

# Peter Scherschligt - 2026 Portfolio

A collection of projects completed at the University of Minnesota



**Coleman** **SIPHONBREW**  
A portable coffee solution



**LITTER-ROC**  
Cheap, Clean and Inventive Litter Alternative



**MUJI** 無印良品 **DESK ACCESSORIES**  
Creating a naturally organized space



# ***SIPHONBREW***

**A PORTABLE POWERED BREWING  
METHOD FOR CAMPERS**

2024 - 12 Weeks



## THE LIFELONG CAMPER

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A lifelong instant coffee drinker in need of a better brew



Too bland



Too heavy



Too smart

**HOW MIGHT WE HELP CAMPERS MAKE HIGHER QUALITY COFFEE  
WITHOUT SACRIFICING SIMPLICITY?**

# SIPHON BREWING

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## A NON ELECTRIC WAY TO VACUUM BREW COFFEE

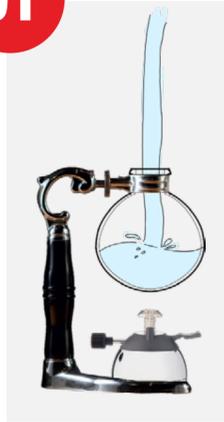
Siphon technology pulls a high quality brew without any moving parts or electronics making it ideal for camping



# HOW DOES IT WORK?

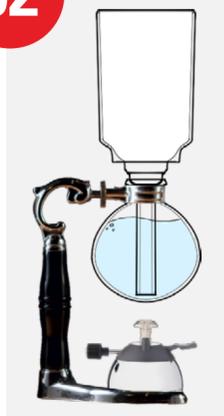
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01



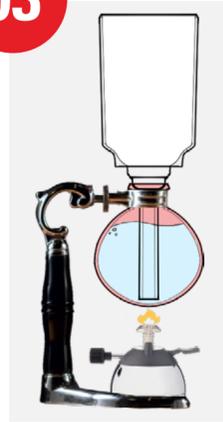
Add Water

02



Seal Chamber

03



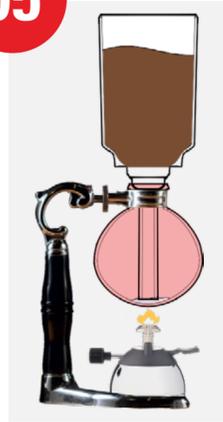
Apply Heat

04



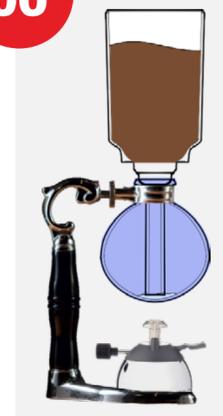
Let Upper Reservoir Fill

05



Add Coffee

06



Remove Heat

07



Vacuum Filter

08



## POUR AND ENJOY

As the coffee sits in the lower reservoir the burner can be adjusted to keep the coffee warm or cool.



**CAMPFIRE POWERED**



**COLEMAN BRAND  
LANGUAGE**



**PORTABLE**



**DURABLE**



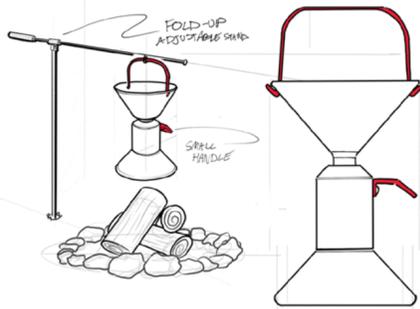
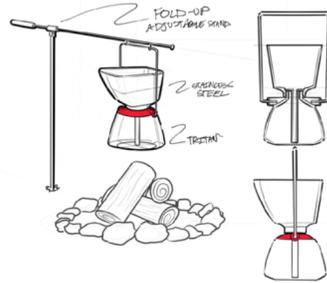
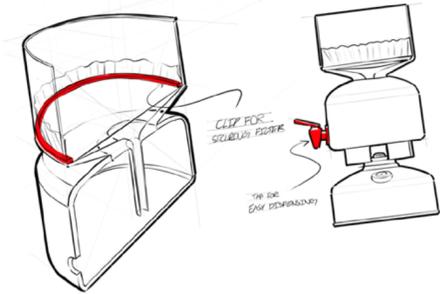
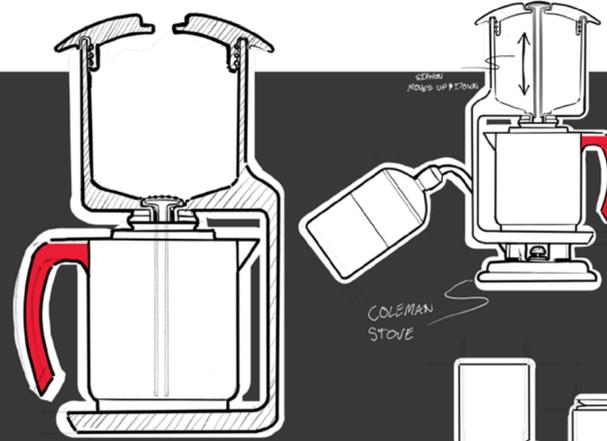
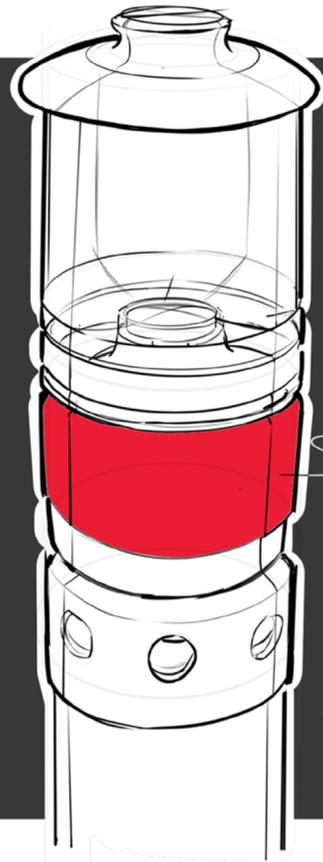
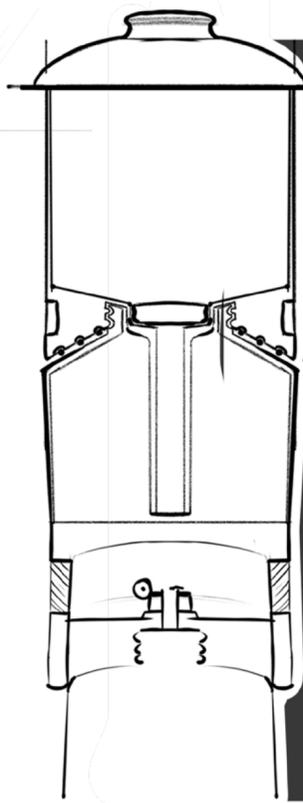
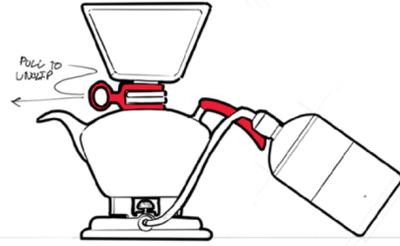
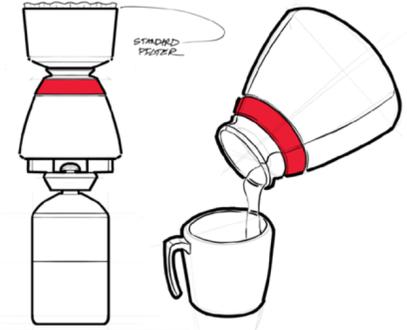
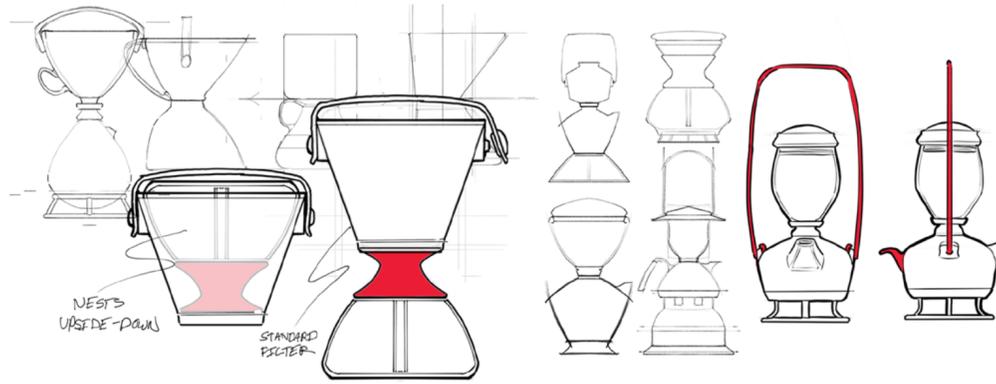
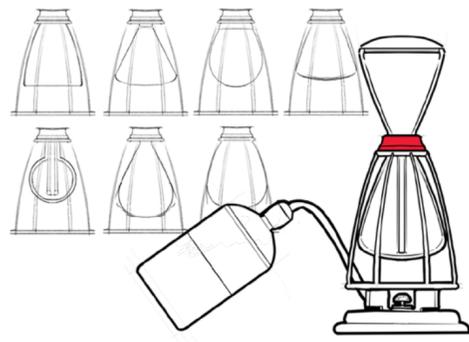
**4-6 CUP CAPACITY**



