analog ladder filter from our celebrated Olga synthesizer, featuring nonlinearity and self-oscillating resonance. Three filter shapes are selectable: low pass, wide band pass, and narrow band pass. The cutoff knob adjusts where the low pass starts to roll off, or the center of the band pass shape. The resonance knob tightly boosts the gain at the cutoff frequency. Finally, a high pass filter lets you focus the output.

DRIVE - This is the drive circuit from Oligarc Drive. (p2)

CHORUS - This is the Chorus circuit from Oligarc Chorus. (p4)

PHASER - This is the Phaser circuit from Oligarc Phaser. (p3)

OUTPUT - For adjusting the final audio output level from Oligarc. A soft-clipping limiter is applied with a brickwall limit at -0.1 dB, and will add additional saturation to the sound. If you see that the limiter is active and you don't want the additional saturation, turn down the output level.

fig5 - Oligarc's signal flow

WARNING - Be careful! As with a true analog ladder filter, at high resonance settings the filter will take on a life of its own, leaving only the built-in brickwall limiter standing between you and total audio destruction.

Control Path

The Control Path sends the audio's level to the Envelope Follower and Gate-Triggered ADSR to be converted to control signals. These, along with two Low Frequency Oscillators (LF01 & LF02), are used to vary settings within Oligarc, via the power of the all-important Modulation Knobs.

■ MODULATION SOURCES

Envelope Follower

The Envelope Follower is an element you'll be familiar with from a touch-wah or the detector circuit of a compressor. The input level is tracked and output as a control signal.

Take a look at Oligarc's inner VU meter - this is where Envelope Follower activity can be observed. The illuminated needle shows how the Envelope Follower is responding to the signal; use the **Speed** knob to alter the ballistics. At faster speeds, the control signal will track even a percussive input closely; at slower speeds, the control signal will build up slowly as the overall sound level increases, allowing you to track the macro dynamics of a guitar track, for example.

You'll often find that there's a useful range of input levels, and you can set the Envelope Follower to tailor its output to this range using the **Floor** and **Ceiling** knobs, represented on the inner VU meter by the red and yellow needles respectively. The Envelope Follower will then scale its control signal output between zero (at or below the floor level) and full (at or above the ceiling level.)

NOTE : The input signal to the Envelope follower can be switched from the audio signal to the sidechain input using the Sidechain switch. (p9)

Gate-Triggered ADSR Envelope

If you have experience with traditional synthesizers, you will know what an ADSR is; it is the means by which you determine how the volume (for example)

of a note changes over the course of the note, in response to note-on and note-off signals from the keyboard. To use an ADSR as a modulation source in Oligarc (where we don't have note-ons and note-offs, we're reacting to signal level) we trigger it with the opening and closing of a Gate.

Take a look at Oligarc's outer VU meter - this is where the levels used by the gate are shown, with the illuminated needle showing the input level. You set the level at which the gate opens with the **Threshold** knob (whose level is shown with the green needle) and if you wish the gate to close at a lower level you can set this offset using the **Hysteresis** knob (whose level is shown with the red needle).

NOTE : The input signal to the Gate Triggered ADSR can be switched from the audio signal to the sidechain input using the Sidechain switch. (p9)

With low frequency sounds Oligarc's gate is accurate enough to be opened and closed within each cycle of the waveform, which is an interesting effect but will probably not be what you want! To help you out on these occasions, we have provided the Hold knob, which sets a minimum time the gate must wait before it closes. Use the traffic light LEDs to tell you when the gate is opening and closing as you want it to:

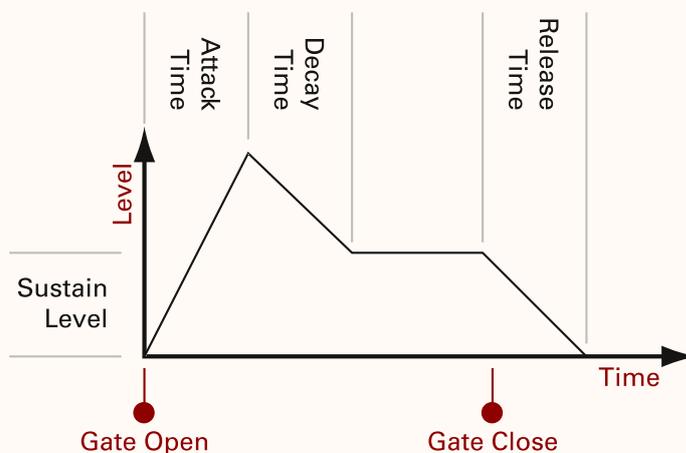
- Green light - the gate is open
- Yellow light - the gate is open, but holding, and will close if the input signal is below the hysteresis level when the hold time expires
- Red light - the gate is closed

