Making Sound Machines — DivSkip

- Manual PDF

Manual PDF

WMD Skorpion — Creative Patch Ideas and Pairings

Skorpion is much more than a wavefolder. Reading the manual closely, it behaves like a **threshold-analyzed waveform reanimation system** with:

- 8 comparator thresholds
- a vector core that slews toward a target
- selectable target behavior
- per-segment target sequencing
- feedback-based slope shaping
- stereo widening/delay
- a surprisingly deep internal modulation system
- lots of derived outputs for self-patching and ecosystem integration

That means it sits somewhere between:

- wavefolder
- comparator bank
- segmented function generator
- waveshaper
- stereo processor
- control voltage extractor
- weird oscillator core companion

So the most interesting use of Skorpion is often **not** “audio in, more harmonics out,” but rather: - **using the thresholds as a control structure** - **using the TRGTs as a sequence engine** - **using the auxiliary outputs as modulation infrastructure** - **using external modules to animate target, halt, fold, and shape in coordinated ways**

Best companion module types

These are the module categories that pair especially well with Skorpion:

1. **Clean analog VCOs**
2. Sine/triangle sources let you hear the threshold behavior clearly.
3. Examples: Intellijel Dixie II+, Joranalogue Generate 3, Doepfer A-110-1, AJH VCOs
4. **Complex or unstable sound sources**
5. Wavetables, drum voices, feedback oscillators, or physical modeling voices create rich threshold crossing behavior.
6. Examples: Noise Engineering voices, Make Noise DPO, Instruō Cs-L, Mutable Plaits, SSF Zephyr
7. **Function generators / envelopes**
8. Great for animating FOLD, SHIFT, TARGET, HALT, or OUTPUT.
9. Examples: Make Noise Maths, Joranalogue Contour 1, Frap Tools Falistri, Befaco Rampage
10. **Matrix mixers / CV mixers / attenuverters**
11. Essential because Skorpion is a self-modulation playground.
12. Examples: Doepfer A-138m, Happy Nerding 3xMIA, Frap Tools 321, Mutable Shades
13. **Sequential switches / comparators / logic**

14. Excellent for exploiting G(IN>0), ±G(DIR), COUNT, and DAC outputs.
15. Examples: Doepfer A-151, Joranalogue Compare 2, Noise Engineering Vice Virga, Klavis Two Bits
16. **VCAs**
17. Needed to dynamically control feedback and self-patching intensity.
18. Examples: Intellijel Quad VCA, Mutable Veils, Xaoc Tallin, ALM Tangle Quartet
19. **Filters / resonators**
20. Because Skorpion can get aggressive quickly; filtering after or before it is powerful.
21. Examples: Xaoc Belgrad, Bastl Ikarie, Rossum Linnaeus, QPAS, Doepfer SEM filter
22. **Delays / reverbs / granular modules**
23. Since Skorpion already creates complex transient-rich material, time-based modules make it explode into atmosphere.
24. Examples: Mimeophon, Magneto, Nautilus, Desmodus Versio, Arbhar, Beads
25. **Oscilloscope / tuner / analyzer**
26. Seriously useful here. This module's behavior is easier to understand visually.
27. Examples: Mordax Data, O'Tool+

How to think about Skorpion musically

A useful way to approach it:

- **FOLD** = how hard the signal engages the threshold structure
- **SHIFT** = asymmetry / bias / pseudo-frequency-shift-like motion
- **SLOPE** = the “speed” and harmonic density of the output core
- **TARGET** = what the vector core is trying to become
- **SHAPE** = nonlinear behavior / feedback law
- **THLD sliders** = where folding events occur
- **TRGT sliders** = per-segment destination/slope sequence
- **HALT** = freeze motion for rhythmic or stepped artifacts
- **OUTPUT** = dry/wet/wide stereo animator

This makes Skorpion ideal for: - animated timbral sequencing - stereo sound design - pseudo-resynthesis - patch-programmable distortion - CV generation from audio

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Creative patch ideas

1. Precision animated wavefolder voice

Pair with: clean VCO, envelope, VCA, filter

Patch

- VCO sine or triangle → **IN**
- 1V/OCT sequence → VCO and **Skorpion 1V/OCT**
- Envelope → VCA for amplitude
- Slow LFO → **SHIFT**
- Another envelope or velocity CV → **FOLD**
- OUT L/R → stereo mixer

Why it works

The manual notes that **1V/OCT controls slope and is necessary for equal timbre across notes**, so Skorpion can track musically more consistently than many wavefolders. This makes it unusually good as part of a melodic voice rather than just an effect.