**DESIGN CRITERIA**

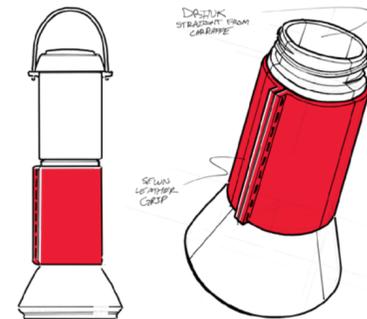
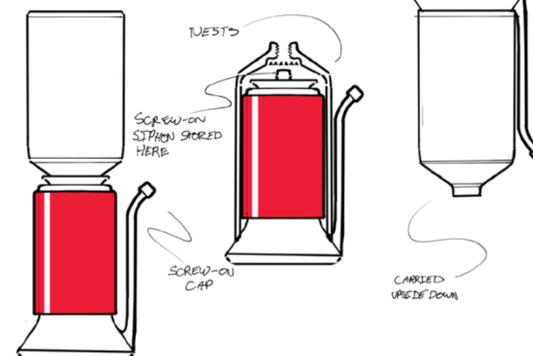
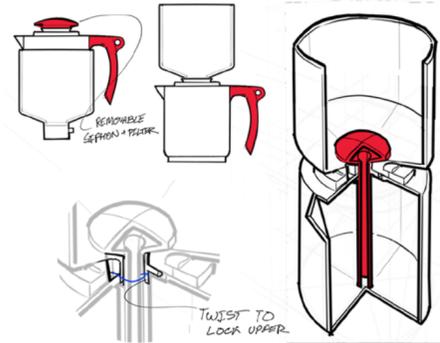
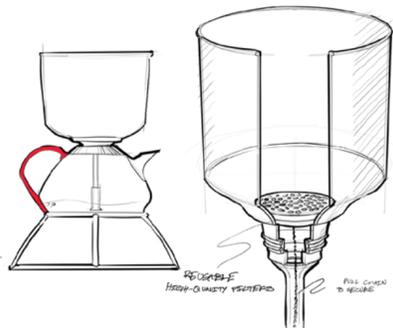
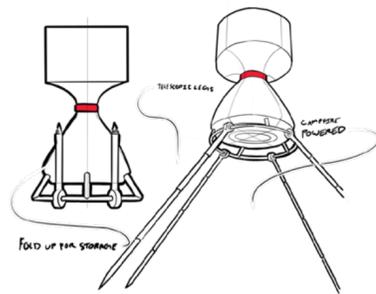
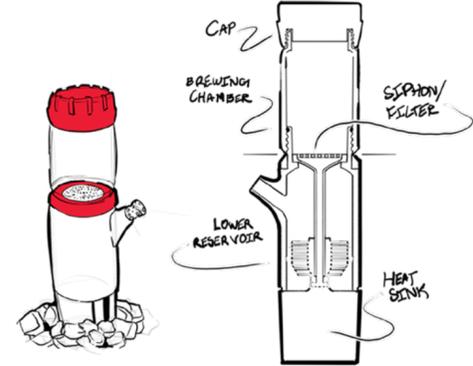
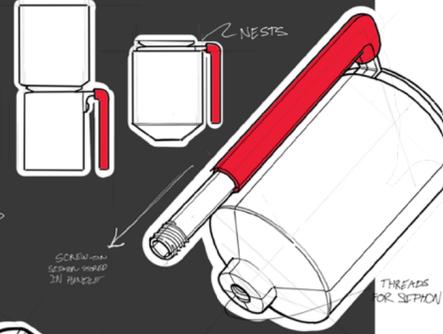
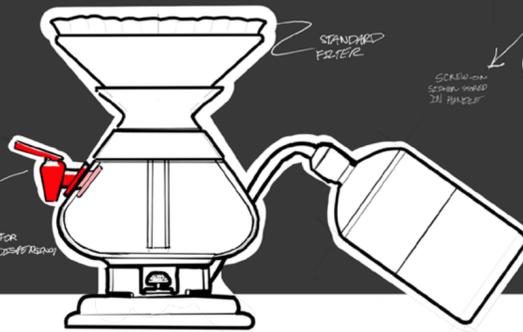
**STANDARD FILTER**