Okay, you're now half-way through the workings of the Gate Triggered ADSR. (Stick with me, it'll get interesting soon. Promise.) We have an opening and closing gate; let's use those signals to do some triggering.

At the moment the gate opens, the control signal is zero but will start to rise to full over a time period set with the **A** (attack) slider. Once it has reached full, it will then fall to the sustain level over a time period set with the **D** (decay) slider.

TIP - The outer VU meter's illuminated needle will most likely be behaving a little differently to that on the inner VU, because it isn't affected by the Envelope Follower's speed knob.

fig4 - Phases of the Gate-Triggered ADSR



This sustain level is set with the **S** (er... sustain) slider and the control signal will remain at this level. If at any time during the A, D or S stages the gate closes, the control signal will fall back to zero over a time period set with the **R** (release) slider.

Sidechain Switch

The audio input used by the Envelope Follower and the Gate-Triggered ADSR can be toggled between the primary stereo input (channels 1 and 2) and a sidechain stereo input (channels 3 and 4) using the **Sidechain** switch. The primary stereo input pair is always what is processed and output, regardless of whether the primary or the sidechain stereo input is used in the control path.

LFOs

Oligarc has two independent (but functionally identical) Low Frequency Oscillators (LFOs) to be used as modulation sources. These are unaffected by the input level, they simply provide a cyclic control signal at a speed set with the **Rate** knob.

You can choose to make this speed synchronised to the tempo of your project, using the **Sync** switch, in which case the Rate knob will select between a range of tempo sub-divisions.

The shape of each LFO can be chosen using the **Shape** spinner between sine, triangular, nonlinear, saw, and square. (The nonlinear LFO shape is an emulation of analog circuitry found in classic phaser and chorus pedals.)

■ MODULATION KNOBS

The Modulation Knobs are the key to Oligarc's flexibility. This is why they are shaped somewhat like a keyhole.* Those knobs that have a Modulation Knob attached can have your choice of Modulation Source (Envelope Follower, Gate-Triggered ADSR, LFO1 or LFO2) used to vary their setting. This is how it's done:

* Cue half-hearted applause.