Extra move

- Set **EQUALIZE THLDs ON** for more classic wavefolder behavior.
- Then switch it off and manually spread thresholds for more formant-like uneven spectra.

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2. Use it as a “comparator sequenced timbre engine”

Pair with: any oscillator, clocked modulation, quantizer optionally

Patch

- Put **TARGET** to **SLIDERs**
- Hold spring toggle left and set the **TRGTs** to a pattern of voltages
- Feed a harmonically changing oscillator or chord mixture into **IN**
- Use **TARGET ORDER**:
- **SEQ** for count-based target stepping
- **TIED** for “most recently crossed threshold” behavior

Why it works

Every threshold crossing can select or influence a different target. So the incoming waveform isn’t just being folded — it is effectively **navigating a table of destination voltages**. That’s way beyond standard wavefolding.

Pairing suggestion

- Put a **quantizer** after the **TRGTs output** and use it elsewhere in your patch.
- Or use **TRGTs output** to modulate another oscillator's FM index or filter cutoff.

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3. Audio-rate CV extractor / control bus generator

Pair with: logic, sequential switch, percussion modules, LPGs

Skorpion's lower jack row is gold: - **ABS(IN)** - **G(IN>0)** - **TRGTs** - **DIFF** - **±G(DIR)** - **COUNT** - **DAC** - **DELAY**

Patch concept

Use one audio source into Skorpion, but use the aux outputs to drive the rest of your rack.

Example

- Drum loop or percussion oscillator → **IN**
- **G(IN>0)** → trigger percussion accents or logic
- **COUNT** → filter cutoff staircase
- **DAC** → oscillator FM amount
- **DIFF** → wavefolder amount on a second voice
- **±G(DIR)** → panner or bipolar CV destination
- **ABS(IN)** → VCA CV or LPG strike level

Why it works

Skorpion effectively turns one sound into a **family of musically related control signals**. This is amazing for coherent patches where everything "breathes" with one source.

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4. Stereo psychoacoustic lead processor

Pair with: mono synth voice, stereo mixer, reverb

Patch

- Mono lead voice → **IN**
- Set OUTPUT around noon and above
- Toggle **OUTPUT SWITCH** between:
- **DC** for raw width
- **FILTERS** for centered low end and widened highs
- OUT L/R → stereo reverb

Why it works

The manual explains the **WIDE** section introduces a very short delay plus optional mid/side filtering. That makes Skorpion an excellent **stereoizer** even before getting extreme with fold/shaping.

Nice companion modules

- Stereo reverb: Desmodus Versio, Erbe-Verb, FX Aid Pro
- Stereo mixer: Worng, Toppobrillo, Cosmotronic mixer systems

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5. Metallic percussion from halted segments

Pair with: trigger source, envelope generator, noise or sine source

Patch

- Sine or short-decay sound → **IN**
- Set **TARGET** to **SLIDERs**
- Set some TRGT sliders fully down to 0
- Turn **HALT IF TARG=0** on
- Use a sequencer or random CV to animate thresholds or target mod

- Optionally use **SYNC HARD**

Why it works

The manual states that when a target is 0 and this mode is enabled, the vector core can **halt for just that segment**, creating square/flat regions. This can generate jagged, percussive, digitally fractured tones.

Extra spice

- Patch **±G(DIR)** or **COUNT** into **HALT** through a VCA for intermittent freezing.
- Great with LPGs after Skorpion.

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6. Drum loop destroyer / re-animator

Pair with: sample player, breakbeat source, envelope follower, filterbank

Patch

- Drum loop or hi-hat pattern → **IN**
- **SYNC HARD** on for aggressive resets, or **SOFT** for smoother contour following
- Modulate **FOLD** and **SHIFT** slowly
- Use **DRY IF NO THLDs** on if modulating heavily, so signal remains present
- WIDE output to stereo mixer

Why it works

The manual specifically mentions fast switching from cymbals and handling complex signals well. Skorpion seems excellent on transient-rich audio.

Pairing recommendations

- Any sample player: Squid Salmple, Bitbox, Assimil8or
- Envelope follower before or after to create closed-loop modulation
- Filterbank for spectral emphasis after Skorpion

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7. “Pseudo frequency shifting” motion using SHIFT

Pair with: slow LFO, random source, stereo delays

Patch

- Sustained saw or sine drone → **IN**
- Keep **SHIFT** near noon, modulate slowly with triangle/random
- Moderate **FOLD**
- Experiment with **SHAPE = DIR**, **OUT**, or **DIFF**
- OUTPUT into WIDE region

Why it works

The manual explicitly notes: **slow modulation of SHIFT produces a frequency shift effect**. It’s not true frequency shifting, but it gives spectral drift and asymmetry movement that feels similar.