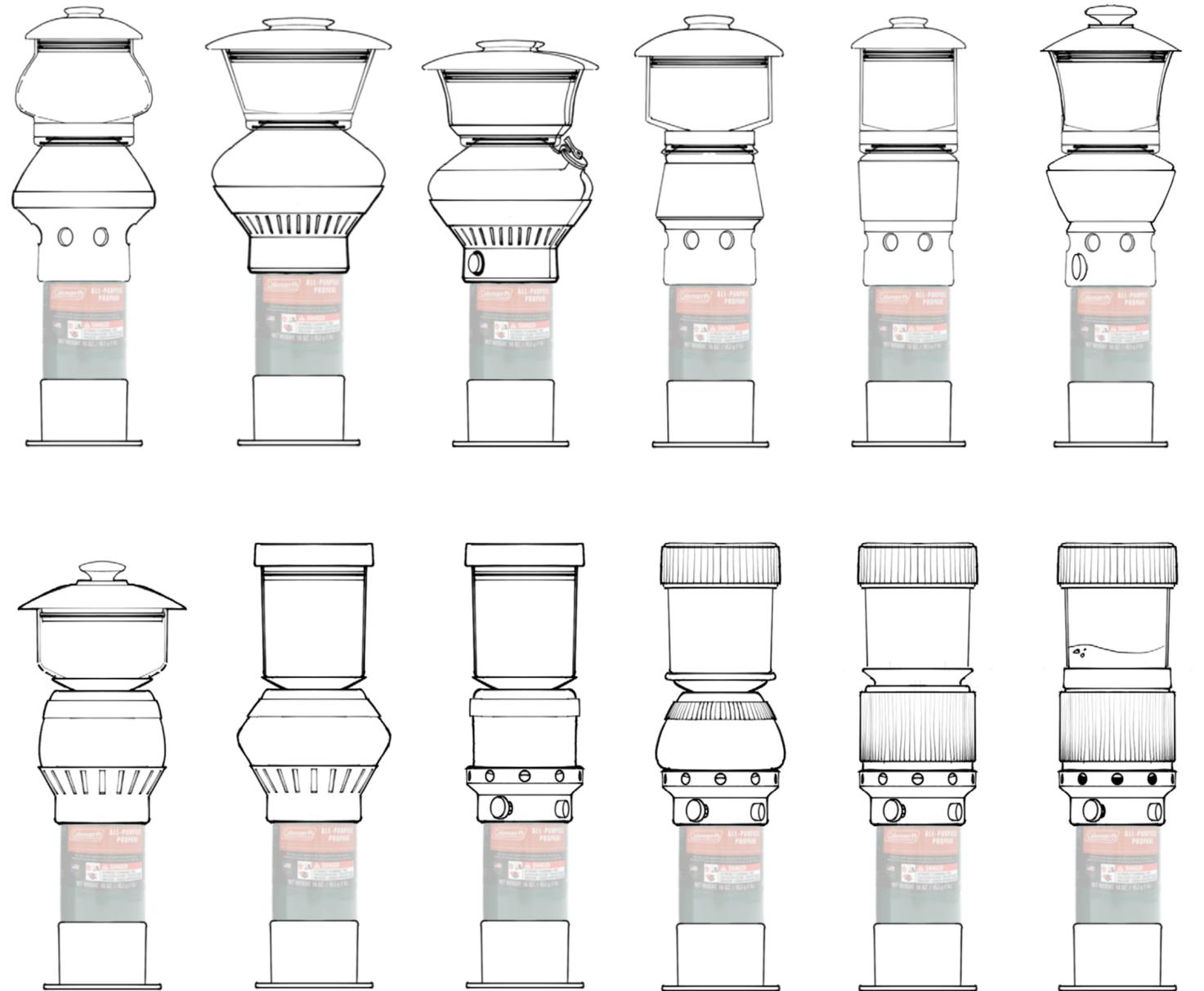
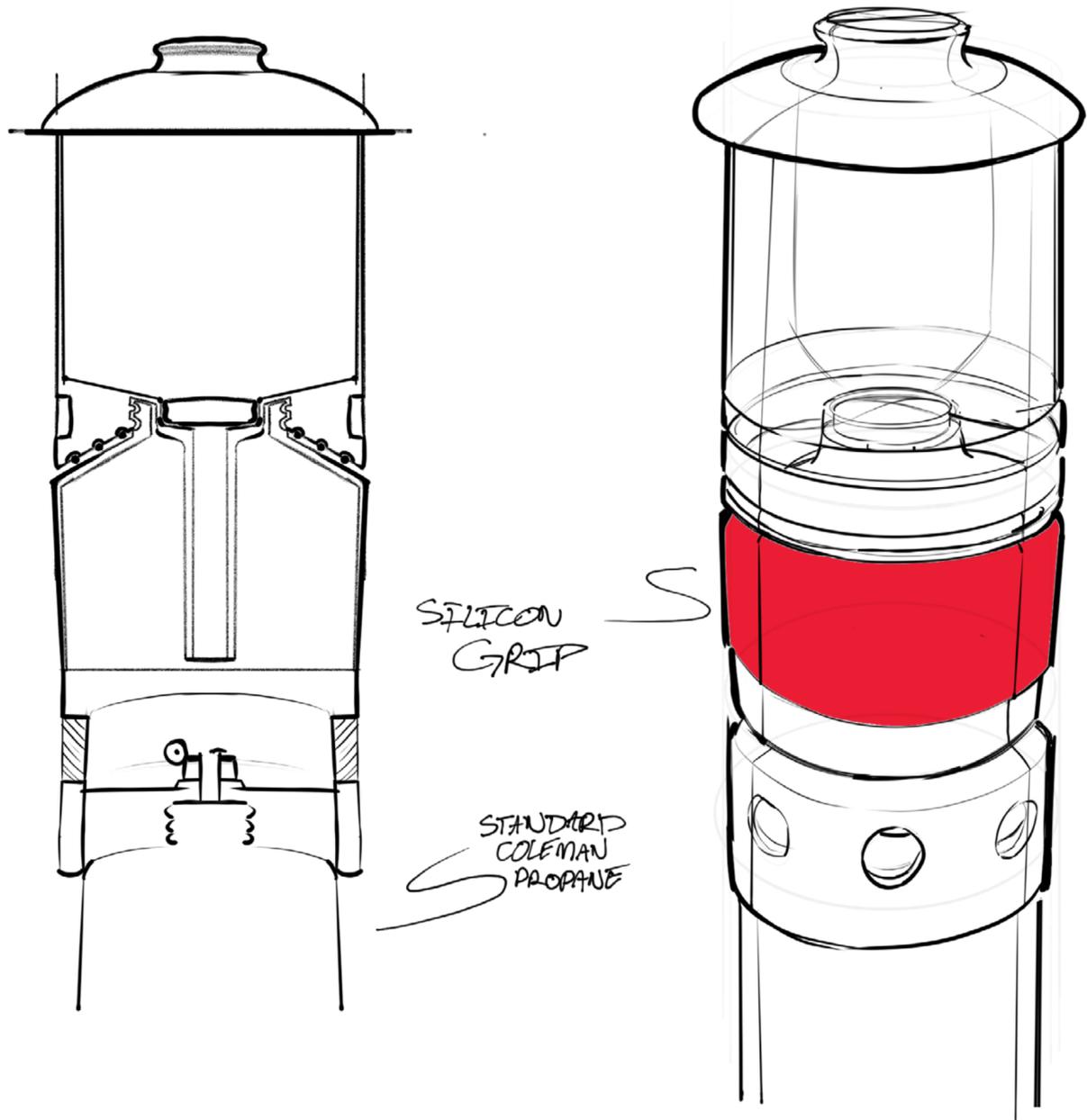
SILICON GRIP