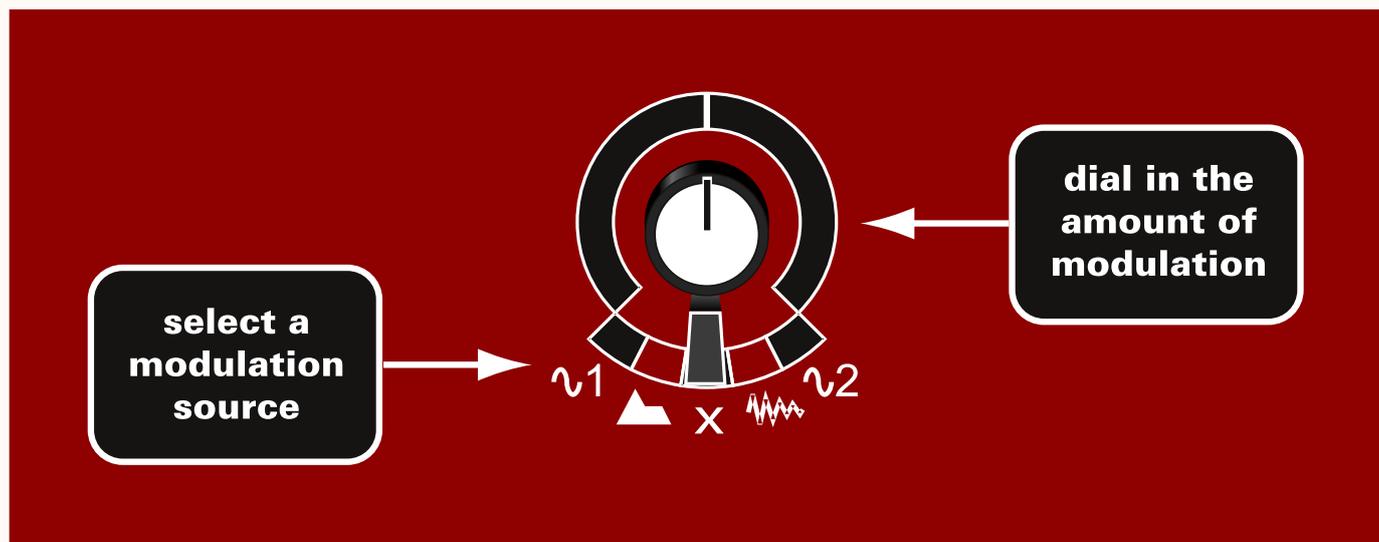


fig5 - The Modulation Knob

When the modulation source is set to X (none), or the amount is set to none (straight up), there will be no modulation. Select a source and dial in a positive (clockwise) amount and the control signal from the modulation source will be added to the target knob's value. Dial in a negative (counter-clockwise) amount and the complement of the control signal will be added to the target knob's value. For example, a closed gate will add the full amount to the target knob, and an open gate at the peak of the attack will add nothing to the target knob..

Holding Oligarc's Motors button (p11) will show you what the result of the modulation is in real time.

When the modulation source is an LFO, a negative modulation amount is equivalent to reversing the phase on the LFO.

The Motors Button

Under the Oligarc name you'll find the **Motors** button. If at any time you want to see how your settings of the Modulation Knobs are affecting the target knobs, hold down this button and all active modulations will be shown in real time as 'motorized' deflections of the target knobs.

■ ***USAGE EXAMPLES***

Oligarc is an ideal experimenter's tool, and we're sure that in no time you'll be making some seriously far-out noises, and we applaud you for doing so. Go nuts! However, there are also a vast range of subtle and/or constructive uses for Oligarc that we're sure you'll appreciate to. Here are a few rough guides:

Dynamics : The output level has a modulation controller for dynamics control. Select the envelope follower as your modulation source and dial in a negative amount of modulation for compression effects, or a positive amount of modulation for expander effects. Try simultaneously using the same sources, in moderation, with the **Drive**, for character effects. Flip your source to the ADSR, set A & D at zero and sustain at full - you have a gate, with the R slider controlling release. Now, drop the sustain to, say half, and start working the A & D sliders for some transient shaping. While you're here, try using an LFO as the modulation source, for tremolo.

Chorus : Traditional chorus effects are achieved by varying the delay time with an LFO set to triangle or non-linear shape. Do the same to all 3 frequencies of the **Phaser** for traditional sounds, but then try sending a different LFO, or the same one but with inverse modulation, to just one of the frequencies. Use the envelope follower as the source for touch-phase effects.

Touch-wah effects can be achieved by setting the **Filter** to a band-pass and modulating cutoff with the envelope follower. Use the low-pass with some resonance, modulated by the ADSR, to add detail to dull bass lines.

By judicious use of the **Sidechain** function you can make all these great effects respond to the level of *other* audio within your mix, and way beyond

simple ducking - Filter some top end off the guitars whenever the singer sings. Push up the chorus on synths when exposed in quiet sections. Add life and movement to bland sounds by envelope following the drum buss with a phaser. That currently popular trick of making the whole track almost flinch from a four-to-the-floor kickdrum? Easy; Oligarc on a master group, set the ADSR to negatively modulate the output level and route the kickdrum channel into the sidechain, tweak to taste.

Of course, since Oligarc allows you to have all sections active at once, we encourage you to try using the same source, in moderate amounts, on multiple target knobs for compound effects. Try routing the same source positively to one control (perhaps a **Wet**) and negatively to another, for some dynamic or tempo-sync'd sound swapping.



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Design by White Tie

Translation : mike холодов & алех стоне

Oligarc beta android : Olaf Riepen

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If you have any support needs, or questions on usage or anything else regarding this plugin, please visit the forums at www.stillwellaudio.com