Great companion modules

- Slow random CV: Triple Sloths, Sapèl, Wogglebug, Marbles
- Stereo delay/reverb after Skorpion for moving cloud textures

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8. Self-modulated chaos patch

Pair with: mixer/attenuverter, VCA, optional limiter

Skorpion invites self-patching.

Patch ideas

- **DIFF → SHAPE CV**
- **COUNT → FOLD CV**
- **DAC → SHIFT CV**
- **DELAY → SHAPE source = DELAY**
- **TRGTs out → TARGET CV**
- **±G(DIR)** → external VCA that controls amount of one of the above

Why it works

The module already exposes internal logic and trajectory-related signals. Feeding them back through attenuation gives evolving, nonlinear behavior that can go from organic to feral.

Important

Use attenuverters or VCAs. Raw self-patching may jump to extremes quickly.

Best helper modules

- Happy Nerding 3xMIA
- Frap Tools 321
- Intellijel Quad VCA
- Doepfer matrix mixer

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9. Segment-by-segment waveshaping with TRGTs as a wavetable

Pair with: VCO, clock divider, sequencer, sample-and-hold

Patch

- Oscillator → **IN**
- **TARGET** toward **SLIDERs**

- Hold left and set a custom 8-step TRGT pattern
- Set **TARGET ORDER** to **SEQ**
- Modulate threshold positions so the active count changes dynamically

Why it works

The TRGT sliders effectively form a **voltage table** that can be addressed by threshold crossings. You can think of this as a kind of analog “wavetable by threshold state.”

Extended version

- Send **TRGTs output** to a precision adder or quantizer
- Use the same sequence to drive pitch-related changes elsewhere, tying timbre and harmony together

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10. Use Skorpion as an oscillator companion, not the main effect

Pair with: thru-zero FM oscillator, sub-oscillator, LPG

Patch

- Main oscillator goes dry to mixer
- Duplicate same oscillator to **Skorpion IN**
- Process only Skorpion path
- Use **OUTPUT** to blend dry/wet/wide
- Tune the processed channel lower in mix and stereo spread it

Why it works

Since Skorpion doesn’t simply amplify the original into folds, it can act like a **parallel synthetic overtone layer**. Blending processed and dry paths creates unusually rich and mix-friendly tones.

Great sources

- TZFM oscillator like Generate 3 or Rubicon 2
- A pure sine carrier is especially strong here

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11. Cross-synthesis using external CLIP input

Pair with: second oscillator, drum voice, speech/sample source

Patch

- Oscillator A → **IN**
- Oscillator B or drum/sample voice → **CLIP**
- Turn **TARGET** toward **CLP**
- Optionally patch modulation into **TRGT MOD**

Why it works

The manual says the input normally goes to CLIP, but you can override it. This lets one signal determine how another signal's target behavior is clipped/overlaid. That's a pretty unusual cross-modulation route.

Good pairing sources

- Spoken word sample into CLIP
- Kick drum into CLIP while a bass tone goes into IN
- Another VCO at a harmonic or inharmonic interval

This can create vocalized, sync-like, or punctuated timbres.

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12. Rhythmic gating and animation from direction outputs

Pair with: logic, VCAs, switches, panners

Patch

- **±G(DIR)** → bipolar CV for panner
- **G(IN>0)** → trigger envelope
- **COUNT** → switch address or logic threshold
- **DAC** → slew limiter input or offset generator

Why it works

Skorpion reveals the **movement state** of the vector core. That means you can synchronize other events to whether its internal waveform is rising/falling, above/below zero, or how many thresholds are currently active.

Result

A whole patch can be rhythmically “played” by Skorpion’s internal motion rather than by clocks alone.

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13. Audio-to-CV articulation extractor

Pair with: envelope follower, LPG, filter, resonator

Patch

- Voice, field recording, or acoustic instrument through preamp → **IN**
- Use:
- **ABS(IN)** as a rough excitation contour
- **G(IN>0)** as polarity-derived gate
- **COUNT** for brightness control
- **DIFF** for resonator excitation
- Send those to other modules while also using OUT L/R as audio

Why it works

Skorpion can derive **structure** from incoming audio, not just transform tone. This makes it useful in hybrid/acoustic modular setups.

Strong companions

- Preamp/external input module
- Resonator: Rings, Sealegs resonant modes, QPAS pinging, 4ms ensembles

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14. Threshold-LFO macro performance patch

Pair with: keyboard controller, gate source, sequencer

The internal macro section is easy to overlook but very powerful.