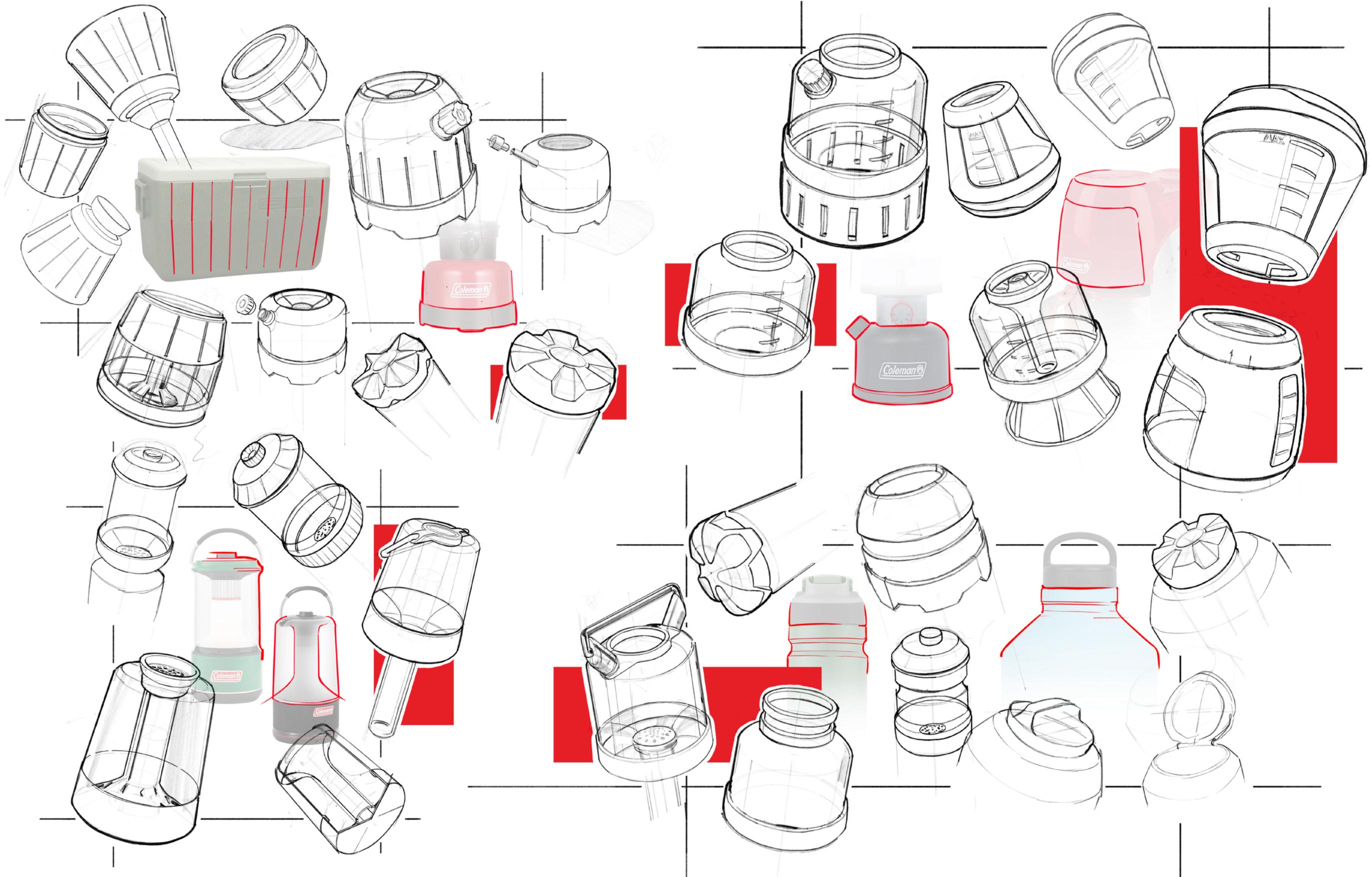
STANDARD COLEMAN PROPANE



