Making Sound Machines — DivSkip

- Manual PDF

WMD Skorpion Manual (PDF)

WMD Skorpion modulation ideas for distorted percussion, monstrous basslines, and haunted pads

Skorpion is not just a wavefolder. It's really a **comparator-driven waveform animation system** with a **vector core**, **per-threshold behavior**, **target sequencing**, **feedback-based slope shaping**, and **stereo widening/delay**. That means it rewards modulation much more than static knob settings.

Below I'll focus on ways to modulate it for: - **distorted percussion** - **dubstep / DnB basslines** - **haunting atmospheric pads**

I'll also point out the most powerful modulation points and self-patching tricks from the manual.

First: what matters most for sound design on Skorpion

These are the parameters that seem to matter most when patching for movement:

1. FOLD

Controls how hard the input is amplified against the threshold stack.
This is the most immediate “more chaos / more aggression” control.

Best modulation use: - envelopes for transient punch - stepped CV for rhythmic changes - audio-rate modulation for harshness

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2. SLOPE

Controls how fast the vector core moves. Higher slope = more harmonic content.

Best modulation use: - pitch tracking via **1V/OCT** for consistent timbre - envelopes to make attack brighter than sustain - LFOs for evolving harmonic motion

This is one of the biggest tone controls on the module.

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3. SHIFT

Offsets the input against thresholds and creates asymmetry.
The manual notes that **slow modulation here can create a frequency shift effect**.

Best modulation use: - slow triangle/sine for movement - envelopes for transient asymmetry - audio-rate modulation for unstable, tearing sounds

This is especially useful for bass and pads.

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4. TARGET

Determines where the vector core is trying to go: - **5V** = more square-like - **CLIP** = overlay with input waveform - **SLIDERs/TRGTs** = threshold-crossing sequenced voltage destinations

Best modulation use: - animated transitions between square-ish, clipping, and sequenced destinations - external CV into **TRGT MOD** - using **TRGTs** as a pseudo wavetable / contour source

This is one of Skorpion's most unique sound design dimensions.

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5. SHAPE + SHAPE SOURCE

SHAPE modulates SLOPE using feedback and internal signals: - **IN** - **OUT** - **DELAY** - **COUNT** - **DIFF** - **TRGTs** - **DAC** - **DIR**

This is probably the deepest sound-design section of the module.

Best sources by vibe: - **OUT**: log/exp-style nonlinear feedback, great for growl - **DIFF**: spiky, harsh, very aggressive - **COUNT**: staircase modulation linked to threshold crossings - **TRGTs**: per-segment waveform shaping - **DIR**: skew and directional asymmetry - **DELAY**: animated stereo and unstable movement

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6. THLD sliders / threshold modulation

The thresholds decide where folds happen. This is huge.

You can: - set them manually - equalize them for more "classic wavefolder" behavior - modulate all thresholds via **THLDs/** - modulate threshold 1 directly via **THLD1** - add internal threshold LFOs with Macro Setup

This is how you move from normal wavefolding into animated, comparator-chaos territory.

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7. OUTPUT / WIDE / FILTERS / DELAY

The upper half of OUTPUT introduces widening and delay behavior.
With FILTERS on, lows remain centered and highs spread, which is excellent for bass and pads.

Use this for: - wide metallic percussion - basses with mono low-end and wide top - drifting stereo atmospheres

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Most powerful modulation concepts on Skorpion

Before the genre patches, here are the most important general techniques.

A. Use envelopes on FOLD and SLOPE together

This creates a very “acoustic-mechanical” motion: - more fold at attack - more slope at attack - then both decay differently

Result: - snappy percussion - basses with a bark on the transient - pads that bloom and then soften

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B. Modulate SHIFT slowly for unstable spectral drift

Because SHIFT offsets the input against thresholds, it changes which folds happen and when.