Patch

- Use the **MACRO ENV** gate from external keyboard or sequencer
- Program:
- threshold LFO amount
- threshold LFO rate
- FOLD/SLOPE/SHIFT/SHAPE macro modulation
- Build a performance patch where each note opens a whole moving timbral ecosystem

Why it works

All LFOs are amplitude-controlled by the macro envelope and **reset on each gate**, so repeated notes can have **consistent animated timbre articulation**. That is very performable.

Musical use

This is ideal for: - animated leads - evolving bass - repeatable IDM percussion - “same note, new motion” phrasing

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15. Patch it with a filter before and after

Pair with: multimode filter(s)

Before Skorpion

Filtering before changes which parts of the source cross thresholds.

After Skorpion

Filtering after sculpts the newly generated harmonics.

Example chain

- VCO → bandpass filter → Skorpion → lowpass filter → stereo FX

Why it works

Because Skorpion responds strongly to waveform geometry, **pre-filtering** is as meaningful as post-filtering.

Especially good

- Bandpass or notch before Skorpion
- LPG or resonant lowpass after it

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16. Use DELAY output as a modulation source

Pair with: VCA, filter FM, panning, phase modulation destination

The manual notes the **DELAY** output is tied to the WIDE portion of the output control and changes delay time/modulation depending on the knob position.

Patch

- Bring OUTPUT above noon so DELAY becomes active
- **DELAY output** → SHAPE CV, filter cutoff, or panner
- Audio out still goes to stereo path

Why it works

This gives you a delayed/modulated copy of Skorpion's motion as a CV/audio source. Very useful for internal "echo modulation."

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17. Make it a weird CV processor for non-audio signals

Pair with: sequencers, stepped CV, envelopes, joystick

You do not have to feed only audio into Skorpion.

Patch ideas

- Envelope or LFO → **IN**
- Use threshold crossings to create staircase, folded, or halted control trajectories
- Output to:
- filter FM
- wavetable position
- panning
- granular position

Why it works

Skorpion's vector core and threshold system can turn simple CV into: - segmented envelopes - staircase hybrids - asymmetrical modulation - direction-aware control signals

This is one of the most underused ways to exploit it.

Specific pairing ideas by module

With Make Noise Maths

- Use channels 2/3 as attenuation for self-patching Skorpion outputs back into CV inputs
- Use Maths envelopes to modulate HALT, SHIFT, and FOLD
- Feed **DIFF** or **COUNT** into Maths for slewed derived CV

With Joranalogue Generate 3

- Very clean source for hearing threshold topology
- Use Generate 3's phase/routing options to feed Skorpion harmonically precise material
- Patch Skorpion **TRGTs** or **DAC** back into Generate 3's FM index or phase modulation

With Mimeophon

- Use Skorpion for primary stereo widening, then Mimeophon for larger spatial extension
- DELAY output can modulate Mimeophon color or zone

With Xaoc Belgrad

- Belgrad before Skorpion for focused band emphasis
- Belgrad after Skorpion to tune the harmonic chaos into vocal resonances

With Mutable Rings / resonator-type modules

- Use **DIFF**, **COUNT**, or **ABS(IN)** to excite/modulate resonator parameters

- Use Skorpion output as exciter audio for metallic, animated resonances

With random modules like Marbles / Sapèl / Wogglebug

- Randomly modulate threshold equalization on/off via jack
- Animate SHIFT and TARGET subtly
- Use stepped randomness on TRGT MOD for spectral jumps

With matrix mixer

Probably one of the best utilities for Skorpion. - Route **COUNT**, **DAC**, **DIFF**, **TRGTs**, and **DELAY** into a matrix mixer - Send blended versions back to **FOLD**, **SHIFT**, **SHAPE**, and **TARGET** - This creates deeply connected feedback ecosystems

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Particularly strong self-patching ideas

Self-patch 1: DIFF into SHAPE

- Set SHAPE source to **DIFF**
- Also patch **DIFF out** externally through attenuation back into **SHAPE CV**
- Result: edgy, spiky, unstable harmonic emphasis

Self-patch 2: COUNT into FOLD

- COUNT is a staircase based on active thresholds
- Feed it gently into FOLD CV
- Result: more threshold activity begets more fold intensity

Self-patch 3: DAC into SHIFT

- Weighted threshold count gives more nuanced asymmetry changes
- Result: continuously morphing asymmetry tied to comparator state

Self-patch 4: DELAY into TRGT MOD

- Great for ghosted, smeared target behavior
- Especially effective in stereo/wide settings

Self-patch 5: G(IN>0) or ±G(DIR) into external switch

- Switch between two modulation sources feeding FOLD or TARGET
- Result: waveform-dependent timbral branching

Modes and switches worth exploiting

EQUALIZE THLDs

This is not just convenience. It is a tonal mode switch.