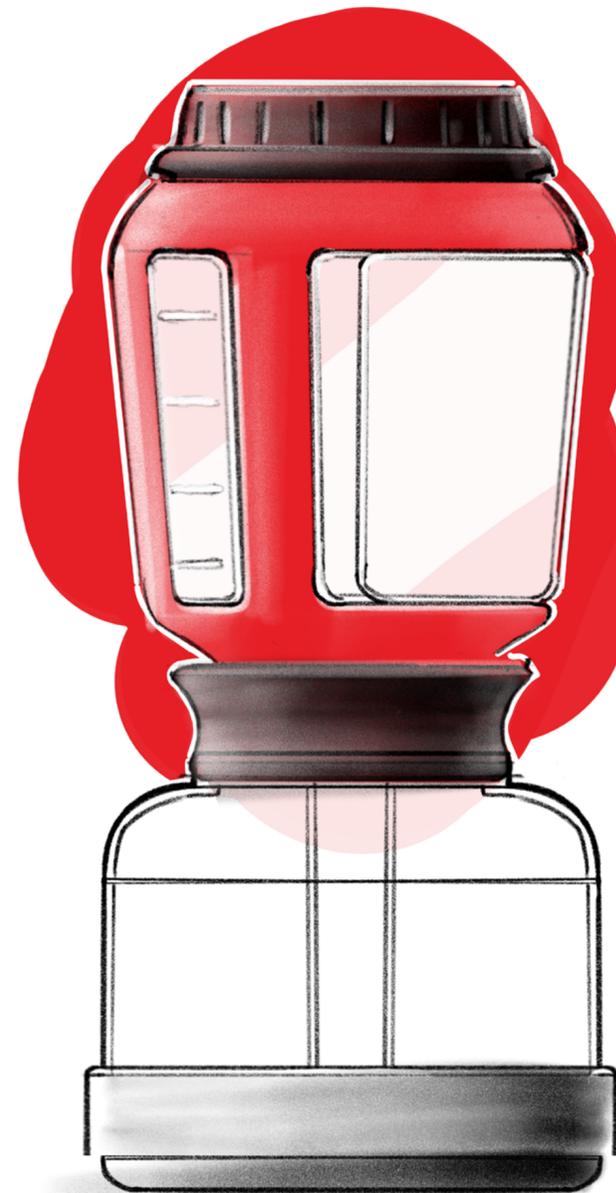
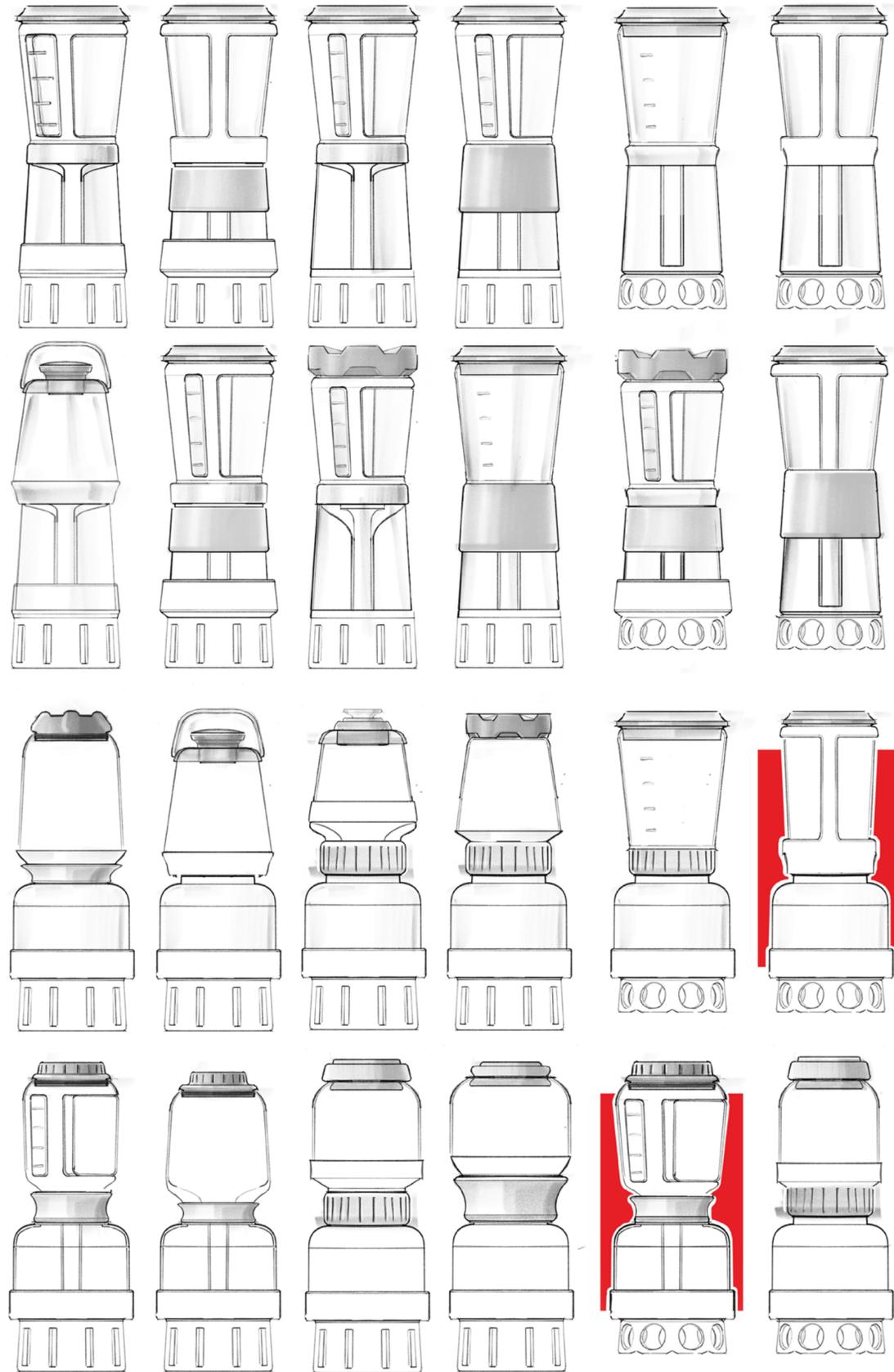
# IDEATION

