



PROJECT 1

CELEBRATING MECHANICAL INTERACTION

Swing-Top Kettle

An experiment in elevating an overlooked everyday mechanism. By scaling up the swing-top closure and making it the centerpiece of a premium kettle, the project celebrates its mechanical ingenuity through visible function, tactile interaction and deliberate scale.



OPEN



CLOSED

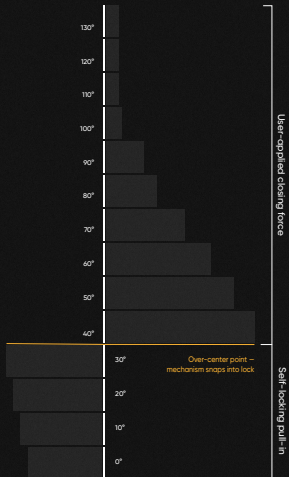
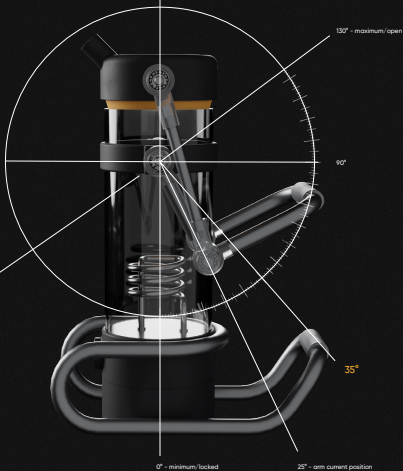
CELEBRATING MECHANICAL INTERACTION

How it locks – and why it feels satisfying

Once the arm passes dead center, the mechanism becomes self-locking and pulls itself into the closed position. The rotation stop defines the final angle, while opening releases the mechanism with a distinct, satisfying plop.



130°



CELEBRATING MECHANICAL INTERACTION

Exposed Mechanism

The mechanism is not hidden behind the product – it becomes the product. The heating coil, bearings, joints and force transmission are deliberately exposed, turning normally concealed technical functions into visible and tactile parts of the design.



CELEBRATING MECHANICAL INTERACTION

Component Architecture

DISCLAIMER:

For clarity, small fastening elements such as grub screws are not shown in this exploded view. Electronic components are also omitted, including the temperature sensor, thermal protection, control electronics, receiver coil, ferrite layer, and other parts related to the inductive power system.

All resin components are specified as food-safe and heat-resistant.

OUTSIDE ARM X2

- ball bearing
- connection point 1 (resin printed)
- compression seal
- tension spring
- 10 mm alloy tube
- connection point 2 (resin printed)
- 8 mm solid alloy pin

INSIDE ARM X2

- ball bearing
- connection point 3 (resin printed)
- compression seal
- solid alloy pin with nub 8 mm
- 15 mm alloy tube
- 90° connection point (resin printed)
- ball bearing
- compression seal
- 15 mm bent alloy tube (35 radius)
- milled alloy handle (knurling)

HEAD

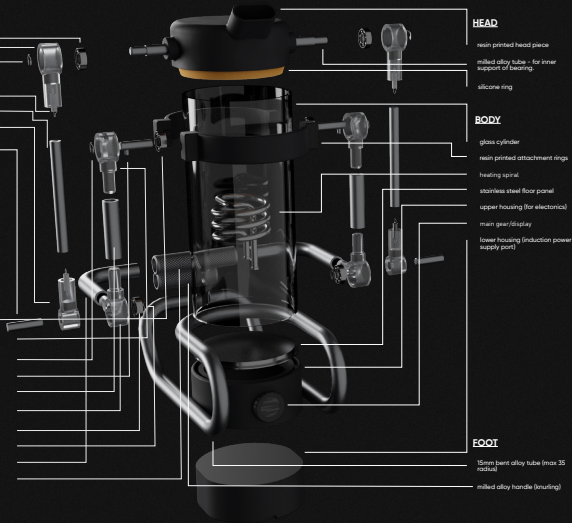
- resin printed head piece
- milled alloy tube - for inner support of bearing.
- silicone ring

BODY

- glass cylinder
- resin printed attachment rings
- heating spiral
- stainless steel floor panel
- upper housing (for electronics)
- main gear/display
- lower housing (induction power supply port)

FOOT

- 15 mm bent alloy tube (max 35 radius)
- milled alloy handle (knurling)



PARAMETRIC STITCHING PATTERN DESIGNER

Identity in Every Stitch

For centuries, stitching and embroidery have transformed textiles into carriers of identity, place and memory. Alongside colour, material and form, pattern gives an object context—and sometimes, a soul.