Result: - evolving timbre without sounding like a generic filter sweep - very good for haunted drones and living basslines

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C. Use SHAPE source switching as a performance move

Even if the SHAPE amount stays similar, changing the source from: - **OUT** to **DIFF** - **COUNT** to **TRGTs** - **DIR** to **DELAY**

can completely recharacterize the sound.

This is one of the best ways to get “multiple personalities” out of one patch.

D. Self-patch the auxiliary outputs

Skorpion gives you: - **ABS(IN)** - **G(IN>0)** - **TRGTs** - **DIFF** - **±G(DIR)** - **COUNT/** - **DAC** - **DELAY**

These are perfect self-mod sources.

Especially useful: - **DIFF → SHAPE CV** - **COUNT/ or DAC → FOLD CV** - **TRGTs → SHIFT CV** - **DELAY → SHAPE or TARGET modulation** - **±G(DIR) → something external**, or into utilities for rhythmic switching

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E. Use TRGTs like a hidden sequencer

The manual explicitly says the 8 targets form an 8-step voltage-controlled sequencer.

That means you can: - shape the folded waveform in segments - output TRGTs to modulate external modules - modulate all targets together with the **TRGTs input** - choose target order: - **SEQ** = by count of active thresholds - **TIED** = by most recently crossed threshold

This is extremely good for bass growls and animated pads.

F. Use HALT strategically

- **HALT jack** stops the vector core at its current voltage
- **HALT IF TARG=0** lets target segments freeze when their target is 0

This can create: - square-like segments - abrupt rhythmic stutters - frozen spectral moments - gated, robotic bass articulation

Very powerful for aggressive sounds.

Patch ideas for distorted percussion

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1. Broken industrial kick / tom

Goal: a punchy, crushed, metallic kick or tom with folding grit.

Patch

- Sine or triangle oscillator into **IN**
- Pitch envelope on oscillator if desired
- Envelope to **FOLD CV**
- Short decay envelope to **SLOPE CV**
- Set **TARGET** somewhere between **5V** and **CLIP**
- **SHAPE source = DIFF** or **OUT**
- OUTPUT around wet, not yet too wide

Modulation idea

- Make **FOLD envelope** slightly longer than **SLOPE envelope**
- Use **SHIFT** slightly off noon for asymmetry
- Turn on **SYNC = HARD** for consistent attack/reset behavior
- Try **HALT IF TARG=0** with one or two targets at zero if using SLIDER target mode

Why it works

The attack gets fast, bright, and nonlinear, then relaxes into a lower harmonic sustain. DIFF-based shape makes the transient nasty and sharp.

Make it nastier

- Send **DIFF output** back into **SHAPE CV**
- Modulate **TRGT MOD** with a click, noise burst, or another percussion voice
- Use **CLIP jack** with a different source than the input

Using another sound in CLIP is especially good for weird percussion because the output overlays against that foreign contour.

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2. Snare / clap annihilator

Goal: noise-heavy, crispy, tearing snare layers.

Patch

- Noise or noise+oscillator mix into **IN**
- **FOLD** high
- **SLOPE** medium-high
- **SHIFT** slightly positive or negative
- **TARGET = CLIP**
- Feed a separate sharp source to **CLIP**, like:
- short square click
- rimshot signal
- another oscillator
- **SHAPE source = COUNT** or **DIFF**
- OUTPUT into **WIDE**, FILTERS on

Modulation

- Envelope to **FOLD**
- Fast random or stepped modulation to **SHIFT**
- Threshold LFO amount via Macro Setup at subtle depth
- Slow modulation of **OUTPUT** between WET and WIDE

Result

The threshold-crossing behavior turns noise into ripped layers of transient detail, while stereoized highs make the snare sound wider without losing low-end center.

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3. Hi-hats / cymbal shatter patch

Goal: glitchy, metallic, animated hats.