A portable, stovetop coffee maker for 1-4 serious campers



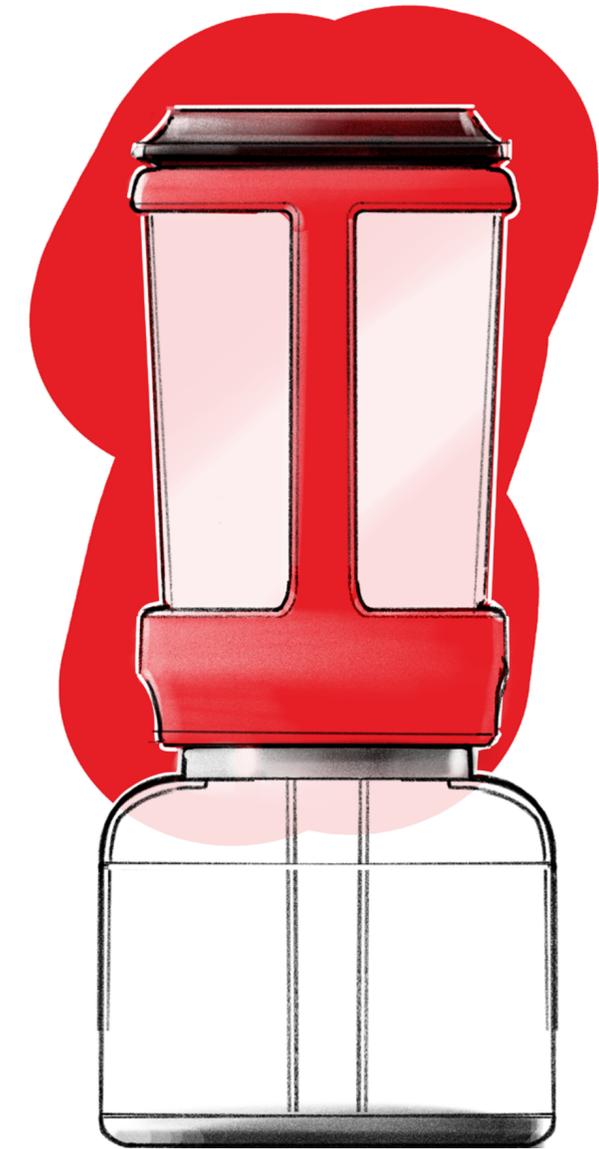


# FORM ITERATION



## FORM ONE

- Screw on lid
- Three parts
- Metal base

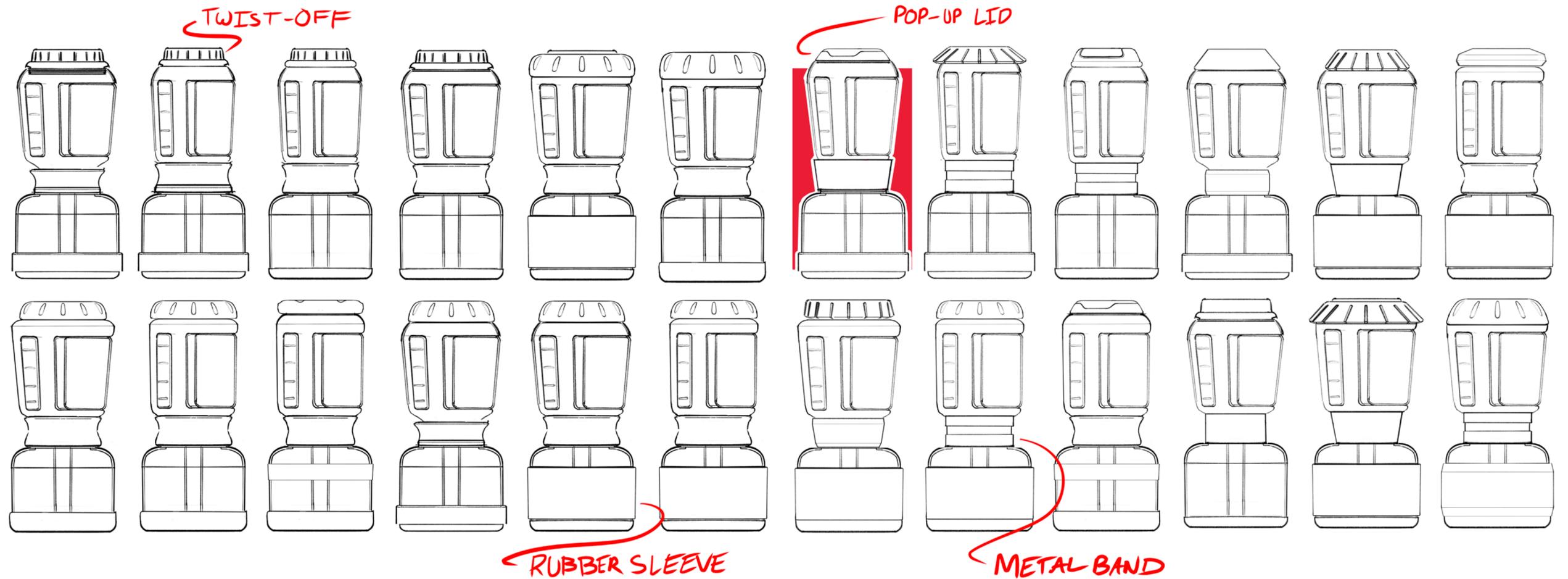


## FORM TWO

- Pop off lid
- Two parts