Traditional Matyó Folk Wear – Hungary

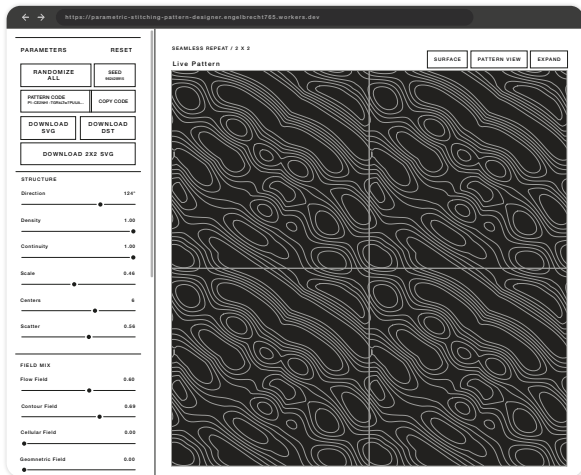


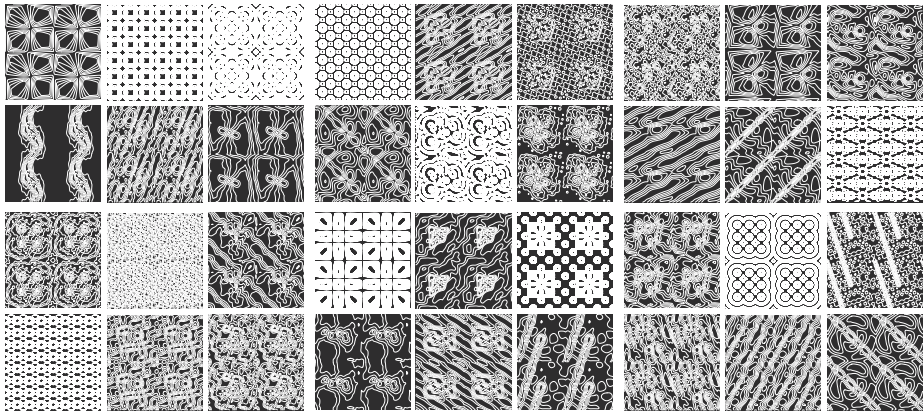
How the Tool Works

A parametric tool that generates seamless embroidery patterns through combinations of rules and values. Like Grasshopper for Rhino, it does not design a fixed pattern—it defines the system that produces it.

Each result is translated into continuous, stitchable paths shaped by the logic and limitations of embroidery.

GENERATE YOUR OWN PATTERN ↗





Emerging from pure mathematics, some patterns feel entirely unexpected, while others appear strangely familiar—as if they had always existed.

