

# WMD – Skorpion

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## Using the WMD Skorpion to Build Full-Length Songs

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Skorpion is not just a wavefolder. It is a **gesture-rich, self-modulating timbre sequencer, stereo widener, modulation source, and structure tool**. If you only use it as “audio in, folded audio out,” you’ll get excellent tones. But if your goal is **full-length songs**, the real power is that Skorpion can create **evolution over time**: section changes, timbral motifs, rising tension, drops, transitions, call-and-response, and arrangement-level modulation.

That is exactly the missing link in many Eurorack systems: not how to make a good sound, but how to make a sound **develop across minutes**.

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## What Skorpion contributes to song structure

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From the manual, these are the features that matter most for composition and arrangement:

- **Voltage-controlled wavefolding with multiple dimensions**
  - FOLD
  - SLOPE
  - SHIFT
  - SHAPE
  - TARGET behavior
- threshold layout via sliders

- **8 thresholds and 8 targets**
- This means the timbre can be treated almost like a **sequence of internal events**
- The sound can change differently depending on which threshold crossings are active
- **Macro system with envelope-gated internal LFOs/envelopes**
- This is huge for song form
- You can bring modulation in and out over long timescales
- Attack/release can be from **50 ms to 600 s**
- That's not just modulation; that's **arrangement timing**
- **Aux outputs**
- ABS(IN)
- G(IN>0)
- TRGTs
- DIFF
- ±G(DIR)
- COUNT
- DAC
- DELAY
- These can drive other modules, making Skorpion a **central composition brain**
- **Stereo output behavior**
- Dry/wet/wide blending
- Delay-based stereo widening
- Optional filtered mid/side treatment
- This helps with section contrast and mix placement over a song

So the key idea is:

Skorpion can function as a **song-evolution engine**, not just a sound shaper.

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# Core strategy: use Skorpion on the “arrangement axis”

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In a full song, you need some or all of these:

1. **A stable identity**
2. **Gradual development**
3. **Clear section changes**
4. **Variation without losing coherence**
5. **Transitions**
6. **Mix-space contrast**
7. **A way to return to motifs**

Skorpion is especially strong at points 2–6.

Use it in one or more of these roles:

- **Main voice timbre animator**
- **Bass voice enhancer**
- **Percussion mangler**
- **Stereo transition processor**
- **Arrangement modulation hub**
- **Self-playing texture layer**
- **Cross-modulation source for the whole patch**

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## Best full-song use cases

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### 1. Make Skorpion the lead voice’s “arrangement performer”

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Patch a melodic oscillator into **IN**, then send **OUT L/R** to your mixer or final VCA.

## Good pairings

- Analog VCO or complex oscillator
- Sequencer with transposition
- Envelope + VCA
- Filter after or before Skorpion
- Delay/reverb after Skorpion

## Why this works

A melody often gets stale because only pitch changes while timbre stays fixed. Skorpion gives you: - different harmonic density via **SLOPE** - different fold event behavior via **THLDS** - asymmetry and frequency-shift-like movement via **SHIFT** - section-specific contour via **TARGET** - feedback personality via **SHAPE**

## Song workflow

- **Intro:** dry-ish output, low fold, equalized thresholds on for a classic wavefolder feel
- **Verse:** moderate fold, subtle macro-LFO on SHIFT or SHAPE
- **Pre-chorus:** start opening threshold modulation amount and increase output width
- **Chorus:** more wet, more slope, more target modulation, wide stereo on
- **Breakdown:** dry-if-no-thlds and sparse threshold settings so the voice almost collapses back to a filtered near-dry core
- **Final chorus:** reintroduce modulation with greater macro attack/release and wider stereo

This preserves the same melodic material while changing the emotional intensity.