- Small metal ring on base

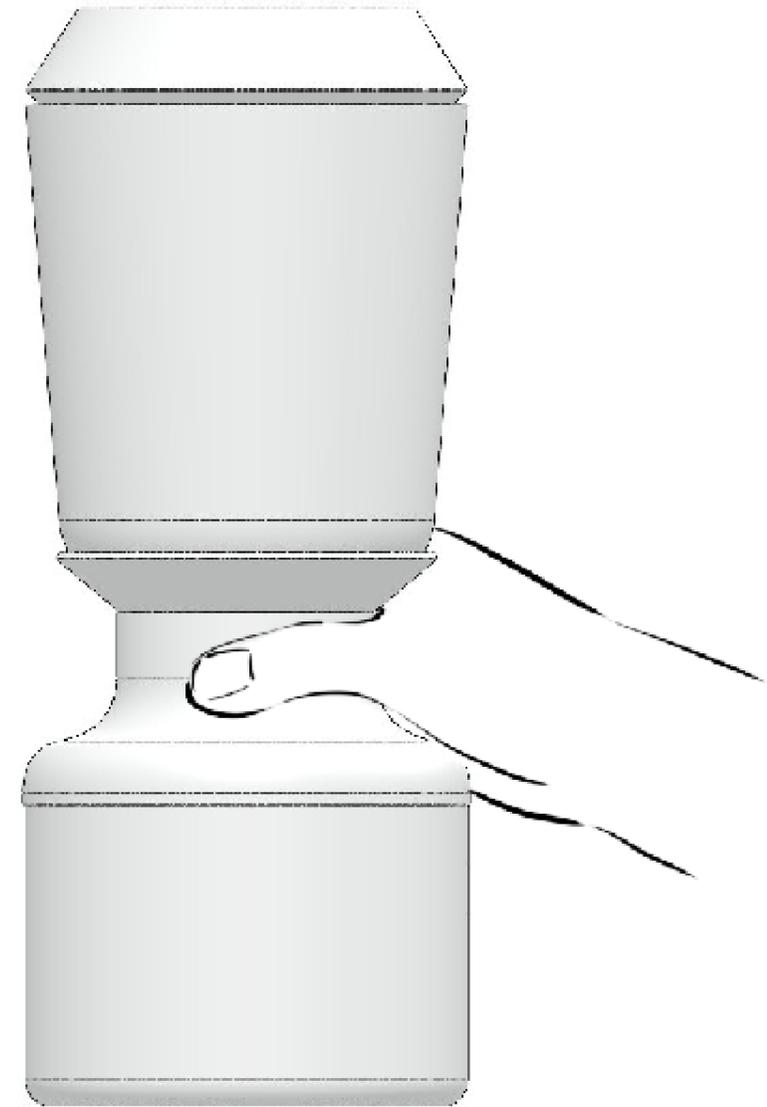
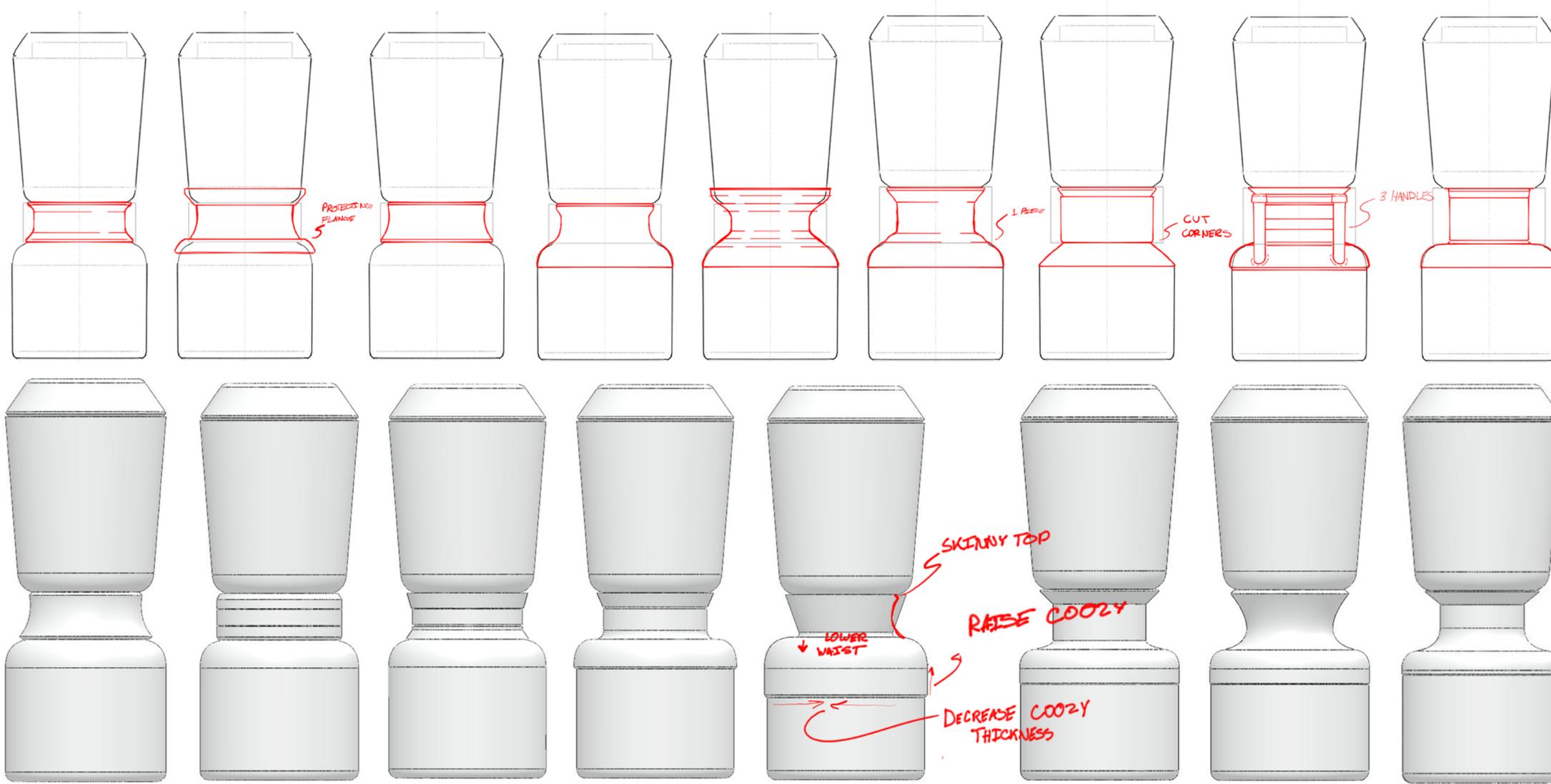
# FORM DEVELOPMENT

After deciding on the first form I experimented with proportions and features in order to finalize a form that could be sculpted in HDU foam