- **ON**: more classic, orderly, predictable fold intervals
- **OFF**: irregular threshold spacing = speech-like, formant-like, broken spectra
- **CV controlled**: ideal for switching between orderly and unruly states mid-performance

Use a gate sequencer, logic output, or random gate here.

DRY IF NO THLDs

Useful when: - heavily modulating FOLD - processing dynamic material - wanting continuity rather than dropout

This can make Skorpion act more like a morphing timbre processor than a hard-effect box.

SYNC soft vs hard

- **SOFT**: smoother, more “rubbery” and less clicky
- **HARD**: sharper resets, more aggressive and percussive
- **X**: freer motion, often more organic

Good idea: modulate related parameters while manually changing SYNC mode during performance.

TARGET ORDER: SEQ vs TIED

This is one of the most musically consequential switches.

- **SEQ** = active-threshold count selects target
  Feels more like addressable sequence behavior
- **TIED** = most recently crossed threshold selects target
  Feels more event-driven and contour-sensitive

Use: - **SEQ** for repeatable timbral sequences - **TIED** for expressive, waveform-reactive articulation

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Patch recipes by musical goal

For bass

- Sine/triangle in

- 1V/OCT patched
- EQUALIZE THLDs on
- TARGET around 5V or slight CLIP
- mild SHAPE from OUT
- FILTERS mode on output
- low wet/wide blend

For harsh industrial leads

- Saw or wavetable in
- TARGET to SLIDERs
- SHAPE source = DIFF
- SYNC HARD
- modulate SHIFT and TRGT MOD
- output into saturation or reverb

For evolving drones

- Slow LFO/random into SHIFT, SHAPE, TARGET
- SHAPE source = DELAY or OUT
- wide stereo output
- post-process with reverb/granular

For percussion

- short sine burst or click into IN
- TARGET sliders with some zero stages
- HALT IF TARG=0 on
- SYNC HARD
- use COUNT or DIFF elsewhere in patch for coherent percussion CV

For generative patches

- use macro envelope + threshold LFOs
- self-patch aux outputs through matrix mixer

- route TRGTs output to other modules
- randomize equalize/sync/target behavior externally

A few “hidden gem” uses from the manual

1. TRGTs output as its own sequencer

This is easy to miss. The TRGTs are not just internal. Use them externally as: - 8-step wavetable-ish source - sequencer for filter cutoff - modulation lane tied to threshold events

2. ABS(IN) output

Full-wave rectified input is super useful for: - unipolar envelope-like behavior - modulation from bipolar oscillators - driving VCAs or LPGs

3. COUNT vs DAC

These are related but distinct: - **COUNT** = equal 0.5V steps - **DAC** = weighted threshold contributions

COUNT is rhythmic and obvious. DAC is subtler and more “encoded.”

4. CLIP external override

This turns Skorpion into a cross-processor, not just a folder.

5. Non-audio-rate modulation on thresholds

Threshold modulation can radically alter where folds occur. This is one of the most powerful and least conventional aspects of the module.

Recommended support rack around Skorpion

If you wanted to build a mini ecosystem around it, I'd suggest:

- **1 precise analog oscillator**
- **1 weird digital/noisy oscillator or sample source**
- **1 dual function generator**
- **1 matrix mixer**
- **1 quad VCA**
- **1 multimode filter**
- **1 stereo reverb/delay**
- **1 random/stepped CV source**
- **1 logic/switch module**

That setup would let Skorpion operate as: - voice processor - modulation extractor - stereo timbre designer - self-patched chaos engine - cross-modulation hub

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Final thoughts

Skorpion rewards treating it less like a conventional wavefolder and more like a **threshold-addressed analog computation module for sound and CV**. The deepest patches come from:

- modulating the threshold structure
- using TRGTs as an addressable voltage table
- self-patching the auxiliary outputs
- leveraging external VCAs/mixers to control feedback paths
- processing non-sine, nontraditional sources
- using stereo width as part of the composition, not just a finishing effect

If you want, I can also provide: 1. **10 beginner-friendly Skorpion patches** 2. **10 advanced self-patching feedback patches** 3. **a "best companion**

modules by brand” list 4. **a compact performance cheat sheet for this module**

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