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## 2. Use Skorpion as a “section morph” processor for bass

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Basslines often sound great in a loop but need arrangement variation without losing weight. Skorpion is useful because: - it can remain centered if you use the **FILTERS** output switch with the mid/side network - low frequencies under 240 Hz stay centered - higher harmonics widen

This is ideal for full songs because you can make the bass: - mono and restrained in verses - brighter and wider in choruses - aggressive and broken in fills - filtered and reduced in breakdowns

### Patch

- Bass oscillator or submix -> Skorpion IN
- OUT L/R -> mixer
- Optionally blend a dry sub bass in parallel outside Skorpion

### Good controls to automate over a song

- **OUTPUT** from dry to wet to wide
- **SLOPE** for harmonic growth
- **SHIFT** for asymmetry and motion
- **TARGET** set toward 5V for more squared/aggressive character in louder sections
- **SYNC** hard or soft depending on desired tightness

### Arrangement trick

Use **COUNT** or **DAC** output to modulate: - filter cutoff on a parallel bass filter - VCA for a subtle dynamic brightness change - compressor sidechain threshold CV if your system supports it

This ties the bass timbre’s internal folding activity to the rest of the mix.

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### 3. Turn Skorpion into a percussion scene-transformer

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Skorpion should be thought of as excellent for **drum bus processing** or **single percussion voice mutation**.

#### Best input material

- Hats
- Claps
- Toms
- FM percussion
- Entire drum submix
- Noise bursts
- Loops from a sample player

Because Skorpion responds to threshold crossings and slope behavior, percussive material can become: - metallic - splattered - gated - sequenced in timbre - pseudo-granular - stereo animated

#### Song application

Instead of changing the drum pattern, change the **drum character per section**.

#### Example arrangement

- **Verse:** hats through Skorpion with low fold, slight delay width
- **Pre-chorus:** increase SHAPE using DIFF or OUT feedback source
- **Chorus:** widen output, increase SLOPE and THLD LFO amount
- **Bridge:** use HALT and TRGT = 0 segments for glitchy frozen slices
- **Transition fill:** hard sync and rapid modulation of FOLD and SHIFT

This creates the impression of new drum sections while the actual pattern may remain almost unchanged.

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# The macro envelope is the song form secret weapon

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The manual's **Macro Setup / Macro Envelope** section is the most compositionally important part of the module.

You can: - fade in/out the amplitude of threshold LFOs - assign LFOs or envelopes to FOLD, SLOPE, SHIFT, SHAPE - gate the whole internal modulation ecosystem with the toggle or MACRO ENV input - use attack/release times up to **600 seconds**

That means Skorpion can evolve over **10-minute timescales**.

## Why this matters for songs

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A full song needs macro-time movement. Most modular patches only move on: - note timescale - bar timescale - maybe 8-bar timescale

Skorpion can move on: - **section timescale** - **whole-song timescale**

## Practical uses

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### Long build

- Set macro attack to 60–180 seconds
- Gate macro on at the beginning of the track
- Let threshold LFO amount and SHAPE modulation slowly emerge
- Your lead or drone gradually becomes more alive over the first half of the track

### Chorus bloom

- Trigger macro gate only during chorus sections
- Use medium attack and release
- FOLD and OUTPUT widen together
- Chorus gets a consistent “opened up” identity

## Breakdown fade

- Turn macro off entering breakdown
- Long release allows motion to decay naturally
- Texture simplifies without abruptness

## Outro decomposition

- Send sparse gates to MACRO ENV while reducing source sequence complexity
- Let Skorpion become the main thing still moving
- Great for ambient and techno endings

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# Build song sections with threshold and target states

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The **THLDs** and **TRGTs** are where Skorpion becomes compositional rather than merely timbral.

## THLDs = where folds happen

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The thresholds determine the “terrain” the incoming signal interacts with.