POTENTIAL APPLICATIONS



LEATHER BAG – EMBROIDERY MOCKUP



CAR SEAT – PANEL STITCHING MOCKUP



SADDLE PAD – QUILTED STITCHING MOCKUP

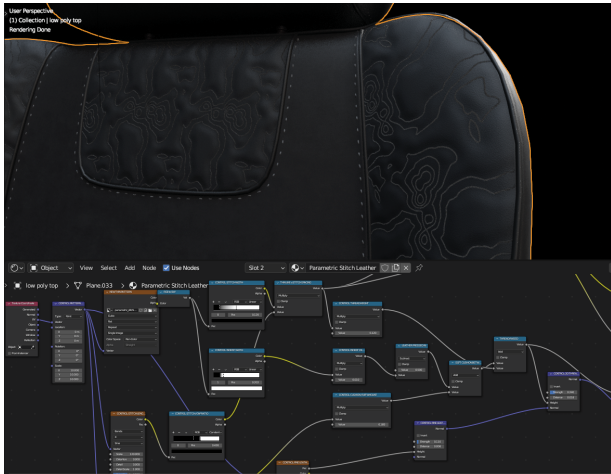
PROCESS

```

286 const flowWeight = params.flowField * (0.35 + params.continuity * 0.9)
287 const contourWeight = params.contourField * (1.15 - params.continuity)
288 const cellularWeight = params.cellularField * (1.12 - params.continuity)
289 const geometricWeight = params.geometric * (1.05 - params.continuity)
290 const networkWeight = params.network * (0.82 + params.continuity * 0.1)
291 const totalWeight = flowWeight + contourWeight + cellularWeight + geometricWeight + networkWeight
292 if (totalWeight < 0.001) return topographicField;
293 return (
294   lineField * flowWeight +
295   contourComponent * contourWeight +
296   cellularField * cellularWeight +
297   geometricComponent * geometricWeight +
298   networkComponent * networkWeight
299 ) / totalWeight;
300 }
301
302 function edgePoint(edge, x, y, values, level) {
303   const corners = [
304     { x: x, y: y, value: values[0] },
305     { x: x + 1, y: y, value: values[1] },
306     { x: x + 1, y: y + 1, value: values[2] },
307     { x: y: y + 1, value: values[3] },
308   ];
309   const pairs = [[0, 1], [1, 2], [2, 3], [3, 0]];
310   const [aIndex, bIndex] = pairs[edge];
311   const a = corners[aIndex];
312   const b = corners[bIndex];
313   const denominator = b.value - a.value;
314   const amount = Math.abs(denominator) < 1e-9 ? 0.5 : (level - a.value) / denominator;
315   return { x: mix(a.x, b.x, amount), y: mix(a.y, b.y, amount) };
316 }
317
318 function contourSegments(grid, level) {
319   const segments = [];
320   for (let y = 0; y < RESOLUTION; y++) {
321     for (let x = 0; x < RESOLUTION; x++) {
322       const values = [grid[y][x], grid[y][x + 1], grid[y + 1][x + 1], grid[y + 1][x]];
323       const edgePairs = [[0, 1], [1, 2], [2, 3], [3, 0]];
324       const hits = [];
325       edgePairs.forEach(([a, b], edge) => {
326         if ((values[a] < level && values[b] >= level) || (values[a] >= level && values[b] < level)) {
327           hits.push(edge);
328         }
329       });
330       if (hits.length === 2) segments.push([hits[0], hits[1]]);
331       else if (hits.length === 4) {
332         const center = (values[0] + values[1] + values[2] + values[3]) / 4;
333         if (center >= level) {
334           segments.push([hits[0], hits[1], hits[2], hits[3]]);
335         } else {
336           segments.push([hits[0], hits[3], hits[1], hits[2]]);
337         }
338       }
339     }
340   }
341 }

```

Excerpt from the designers JavaScript core, combining five mathematical fields into one continuous pattern.

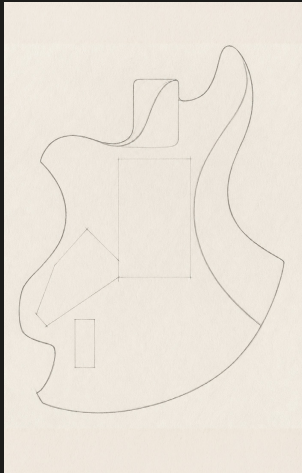
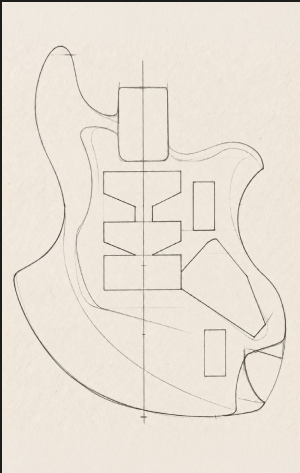


Applying a pattern generated by the parametric tool to a car seat surface in Blender.

REFRAMING THE GUITAR INPUT

Custom Electric Guitar

A custom-built electric guitar developed around a cleaner cable integration and a heavier metal-oriented sound.



REFRAMING THE GUITAR INPUT

Comparing Existing Solutions

The Stratocaster uses an angled top-mounted jack, while the Les Paul moves the connection to the side of the body.

The custom guitar combines the advantages of both approaches: the recessed lower cutout protects the plug from accidental impact while keeping the connection off the top surface for a cleaner and less intrusive interaction.

STRATOCASTER

ERICS EXPERIMENT

LES PAUL



REFRAMING THE GUITAR INPUT

Surface & Final Character

The final finish reinforces the guitar's heavier visual direction.

On the body, parts of the stain were sanded back before clear coating, creating a worn and irregular wood texture.

The pickguard was dry-brushed with black stain using a stiff brush, producing a rough, unpredictable pattern. Together, both surface treatments give the instrument a more aggressive and handcrafted character.



Pickguard Finish
Dry-brushed black stain



Body Finish
Sanded-back stain



PROCESS



DESIGNED LIFESPAN

Bio-Composite Research

Exploring fully biodegradable composites with a lifespan defined by surface protection and maintenance. The material is developed to combine controlled degradation with manufacturing methods commonly used for rigid composites, including wet layup, molding and vacuum forming.



