

Industry
Mono-synth
Manual

© ConcreteFX 2003

Introduction

Overview

Industry is a four oscillators monosynth VST plugin for the PC, with built-in chorus, delay and distortion effects.

Installing Industry and IndustryDemo

Copy "Industry.dll" or "IndustryDemo.dll" into your VST plugin directory. The VST host software should then automatically detect it. Industry should be shown as a VST synthesiser.

Using dials and sliders

For sliders, using the left mouse button sets the position of the slider, clicking with the right mouse button on the left hand side of a slider decreases the position of the slider by a small amount and clicking with the right mouse button on the right hand side of a slider increase the position of the slider by a small amount.

For dials, using the left mouse button sets the position of the dial. Clicking with the right mouse button on the top part the dial decreases the position of the dial by a small amount, clicking with the right mouse button on the bottom part of the dial slider increase the position of the dial by a small amount and clicking on the centre of dial reset the dial to zero.

For selection boxes, clicking on the boxes brings up selection menu.

Controls

Oscillators



This set of controls allows you to control the properties of each oscillator.

Type –allows you to select the oscillator's waveform, the available waves are

Sine	Sine	SmSaw	Smoothed saw tooth
Tri	Triangle	Saw+Sq	Saw tooth + square
Saw	Saw tooth	Thin Square	1/10 square on
RsaW	Reverse saw tooth	1/2 Saw	Half saw then zero
Square	Square	Organ	Organ like sound
4Step Up	4 steps upwards	Noise	Random noise
4Step Dw	4 steps downward	Vox	Vocal sound
Inv	Inverse Sine	Bell	Bell-like sound

Add1	Sine + 1 st overtone	SmSquare	Smoothed square
Add2	Add1+ 2 nd overtone	Noise2	Pitched noise

Fm Source –allows you to select which oscillator is used as the FM modulator

Oct, Semi and Fine – tuning of the oscillator

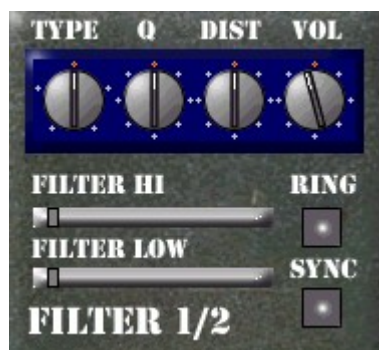
Volume – volume of oscillator, the Vol1&2 envelope controls the volume of oscillators 1 & 2 and the Vol3&4 envelope controls the volume of oscillators 3 & 4

PWM – pulse width modulation applied to oscillator, from, 0 to 100% where 0% means no effect is applied and 100% means full pulse width modulation. For square wave PWM controls how much of the square wave is positive and how much it is negative, for high levels of PWM this produces ‘thinner’ sounds The PWM LFO controls how the pulse width modulation changes over time

FM – amount of frequency modulation applied to oscillator, from 0% to 100%. The FM1&2 and FM3&4 envelopes controls the level of FM used by oscillators 1 & 2 and oscillators 3 & 4. The following is an example of using FM

- 1) Set FM Source for Osc 1 to Osc 2 > FM
- 2) Set Osc 2 volume to zero
- 3) Set FM amount to 50%
- 4) Set Set Osc1 to octave 0 and Osc 2 to octave 1 and 9 semitones
- 5) Alter FM1&2 envelope to a downwards envelope and Volume1&2 to a similar downward envelope
- 6) This creates an sound where Osc 1 is frequency modulated by Osc 2, and the above sound created is a bell like sound

Filter



The signal from oscillators 1 & 2 is then passed to Filter 1 / 2 and the signal for oscillators 3 & 4 is passed to Filter 3 / 4.

Filter Type - type of filter, the available types are:

Off	Filter off
Low	24db Moog lowpass filter
High	24db Moog highpass filter
BP	24db Moog bandpass filter
BR	24db Moog bandreject filter

Frequency –controls the frequency of the filter, from 60hz to 15Khz. The Filt1&2 envelope controls the frequency of Filter 1/2 and Filt3&4 envelope controls the frequency of Filter 3/4

Q –controls the resonance of the filter, resonance controls the volume of frequencies around the cut-off frequency for the low / high pass filter and the size of the band for the band pass/reject filter.