### Section idea

Use different threshold configurations for: - intro - verse - chorus - bridge

If you can't automate the slider positions directly, create section changes with: - **EQUALIZE THLDs** switch/jack - **THLDs/ CV** input - **THLD1** input - macro threshold LFO amount/rate - switching between static settings with external CV or manual performance

## Musical effect

- Equalized thresholds: classic, more predictable, more “instrument-like”
- Unequal thresholds: more animated, quirky, phrase-like, unstable

That is a perfect contrast between: - **verses = tighter** - **choruses = richer or more chaotic**

## TRGTs = an internal 8-step voltage sequence

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The targets can act like a mini sequencer affecting the vector core's destination voltage.

This is powerful because it can impose **internal phrase contour** on the wavefolding.

## Song use

Create one target profile for a restrained section and another for a more dramatic section.

Also: - Use **TARGET ORDER = SEQ** for more orderly progression - Use **TARGET ORDER = TIED** for more event/reactivity based behavior

## Musical interpretation

- **SEQ** feels more patterned, stable, song-like
- **TIED** feels more gestural, responsive, live, chaotic

You can use this distinction structurally: - intro/verse = SEQ - fill/bridge/noise section = TIED

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# Use the auxiliary outputs as composition signals

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This is where Skorpion becomes truly valuable in larger patches.

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## 1. COUNT output for arrangement-linked modulation

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COUNT outputs a staircase from 0–4V, each active threshold adding 0.5V.

### Use it to modulate

- filter cutoff on another voice
- decay time of a percussion envelope
- VCA level for a texture layer
- clock divider probability
- wave index on a wavetable oscillator
- effect send amount

### Song value

COUNT lets another voice “follow” the density of Skorpion’s activity. This makes the song feel coordinated even if only one voice is directly processed.

Example: - Lead voice through Skorpion - COUNT modulates hi-hat decay and noise brightness - As the lead becomes more harmonically active, hats become brighter too - Instant chorus lift without changing the drum pattern

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## 2. DAC output for subtler coordination

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DAC is a weighted version of threshold count, more nuanced than COUNT.

## Use it for

- nuanced filter FM
- morph CV on digital oscillators
- scan position on a sampler
- stereo field control
- reverb size or tone
- LPG response

## Song use

If COUNT feels too stair-steppy, DAC can provide more “musical continuity.” It’s excellent for: - background pad brightness - send effects that bloom with the lead - gentle movement in accompaniment

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## 3. DIFF output as a high-energy transition source

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DIFF is the difference between the target voltage and the vector core’s current position. It tends to be harmonically rich and always slopes toward 0V.

This is fantastic as a **transition CV** or even as audio.

## Use it to modulate

- resonant filter cutoff
- LPG strike amount
- distortion amount
- sample rate / bit depth
- reverb send
- burst generator density

## Song use

Patch DIFF into: - a second oscillator’s FM index - a filter on noise/percussion - a VCA opening a riser layer

Then when Skorpion becomes more active, the transition layer naturally intensifies.

This is ideal for: - pre-drop risers - bridge noise tension - chorus entry impact

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## 4. TRGTs output as a phrase source

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The TRGTs jack outputs the target sequencer directly.

### Use it to control

- another oscillator pitch, quantized
- filter cutoff sequence
- effect send sequence
- panning sequence
- switch matrix selection

### Song use

Let the same target sequence that shapes the lead timbre also shape: - chord inversion changes - percussion accents - bass cutoff motion

That creates a deep sense of **motivic unity** across the arrangement.

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## 5. G(IN>0), ABS(IN), and $\pm$ G(DIR) for rhythmic logic

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These are excellent utility outputs for generative song structure.

### G(IN>0)

A gate high when input is above 0V.

Use it for: - rhythmic gates tied to waveform polarity - clocking switches - pseudo-subdivision generation - opening a VCA on another layer

## **ABS(IN)**

Full-wave rectified input.

Use it for: - envelope-like modulation from any bipolar source - dynamic reverb or delay send - ducking signals - deriving motion from a melodic line without polarity issues

## **±G(DIR)**

+5V when vector core rises, -5V when it falls.