Patch

- Bright noise, FM metallic source, or high triangle into **IN**
- **EQUALIZE THLDs = ON** for more classic evenly-spaced folding
- High **SLOPE**
- **SHAPE source = COUNT** or **DAC**
- OUTPUT above noon into WIDE
- FILTERS on

Modulation

- Very short envelope to **FOLD**
- Fast LFO to **SHIFT**
- Slow LFO to **SHAPE**
- Internal threshold LFOs enabled in Macro Setup
- Optional: **G(IN>0)** or **±G(DIR)** to clock something external that modulates Skorpion back

Result

COUNT and DAC create stepped modulation tied to active thresholds, giving a metallic digital-meets-analog chatter that is excellent for hats.

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4. Glitch percussion with HALT

Goal: stop-start robotic percussion and fractured impacts.

Patch

- Percussive source into **IN**
- Patch gates or audio-rate square wave into **HALT**
- Set **TARGET = SLIDERs**
- Put some **TRGT sliders** at zero
- Enable **HALT IF TARG=0**
- SHAPE source = **TRGTs** or **DIR**

Modulation

- Modulate **TARGET pot**
- Modulate **THLDs/** with a rhythmic CV
- Switch **TARGET ORDER** between **SEQ** and **TIED**

Result

The vector core freezes on certain segments, creating abrupt flat spots, gated edges, and machine-gun contour distortions.

This is excellent for IDM-ish percussion or neurofunk drum mangling.

Patch ideas for dubstep / drum & bass basslines

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1. Classic growl bass, but stranger

Goal: a bass that snarls and changes internal shape beyond ordinary filter/FM growls.

Patch

- Saw, square, or complex oscillator into **IN**
- Patch pitch CV to oscillator and to **1V/OCT** on Skorpion
- **FOLD** medium-high
- **SLOPE** medium
- **SHIFT** near noon
- **TARGET** between **SLIDERs** and **CLIP**
- **SHAPE source = OUT**
- OUTPUT around wet or slightly into wide with FILTERS on

Modulation

- LFO or envelope to **SHIFT**
- Envelope to **FOLD**
- Different envelope to **SLOPE**
- Slow CV to **TARGET**
- Use Macro LFO on **SHAPE** or **SLOPE**

Why it works

1V/OCT keeps the slope behavior musically consistent across notes. OUT-based shape gives organic nonlinear feedback, which is great for talking/growling basses.

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2. Neuro bass / tearing reese mutation

Goal: moving bass with vocal tearing, internal segment changes, and asymmetry.

Patch

- Detuned saw pair or Reese source into **IN**
- **TARGET = SLIDERs**
- Set 8 TRGT sliders to alternating positive/low/zero-ish contour shapes
- **TARGET ORDER = TIED** for more chaotic selection

- **SHAPE source = TRGTs**
- **SHIFT** slightly offset from noon
- OUTPUT in FILTERS mode, slightly wide

Modulation

- Slow LFO to **SHIFT**
- Envelope follower or synced LFO to **THLDs/**
- **TRGT MOD** with an LFO, envelope, or external audio source
- **DIFF output → SHAPE CV**
- Optional: **DELAY output → TRGT MOD** or **SHAPE CV**

Result

Each threshold-crossing can push the vector core toward a different destination, while SHAPE sourced from TRGTs changes the slope segment-by-segment. This gives highly articulated, speech-like growls.

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3. Talking wobble bass without a filter

Goal: vowel-like movement using threshold and target animation rather than standard filter sweeps.

Patch

- Rich oscillator into **IN**
- **TARGET = SLIDERs**
- Create a non-linear TRGT pattern with valleys and peaks
- **SHAPE source = COUNT** or **DAC**
- **EQUALIZE THLDs = XOR** so CV can dynamically switch equalized/non-equalized threshold behavior
- OUTPUT with FILTERS on

Modulation

- Sync'd LFO to **THLDs/**

- Another LFO to **SHIFT**
- Envelope to **FOLD**
- Sequencer row or stepped random to **TRGTs input**
- Gate pattern into **EQ THLDs jack** to alternate classic wavefolder vs irregular threshold map

Result

The bass articulates in a vocal-ish way because threshold activation patterns change, not just brightness. Toggling equalized thresholds can sound like switching between different “mouth shapes.”