DESIGNED LIFESPAN

Material Experiments & Properties

Material experiments explored three biodegradable bases: agar-agar, alginate and gelatin. The most promising composition combined gelatin and glycerin with jute fibers as structural reinforcement.



2x Jute layer, Water
300ml, Alginate, 12g
Glycerine 15g



1x Jute layer, Water 240ml,
Gelatine 48g



Water 240ml, Gelatine
48g, Glycerine 2g



2x Jute layer, Water
300ml, Agar Agar 12g,
Glycerine 17g



Water 300ml, Alginate,
12g Glycerine 15g, Calci-
um treatment



1x Jute layer, Water
300ml, Alginate 12g,
Glycerine 15g



1x Jute layer, Water
300ml, Gelatine 48g,
Glycerine 2g



1x Jute layer, Water 240ml,
Alginate 12g Glycerine
15g



1x Jute layer, Water
300ml, Alginate 15g,
Glycerine 15g



Water 300ml, Alginate
12g, Glycerine 15g



Water 300ml, Agar Agar
12g, Glycerine 17g



1x Jute layer, Water
300ml, Agar Agar 12g,
Glycerine 15g



1x Jute layer, Water
240ml, Gelatine 48g

Forming & Manufacturing Methods

Initial experiments explored how the most promising composite could be formed into rigid 3D structures. Two methods were tested: molding jute and the gelatin mixture over ceramic forms, and coating flat jute sheets before rolling them into cylindrical structures. Both methods successfully produced stable three-dimensional forms.



DESIGNED LIFESPAN

Full-Scale Chair Prototype & Lifespan

Following the small-scale tests, the material was applied to a full-scale chair using an existing plastic chair as a mold.

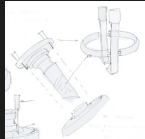
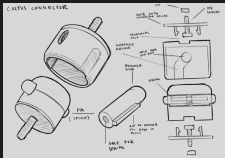
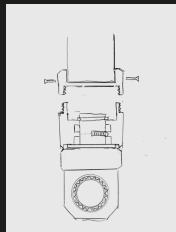
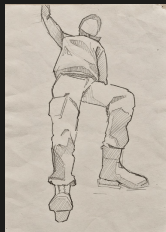
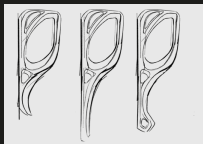
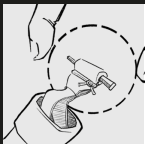
The chair was chosen to test whether the composite could achieve sufficient rigidity for a functional object.

Limited airflow through the mold and the lack of a sufficiently large drying oven resulted in uneven drying and a less refined final form.

Despite these manufacturing limitations, the composite demonstrated promising structural properties and provided valuable insights for improving the process in future applications.



SKETCHBOOK





HELLO, I'M ERIC.

I'm a design student with Austrian and Hungarian roots, shaped by life in Germany and an international education in Eindhoven.

I see design as a tool to create greater tools. Through intuitive mechanisms and thoughtful objects, I want to create things worth making, using and keeping.

EDUCATION

2024 - PRESENT - EXPECTED GRADUATION 2028
Design Academy Eindhoven

Bachelor of Design
Eindhoven, Netherlands

2023
Abtei Gymnasium Brauweiler

Abitur - Qualification for German higher education
Cologne, Germany

HARD SKILLS

- Fusion 360
- Blender
- Adobe Illustrator
- Adobe Photoshop
- Adobe InDesign
- Adobe After Effects
- Figma
- HTML / CSS / JavaScript (Basics)
- Sketching
- Prototyping & Model Making

SOFT SKILLS

- Creative Problem Solving
- Conceptual Thinking
- Independent Working
- Teamwork
- Adaptability

CONTACT

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Eindhoven, Netherlands

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+49 15251617343

I'm looking for an internship of around 700 hours (approx. 5–6 months).
I'm eager to bring fresh perspectives, creative ideas and a hands-on approach to real design challenges. I want to contribute meaningful work, take responsibility and give my absolute best – while learning from the people around me and growing as a designer.

EXPERIENCE

2024 - PRESENT
Studentenrabatt.com
Working Student – Project Management

2024 - 3 MONTHS
Campus Service
Communication Design Internship

2024 - 3 MONTHS
RAUMWERK
Carpentry Internship

INTERESTS

- Machines & Mechanics
- Automotive Design
- Chess
- Judo
- Drawing
- Making & Building
- Curiosity-Driven Research
- History

LANGUAGES

- German – Native
- Hungarian – Native
- English – Fluent (C1)