Use it for: - bipolar panning - alternating modulation destinations - switching between two VCAs or effects - creating call/response between left/right or A/B voices

## **Song-level application**

These outputs are excellent for making accompaniment voices derive their rhythm and phrasing from the main Skorpion voice, which helps a patch feel like a composed piece instead of disconnected loops.

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# **Song-building patch recipes**

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## **Patch 1: Techno arrangement engine**

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### **Modules**

- Kick
- Hat/perc voice
- Bass oscillator + VCA/filter
- Lead oscillator + quantizer + envelope
- Sequencer
- Mixer
- Reverb/delay
- One or two VCAs

- Skorpion

## Patch

- Lead oscillator -> Skorpion IN
- Skorpion OUT L/R -> mixer
- COUNT -> hat decay CV
- DAC -> bass filter cutoff
- DIFF -> effect send VCA CV
- Macro ENV gate from sequencer section trigger

## Performance

- Verse: low macro, narrow output, equalized thresholds
- Build: increase macro env attack, open OUTPUT toward WIDE
- Chorus: increase FOLD/SLOPE and turn on threshold modulation
- Breakdown: lower fold and use DRY IF NO THLDS so melody remains but texture thins
- Rebuild: use DIFF to drive noise riser
- Drop: hard sync, wide output, stronger SHAPE feedback

Result: one melodic voice drives the evolution of several parts of the track.

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## Patch 2: Ambient/drone long-form piece

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### Modules

- Two oscillators or one oscillator + sampler
- Slow random or function generator
- Reverb
- Stereo mixer
- Skorpion
- Optional filterbank or resonator

## Patch

- Rich oscillator/drone source -> Skorpion IN
- DELAY output -> resonator or filterbank
- TRGTs output -> slow quantizer -> second oscillator pitch
- ABS(IN) -> reverb send amount
- $\pm$ G(DIR) -> stereo panning CV or crossfader
- Macro ENV gate manually toggled for section entrances

## Structure

- Start mostly dry and centered
- Slowly fade in macro modulation over 3–5 minutes
- Shift THLD LFO amount upward for increasing internal complexity
- Midway, use TRGTs and TARGET selection to alter contour
- End by reducing macro and leaving only delay/wide residue

Result: Skorpion becomes the central organism that evolves the entire piece.

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## Patch 3: Bass-focused song with evolving top harmonics

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### Modules

- Bass VCO
- Sub oscillator
- Filter
- VCA
- Drum machine / drum voices
- Sequencer
- Mixer
- Skorpion

## Patch

- Bass VCO -> Skorpion IN

- Sub oscillator bypasses Skorpion and stays mono
- Skorpion OUT -> mixer
- OUTPUT switch on FILTERS
- OUTPUT CV from section CV source
- G(IN>0) -> trigger accent envelope for percussion
- COUNT -> subtle overdrive amount on drum bus

## Arrangement

- Keep sub constant through the whole song
- Use Skorpion only for harmonic/top bass layer
- Verses: low wet, less width
- Choruses: more wet/wide and more target activity
- Fills: use HALT or target-zero squaring to make stuttering bass texture

This avoids losing low-end consistency while still getting major sectional changes.

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## Patch 4: Drum bus mutation for transitions

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### Modules

- Drum mixer/submix
- Skorpion
- Compressor
- FX send
- Noise source
- Envelope follower or function generator

### Patch

- Drum submix -> Skorpion IN
- Skorpion OUT -> parallel mixer channel
- DELAY out -> FX chain or feedback chain
- DIFF -> VCA controlling noise burst layer

- ABS(IN) -> compressor sidechain CV or ducking logic
- Macro ENV triggered only on fills and transitions

## **Song use**

Keep the clean drums always present, and bring in Skorpion as a parallel mutation layer: - small in verses - louder in fills - huge before drops - cut away after the drop

This is one of the most direct ways to make a loop become a full arrangement.