Volume –controls the volume of the filter

Dist – controls how much distortion is applied to the signal before it filtered, high levels of the distortion causes the signal to become louder and clipped.

Also the controls for altering how the two oscillators are combined. are shown here

Ring – turns the ring modulation on/off, ring modulation means the signal of the two oscillators are multiplied together rather than added together

Sync – this turns the syncing on/off,. Syncing means the second oscillator is synced to the first one, so when the first oscillator reaches the start of a new cycle the second oscillator is set to the start of it's cycle.

Envelope



Envelope controls how some controls change over time. All the envelopes are composed of 16 stages. Clicking on the envelope screen allows you to select an envelope points (this is shown in orange) and then moving the mouse allows you to change the position of this point

Envelope Length - controls the length of the selected envelope, this length is measured in quarter beats where the length of a quarter beat is dependant of the tempo selected, this can be used to sync the envelope to other sounds

Type - controls the current envelope, they are

Vol 1&2 – volume of oscillators 1 and 2

Vol 3&4 – volume of oscillators 3 and 4

FM 1&2 – FM for oscillators 1 and 2

FM 3&4 – FM for oscillators 3 and 4

Filt 1&2 – filter frequency of oscillators 1 and 2

Filt 3&4 – filter frequency of oscillators 3 and 4

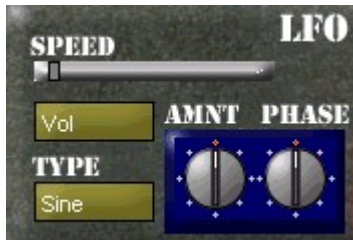
Loop position - controls the loop position of the current envelope. For each envelope the envelope is run through till it reaches the last position, it then jumps back to the loop position, runs through to the last position and then jumps back to the loop position and so on. If the loop position is set to Pos 16 then the envelope run through till it reaches the last position and then stays at this value.

Envelope Commands – these commands changes the current envelope

Copy	Copies envelope
Paste	Pastes envelope
Clear	Clears envelope
Reverse	Reverses envelope
Full	Sets envelope to full amount

Span	Spans the envelope points equally horizontally
Current	Sets the envelope points vertical position to the current selected point
Smooth	Smooths the envelope
Up	Changes the envelope to a smoothly increasing envelope
Down	Changes the envelope to a smoothly decreasing envelope

LFO



LFO controls the low frequency modulation which are used to change properties values overtime

Type - this controls the current LFO, they are

- Volume – main volume LFO
- Pitch – pitch LFO, the pitch range is also controlled by the pitch range control
- Pan – pan LFO, controls how much the sound is panned to the left or the right channels
- PWM – PWM LFO, controls the pulse width modulation
- Chorus – Chorus length LFO
- Fatness – a small pitch LFO which is applied to osc 1 and 3, so detuning the sound and increasing the fatness of the sound

Type – LFO waveform, these are the same waveforms as the oscillators

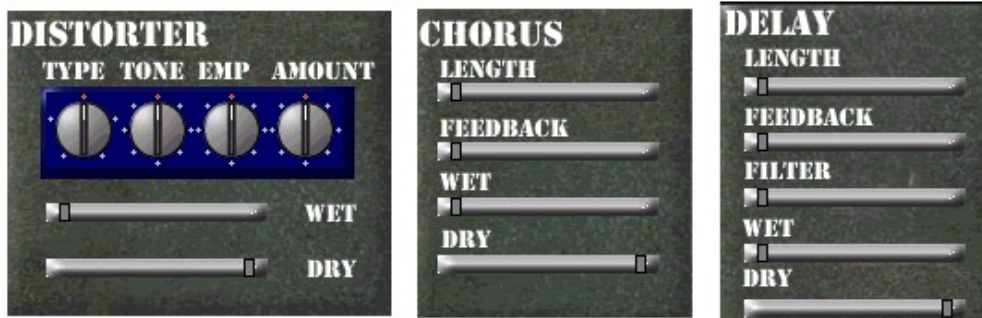
Speed – speed of LFO

Amnt - maximum amount of LFO

Phase – phase of the LFO

Effects

Industry uses three effects; these are applied to the final sound after the filtering and shaping of the sound. The effects are applied in the following order, distortion, chorusing and then delaying.