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4. Over-the-top DnB bass stab

Goal: hard transient, aggressive midrange, wide top, mono low end.

Patch

- Oscillator or bass chord source into **IN**
- Pitch to oscillator and **1V/OCT**
- **SYNC = HARD**
- **TARGET = 5V** or near 5V
- **SHAPE source = DIFF**
- **FOLD** high
- **SLOPE** high
- OUTPUT into upper half, **FILTERS** engaged

Modulation

- Fast decay envelope to **SLOPE**
- Medium decay envelope to **FOLD**
- Short accent envelope to **SHIFT**
- Use **COUNT/** or **DAC** out to modulate an external VCA/filter in parallel
- Slow LFO on OUTPUT amount for evolving width

Result

Very strong square-ish, ripping attack with stable low fundamentals and stereo spread in the upper band.

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5. Audio-rate FM-style brutality

Goal: harsh, screeching, modern bass destruction.

Patch

- Oscillator into **IN**
- Another oscillator or bright audio source into:
- **TRGT MOD**
- or **SHIFT CV**
- or **THLDs/**
- **SHAPE source = DIFF** or **OUT**
- **TARGET = CLIP** or between CLIP and SLIDERs

Modulation

- Audio-rate modulation to **SHIFT** is especially wild
- Audio-rate into **THLDs/** changes threshold map at audio speeds
- Audio-rate signal into **CLIP** replaces the clipping reference with another waveform

Result

Skorpion becomes a bizarre comparator/FM/wavefold hybrid. This is ideal for screaming fills, transitions, or extreme basses.

Patch ideas for haunting atmospheric pads

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1. Evolving ghost pad

Goal: soft but uncanny harmonic movement, slowly shifting asymmetry, wide stereo top.

Patch

- Slow chord, drone, or detuned oscillator stack into **IN**
- **DRY IF NO THLDs = ON**
- Moderate **FOLD**
- Lower **SLOPE**
- **SHIFT** at or near noon
- **TARGET** between **CLIP** and **SLIDERs**
- **SHAPE source = OUT** or **DELAY**
- OUTPUT in upper half, FILTERS on

Modulation

- Very slow LFO to **SHIFT**
- Very slow LFO to **SHAPE**
- Very slow modulation to **TARGET**
- Internal Macro envelope controlling threshold LFOs with long attack/release
- Use Macro Setup to create extremely slow movement over minutes

Why DRY IF NO THLDs matters

When heavily modulating FOLD or threshold conditions, it ensures you still get signal and can create gentle transitions between dry-following and folded states. That's very useful for atmospheric work.

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2. Haunted shimmer cloud

Goal: unstable stereo bloom with delayed spectral feedback.

Patch

- Harmonic source into **IN**
- **OUTPUT** above noon into WIDE
- **FILTERS** on
- **SHAPE source = DELAY**
- **TARGET = CLIP**
- Use a soft source, like triangle/pulse blend or processed field recording oscillator texture

Modulation

- Very slow triangle to **SHIFT**
- Slow CV to **OUTPUT**
- Slow random to **FOLD**
- Optional: patch **DELAY output** externally through reverb and bring it back to **CLIP** or **TRGT MOD**

Result

The delay-derived shape source creates motion that feels spectral and ghostly rather than obviously LFO'd.

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3. Segmented pad with hidden melody inside

Goal: a drone where different harmonic segments emerge as thresholds are crossed.

Patch

- Sustained oscillator/chord into **IN**
- **TARGET = SLIDERs**
- Set TRGT sliders to a musically related contour
- **TARGET ORDER = SEQ** for more predictable motion
- **SHAPE source = TRGTs**
- **SLOPE** moderate
- **FOLD** low to medium

Modulation

- Slow envelope or LFO to **THLDs/**
- Slow modulation to **SHIFT**
- Optional: modulate all targets using **TRGTs input**
- Use Macro threshold LFOs with very slow rates

Result

The pad slowly animates across internal “zones,” almost like a wavetable scan controlled by threshold activity.