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# **How to use Skorpion for intro, verse, chorus, bridge, outro**

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## **Intro**

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Best approaches: - Dry/wet low - Equalized thresholds on - Low SLOPE - Little to no macro modulation - OUTPUT near dry or just entering wet - DELAY/wide subtle

Goal: establish motif without giving away maximum intensity.

## **Verse**

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- Moderate fold
- Controlled threshold activity
- SEQ target order for predictability
- FILTERS mode for stable stereo image
- Gentle SHAPE modulation

Goal: rhythmic and tonal clarity.

## Pre-chorus / build

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- Increase macro envelope or trigger it on
- Increase THLD LFO amount
- Raise SLOPE
- Add DIFF-driven motion elsewhere
- Increase width slowly

Goal: growing complexity and anticipation.

## Chorus

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- Wider output
- Higher fold and/or slope
- More asymmetry via SHIFT
- More active SHAPE source such as OUT, DIFF, or DELAY
- Potentially use TIED target order for livelier feel

Goal: maximal harmonic and spatial bloom.

## Breakdown

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- Reduce active thresholds or use DRY IF NO THLDs
- Pull back width
- Simplify target behavior
- Let a single aux output modulate another minimal voice
- Long macro release to gracefully decay complexity

Goal: contrast and reset.

## Bridge / experimental middle section

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- Use CLIP input from another signal
- Use TRGT MOD asymmetrically
- Use HALT creatively
- Switch sync modes
- Repatch SHAPE source

Goal: a truly distinct section without changing your main voice inventory.

## Outro

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- Slowly reduce macro
- Pull OUTPUT back from wide to wet to dry
- Reduce target complexity
- Let DELAY or DIFF continue modulating support layers
- Thin the arrangement while preserving motion

Goal: decomposition instead of abrupt stopping.

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# Combining Skorpion with specific module types

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## With sequencers

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Use sequencers not just for pitch, but for: - section CV to OUTPUT, FOLD, or TARGET - gates to MACRO ENV - switching sync modes - transposition while timbre remains continuous

Best song trick: - one sequencer row for notes - one row for section intensity - that intensity row controls Skorpion

## With switches / sequential switches

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Excellent for: - swapping audio sources into CLIP - changing CV source into SHAPE - routing TRGTs output to different destinations per section - alternating between equalized and custom threshold states

Switches are one of the easiest ways to turn Skorpion from “good sound” into “arranged composition.”

## With VCAs

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Use VCAs everywhere around Skorpion: - to control modulation depth from aux outputs - to fade parallel dry/wet structures - to automate transition layers driven by DIFF or COUNT

If you want full songs, VCAs are mandatory.

## With filters

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Skorpion plus filter is very strong in either order: - **Oscillator -> filter -> Skorpion** = cleaner and more controlled fold events - **Oscillator -> Skorpion -> filter** = more sculpted, mix-ready aggression

For arrangement, a post-Skorpion filter helps you: - reveal harmonics in choruses - tame them in verses - automate dramatic sweeps in builds

## With effects

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Skorpion's stereo output and delay behavior make it ideal before: - reverb - tempo delay - granular processor - shimmer - resonator

Its aux outputs can also animate effect parameters so the effects "track" the timbral intensity.

## With samplers / loopers

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Patch loops into IN or CLIP: - vocal phrases - drum loops - field recordings - chords

Then use Skorpion to create section mutations without changing the source sample.

This is especially effective for full songs because a familiar sample can remain identifiable while still evolving.

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# Advanced full-song concepts

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## 1. Use Skorpion as a recurring motif transformer

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Have one melody or one texture recur in multiple song sections, but change Skorpion's: - threshold mode - target behavior - width - shape source - sync mode

This gives classic songwriting cohesion: **same theme, new emotional framing.**

## 2. Use aux outputs to make the whole patch "breathe together"

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Instead of random unrelated modulations, derive motion from Skorpion: - COUNT to percussion - DAC to pads - DIFF to FX sends - G(IN>0) to rhythmic accents -  $\pm G(DIR)$  to panning or A/B switching

This makes the patch feel orchestrated.

