dvca _travelers guide _for fine tuning your spacecraft

2 vcas	4 hp	10×+ gain on the curve side

› then noon = 12 o'clock tags = the panel drawing

two voltage-controlled amplifiers in 4 hp · after mutable instruments veils · volume knob, envelope vca, mixer

01 what it is

dv_01

two vcas	two identical voltage-controlled amplifiers in 4 hp · after the original mutable instruments veils
a vca	a volume knob that a voltage can turn · no voltage, no knob: silence
dc-coupled	passes audio or cv, so it scales modulation too
mixer	with nothing in `out 1`, `out 2` carries both channels

02 as a volume knob

dv_02 · the safe setup · fig.01

patch	sound into `in 1` (middle row) · `out 1` (bottom row) to the mixer
leave	`cv 1` (top row) empty · it then sits at a steady +8 V, so the knob alone opens the vca
`c1` `[ curve ]`	all the way to the straight-line icon · even, predictable volume
`1` `[ gain 1 ]`	now the volume · fully left = silent
unity	about 1 o'clock = the level that went in · further right adds up to ~1.6×
distortion?	curve turned toward the curved icon · the top of the knob then goes past 10× and clips · back to the line

__fig.10 : the gain knob

as a volume knob



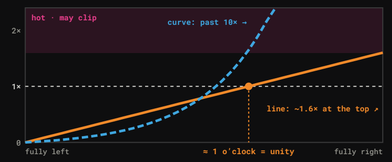
10 first flight

dv_10 · ten seconds to sound

1. sound into `in 1` (middle row)
2. `out 1` (bottom row) to your mixer
3. nothing in `cv 1` (top row)
4. `c1` `[ curve ]` to the straight line
5. raise `1` `[ gain 1 ]` · about 1 o'clock = unity
6. then try an envelope into `cv 1` for a pluck

__fig.01 : the safe zone

gain knob · cv empty



shape, not measured · veils: empty cv = +8 V, +5 V at full gain = 1×

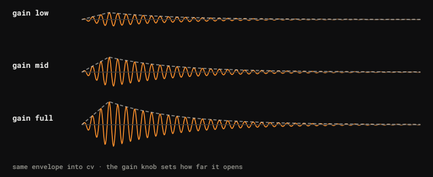
03 what the knobs do

dv_03 · big + small

`1` `[ gain ]` `2`	nothing in cv: a plain volume knob
cv patched	it becomes the cv amount · how far the cv can open the vca · this is the attenuator
`c1` `[ curve ]` `c2`	not an attenuator · it bends the response, line to curve
› `[ line ]`	linear · even steps · volume, mixing, scaling cv
› `[ curve ]`	exponential · snappy, natural fades from envelopes · lots of gain at the top

__fig.05 : cv × gain

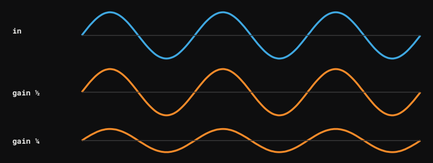
gain = cv amount



same envelope into cv · the gain knob sets how far it opens

__fig.07 : attenuator

scaling cv



curve on line · cv empty · same shape, smaller · dc-coupled so slow cv works too

04 the jacks

dv_04 · three rows per channel

`cv 1` `cv 2`	top row (circled 1 · 2) · gain cv · +5 V with the knob full = unity · above +5 V may distort
› empty	held at +8 V, so the knob alone sets the gain
`in 1` `in 2`	middle row (labelled in 1 · in 2) · audio or cv
`out 1` `out 2`	bottom row (white 1 · 2 tags)
how we know	oscillator in the top row: silence · in the middle row: sound

__fig.06 : which jack

top · middle · bottom



test: an oscillator in the top row = silence · in the middle row = sound

05 mixing

dv_05 · fig.02

out 1 empty	channel 1 joins channel 2 · `out 2` = 1 + 2
out 1 patched	two separate vcas
more dvcas	rear IN / OUT pins chain modules into one bigger mixer · a jumper for neighbours, a female-female dupont cable for spaced ones

__fig.02 : the output chain

out 1 empty = mixer



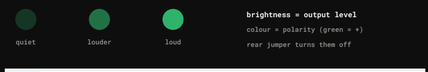
07 the lights

dv_07 · one per channel

brightness	signal level at the output
colour	polarity · green = positive (veils)
too bright?	a jumper on the back turns them off

__fig.09 : the lights

one per channel



08 five patches

dv_08 · curve · cv

volume knob — line · no cv
section 02 · gain 1 around 1 o'clock = unity

pluck / envelope vca — curve · env
osc into in · envelope into cv · gain = how far the envelope opens it · curve side for snappier decays

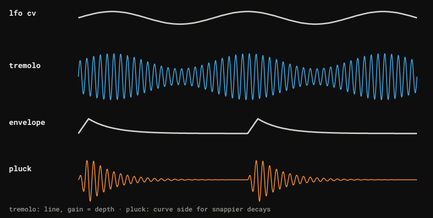
tremolo — line · lfo
lfo into cv · gain sets the depth · lower the gain if the peaks crunch

two-into-one mixer — line · no cv
sources into in 1 + in 2 · out 1 empty · out 2 = the mix · gains = levels

cv attenuator — line · no cv
lfo or envelope into in · gain scales it · out = smaller copy, same shape

__fig.08 : tremolo · pluck

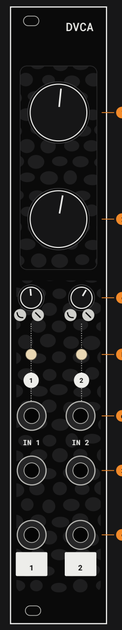
cv in, sound out



tremolo: line, gain = depth · pluck: curve side for snappier decays

__fig.03 : the panel

numbers match the legend



- `1` **gain 1** · volume · cv amount when patched
- `2` **gain 2** · same for channel 2
- `c` **curve** · straight line = even · curve = hot
- `LED` **lights** · output level · polarity
- `cv` **cv 1 / 2** · top row · +8 V when empty
- `in` **in 1 / 2** · middle row · audio or cv
- `out` **out 1 / 2** · bottom row · 1 empty → 2 mix…

09 specs

dv_09

cv in	0 – 5 V for the full range · empty = +8 V
signal in	dc-coupled · audio or cv
size	4 hp · 22 mm deep
power	17 mA +12 V · 17 mA –12 V
design	mutable instruments veils by émilie gillet · cc-by-sa