Distorter distorts the incoming sound, it has the following properties

Type – type of distortion, they available ones are

Low Limit – boosts the sound, limits it and then low pass filter it

Band Limit – boosts the sound, limits it and then band pass filter it

Wave Shape – wave shapes the sound and then band pass filter it

Rectifier – this changes the negative values of the signal, from 0% where it is not altered, to 50% where any negative value are set to zero, to 100% where the negative signals are made positive. After being rectified the sound is band pass filtered.

Fuzz – applies a 'fuzz' to the sound and then band pass filters it

Decimator – reduces the bit width of the sound, from 0% 16 bits to 100% 1 bit, and then low pass filters it

RingMod – this ring modulates the sound with a sine wave with a frequency dependant on the incoming sound. At 50% the ring modulation frequency is the same as the sound, 0% means the ring modulation frequency is two octaves below the sound and 100% means the ring modulation frequency is two octaves above the sound. After being ring modulated the signal is then low pass filtered

Tone – frequency of the filter

Emp – resonance of the filter

Amount – level of effect, this is dependant on the type of the distortion

Wet – wet volume (the distorted signal)

Dry – dry volume (the original signal)

Chorus adds a chorus/flanger effect to the sound

Length – controls the maximum length of the choruses delay in millisecond. The chorus LFO changes the chorus length. Short lengths of 1-2 milliseconds create flanger effects and longer lengths of 20-30 milliseconds create chorus effects.

Feedback – chorus feedback

Wet – wet volume (the chorused signal)

Dry – dry volume (the original signal)

Delay adds an echo effect to the sound

Length – controls the length of the delay in quarter beats

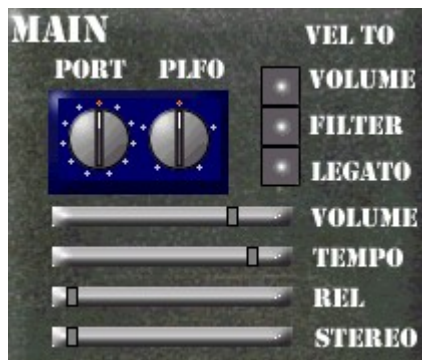
Feedback –delay feedback

Filter –controls the delay's low pass filter's frequency. By setting to lower values this creates more reverbish/dub type effects

Wet – wet volume (the delayed signal)

Dry – dry volume (the original signal)

Main



This region is used to change Industry's global controls

Port – controls the portamento used, i.e. how quickly the sound goes from one note to another

PLFO – controls the pitch range used for the pitch LFO

Vel to Volume – controls if the velocity of a mdii note is used to change the volume of the sound

Vel to Filter – controls if the velocity of a mdii note is used to change the filter frequency of the sound

Legato – turns the legato off/on, when legato is off when a new note is played then the envelopes are reset. When it is on if a note is still playing and another note is played then the sound changes to the pitch of the new note without the envelopes being reset.

Volume – Global volume

Tempo – tempo used by Industry to set the length of the envelopes and LFO. If tempo is set to it's minimum value then the tempo is auto synch to the VST host's tempo

Rel – used to change the release of the note, that is the time the note's volume takes to decline to zero

Stereo – stereo widening effects, this is created by slightly delayed one stereo signal in comparison to the other

Midi Automation

Midi Control Code	Parameter
Modulation (1)	Speed of LFO's
Portamento Time (5)	Portamento time
Volume (7)	Volume
Pan (10)	Pan Position from 0 extreme left to 127 extreme right
Variation (70)	Filter Frequency
Resonance (71)	Filter Resonance
87	Osc 1 volume
88	Osc 2 volume
89	Osc 3 volume
90	Osc 4 volume
Reverb level (91)	Delay level
Chorus level (93)	Chorus level
Effect Level (95)	Distortion level
102	Osc 1 pitch, - 63 no change, 62 one semi-tone down , 64 one semi-tone up
103	Osc 2 pitch, - 63 no change, 62 one semi-tone down , 64 one semi-tone up
104	Osc 3 pitch, - 63 no change, 62 one semi-tone down , 64 one semi-tone up
105	Osc 4 pitch, - 63 no change, 62 one semi-tone down , 64 one semi-tone up
106	FM amount
107	Resets all envelopes and LFOs
108	Resets envelopes
109	Resets LFOs