## 3. Reserve Skorpion's most extreme settings for only one section

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A common mistake in modular is starting too intense. Because Skorpion can get very rich, save these for your biggest section: - high SHAPE feedback - hard sync - TIED target order - asymmetrical TRGT MOD - maximum wide output - active halt tricks

That creates a real arc.

## 4. Use manual performance as arrangement

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Skorpion invites performance: - move OUTPUT through dry/wet/wide - flip EQUALIZE THLDs - change TARGET mode - hold spring toggle left/right to alter TRGTs or Macro Setup - tap macro gate live

A full song in modular often emerges from a combination of: - pre-patched relationships - a few planned manual gestures

Skorpion is excellent for that.

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## Practical “song mindset” with Skorpion

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Instead of asking:

- “How do I make this sound cooler?”

Ask:

- “How does this same voice behave in section A vs B?”
- “What CV from Skorpion can animate another part of the arrangement?”
- “What parameter can evolve over 32 or 64 bars?”
- “How can I reduce complexity after increasing it?”
- “What is the chorus version of this timbre?”
- “What is the breakdown version of this timbre?”

That is the difference between a patch and a song.

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# A simple template for writing a full track with Skorpion

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## Voice roles

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- Kick: stable
- Bass: mostly stable pitch/rhythm, moderate Skorpion-linked brightness
- Lead: main Skorpion-processed voice
- Texture/pad: modulated by Skorpion aux outs
- FX/riser: driven by DIFF or DELAY

## Section plan

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### Intro

- lead dry-ish
- little macro
- no width

### Verse

- moderate wet
- equalized thresholds
- stable target behavior

### Build

- macro on
- threshold LFO amount rising
- output widening
- DIFF opens FX

## Chorus

- widest output
- highest slope/fold
- more active target behavior

## Breakdown

- dry-if-no-thlds
- lower modulation
- maybe only TRGTs output controls a secondary voice

## Final chorus

- return with wider stereo and stronger macro than first chorus

## Outro

- release macro
- narrow stereo
- fade to dry or delay residue

This alone can turn a loop into a complete form.

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# Best companion modules for full-song use

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Skorpion pairs especially well with:

- **A strong sequencer**  
for notes, section gates, and intensity CV
- **VCAs / modulation VCAs**  
to scale aux outputs into arrangement-level changes
- **Sequential switches**  
for section-dependent routing and variation

- **A mixer with mutes or scenes**  
to bring Skorpion in as parallel processing
- **A filter or EQ module**  
for section contrast and mix control
- **A stereo reverb/delay**  
because Skorpion already creates width and complex harmonics
- **A sampler or loop source**  
for long-form mutation of repeated phrases
- **Logic / comparators / clock utilities**  
to translate Skorpion's gates into song events

If you're trying to make full songs, don't just patch Skorpion as a single insert effect. Patch it as a **network node**.

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## Final takeaway

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The WMD Skorpion is unusually well-suited to full-length Eurorack songwriting because it bridges three things at once:

1. **Sound design**
2. **Modulation architecture**
3. **Arrangement-scale evolution**

Most modules do one or two of these. Skorpion does all three.

Its strongest song-level uses are:

- evolving a lead or bass voice across sections
- making percussion or loops transform without changing patterns
- using macro attack/release for long-form movement
- deriving arrangement CV from COUNT, DAC, DIFF, TRGTs, and gate outputs
- creating stereo expansion as a compositional event
- letting one patch produce multiple section identities

If you approach it as a **section morphing instrument** rather than just a wavefolder, it can absolutely help turn a compelling loop into a compelling song.

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[Generated With Eurorack Processor](#)