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4. Frozen sorrow drone

Goal: suspended, broken, nearly-static texture with occasional motion.

Patch

- Drone source into **IN**
- **TARGET = SLIDERs**
- Put several target sliders at zero
- Enable **HALT IF TARG=0**
- **SHAPE source = DIR** or **OUT**
- **SYNC = SOFT**

Modulation

- Sparse gates to **HALT**
- Slow CV to **SHIFT**
- Very slow CV to **SLOPE**
- Slight movement on **THLDs/**

Result

Parts of the waveform stall, hang, and then resume, giving eerie suspended harmonics and frozen emotional texture.

Best self-patching tricks

These are especially powerful on Skorpion.

1. DIFF → SHAPE CV

Probably one of the best aggressive patches.

Sound: - sharper transients - unstable, spiky, tearing harmonics - great for bass and percussion

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2. TRGTs output → SHIFT CV

Lets the target sequencer also bias threshold crossing asymmetry.

Sound: - internal recursive animation - basses that seem to “talk” - pads with subtle contour drift

Attenuate this if possible.

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3. COUNT/ or DAC → FOLD CV

Since these reflect active thresholds, the amount of threshold activity changes fold amount.

Sound: - dynamic harmonic escalation - responsive growl - self-energizing textures

COUNT/ is more obvious.
DAC is subtler and often more musical.

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4. DELAY → SHAPE CV or TRGT MOD

Especially good when OUTPUT is in WIDE range.

Sound: - spectral smear - unstable stereo movement - eerie self-related animation

Excellent for pads and strange percussion.

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5. ABS(IN) → external modulation destination

Use ABS(IN) as a derived envelope-ish audio modulation source outside Skorpion, then send that back in somewhere else.

Good return points: - FOLD CV - SHIFT CV - TRGT MOD - THLDs/

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6. G(IN>0) or ±G(DIR) for rhythmic logic

These are great utility outputs.

Use them to: - trigger envelopes elsewhere - switch CV paths - clock logic - derive rhythmic gates from the waveform itself

Then route those back to Skorpion or other modules.

How to use the Macro Setup musically

The internal macro section is easy to overlook, but it’s very useful for “alive” patches.

Best uses for distorted percussion

- Set short-to-medium Macro attack/release
- Use threshold LFO amount low-to-medium
- Put hardware normal modulation on **FOLD** and **SLOPE**
- Trigger Macro ENV per hit or phrase

This makes repeated percussion evolve slightly while staying coherent.

Best uses for basslines

- Put **SHIFT** in LFO mode
- Put **SHAPE** in ENV mode
- Put **SLOPE** in LFO or ENV mode depending on whether you want wobble or punch
- Trigger Macro ENV from sequence accents

This gives a bass patch movement even if you don’t have extra external modulators.

Best uses for pads

- Long attack and release on Macro ENV
- Slow threshold LFO rate
- Subtle amount on threshold LFOs
- Put **SHIFT** and **SHAPE** in LFO mode
- Put **FOLD** in ENV mode if you want bloom

The result is slow spectral emergence that feels composed rather than random.

Switch settings that dramatically change character

EQUALIZE THLDs

- **ON**: more classic wavefolder, more predictable, good for percussion and stable basses
- **OFF / JACK-controlled**: more unique irregularity, better for experimental bass/pad work

- **XOR**: excellent for rhythmic switching between classic and weird

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SYNC

- **HARD**: tight attacks, consistent bass transients, percussive precision
- **SOFT**: more organic, smeared resets, nice for pads
- **X**: freer, more chaotic behavior

TARGET ORDER

- **SEQ**: more repeatable, phrase-like, musical
- **TIED**: more reactive and less predictable, good for wild basses and chaotic percussion

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OUTPUT SWITCH

- **DC**: rawest signal
- **FILTERS**: centered lows + widened highs, best for bass and spacious pads

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Three complete recipe patches

Recipe 1: “Neuro Snarl Bass”

- Reese oscillator into IN
- Pitch CV also to 1V/OCT
- TARGET = SLIDERs
- TARGET ORDER = TIED
- SHAPE source = TRGTs
- SHAPE amount moderate positive

- FOLD medium-high
- SLOPE medium
- SHIFT slightly off noon
- OUTPUT in FILTERS wide mode
- DIFF → SHAPE CV
- Slow LFO → SHIFT
- Envelope → FOLD
- Envelope → SLOPE
- TRGT MOD from another oscillator or envelope

Result: vocal tearing, unstable phrase-like bass with stereo aggression and centered weight.

Recipe 2: “Destroyed Techno Percussion”

- Sine or triangle VCO into IN
- Hard pitch envelope on oscillator
- HARD SYNC on Skorpion
- TARGET near 5V
- SHAPE source = DIFF
- Short env → SLOPE
- Slightly longer env → FOLD
- Random stepped CV → SHIFT
- CLIP fed from noise burst or another percussive source
- OUTPUT mostly wet

Result: industrial kick/tom/snare territory with brutal attack and strange overtone sprays.

Recipe 3: “Cathedral Ghost Pad”

- Two detuned triangles/chord source into IN
- DRY IF NO THLDs on
- TARGET between CLIP and SLIDERs
- SHAPE source = DELAY
- SOFT SYNC

- OUTPUT wide with FILTERS
- Long Macro attack/release
- Threshold LFO amount subtle
- Slow LFO → SHIFT
- Slow LFO → TARGET
- DELAY → SHAPE CV
- External reverb after OUT L/R

Result: drifting, mournful, haunted stereo bloom with animated harmonic fog.

Practical tips

Use attenuation

Skorpion seems very sensitive to modulation depth. Many of the best sounds will come from **small amounts** of CV, especially on: - SHIFT - SHAPE - THLDs/ - TRGT MOD

Keep SHIFT near noon when exploring HALT

The manual specifically hints this gives best results, because SHIFT is summed with IN after FOLD.

Use 1V/OCT for pitched bass work

The manual notes it controls slope and is necessary for equal timbre across different notes. If you want bass patches to stay consistent across a line, patch it.

Don’t ignore CLIP input

This is one of the coolest features for unconventional sounds. Replacing the input-normalled clip signal with: - drums - another oscillator - voice - field recording-derived signal

can radically alter the folding behavior.

WIDE is not just “stereo”

It also gives access to the delay behavior. Since DELAY can be used as a modulation-related source and SHAPE source, OUTPUT position can indirectly change timbre, not just width.

Best modulation destinations by genre

For distorted percussion

1. FOLD
2. SLOPE
3. SHAPE
4. TARGET / TRGT MOD
5. HALT

For basslines

1. SHIFT
2. SHAPE
3. TARGET / TRGTs
4. THLDs/
5. OUTPUT wide/filter balance

For atmospheric pads

1. SHIFT slow modulation
2. SHAPE source = DELAY / OUT / TRGTs
3. THLD LFOs via Macro Setup
4. TARGET slow modulation
5. OUTPUT into WIDE with FILTERS

Final takeaway

The most unique sounds from Skorpion will usually come from **modulating relationships**, not just single parameters. The best pairings are:

- **FOLD + SLOPE** for transient character
- **SHIFT + THLDs/** for moving asymmetry and fold topology
- **TARGET + SHAPE source** for changing the actual contour logic
- **OUTPUT/DELAY + SHAPE** for spacious spectral motion
- **DIFF / COUNT / TRGTs self-patching** for recursive complexity

If you want, I can also turn this into: 1. a **quick-start cheat sheet**,
2. **10 specific patch recipes with knob positions**, or
3. a **self-patching-only guide for Skorpion**.

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