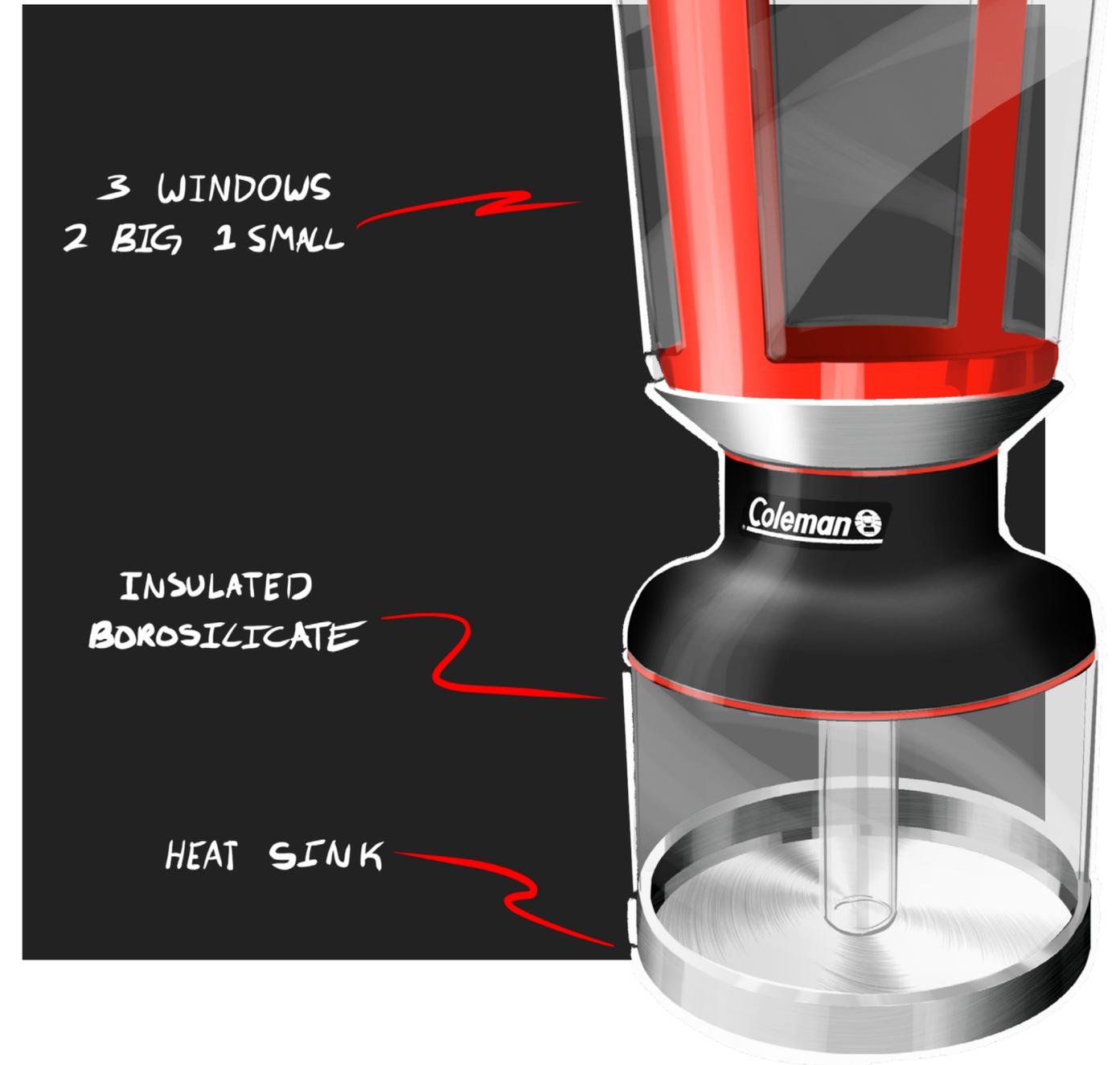
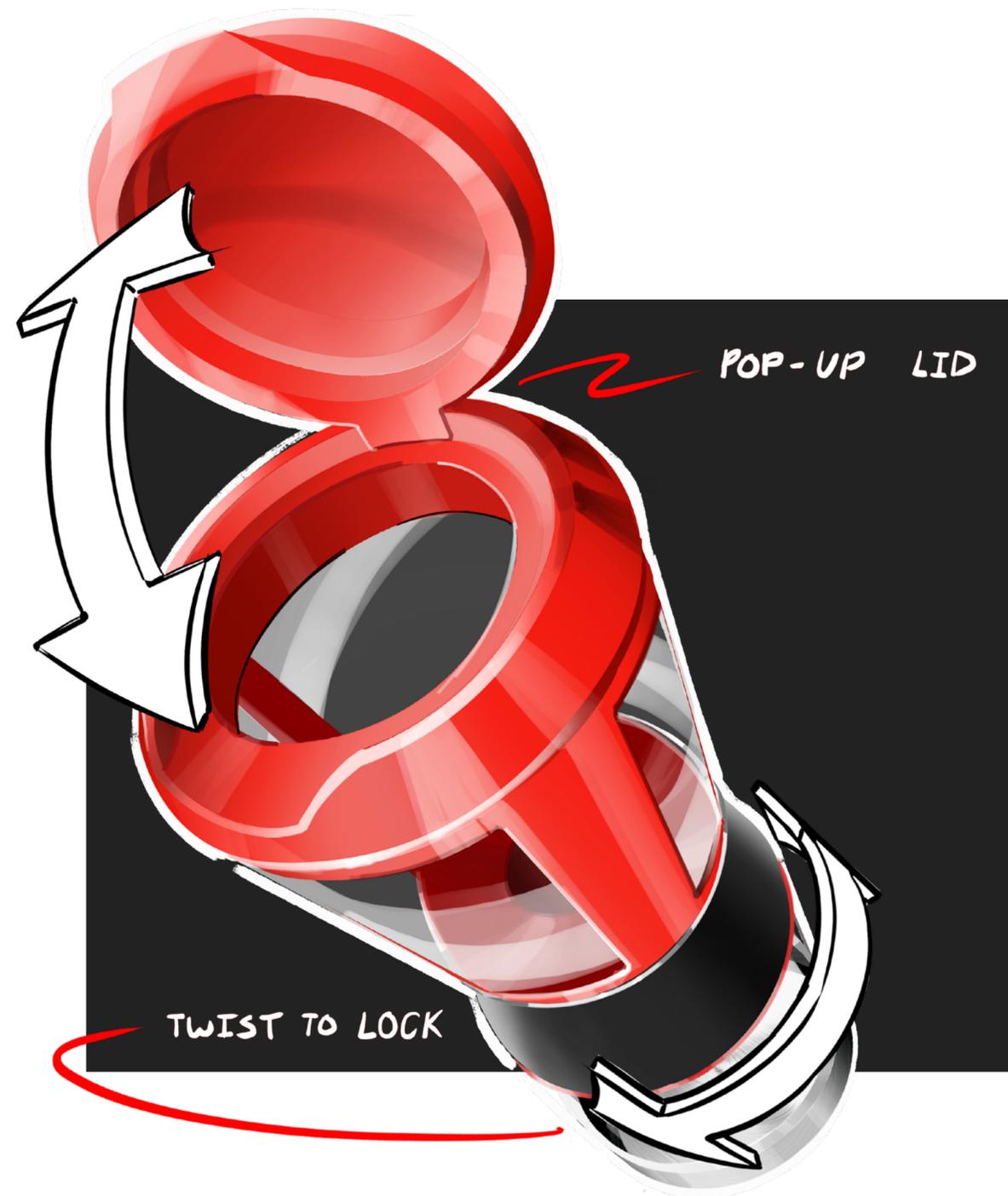


# HANDLE REFINEMENT

I refined the handle by switching between solidworks and ideating in photoshop using overlays, trying to follow the general form of similar handles like cork pourover carafe handles and large handle-less water bottle.



**Coleman** **SIPHONBREW** FINAL CONCEPT SKETCH  
Adobe Photoshop





LID

BREWING  
CHAMBER

SLEEVE

CARAFE



**SIPHONBREW**

A Portable, Stovetop Siphon Coffee Maker for 1-4 Campers

# PREP

01



*Insert filter into brewing chamber*

02



*Use the scoop to hook the elastic to the bottom of the siphon*

03



*Screw on lid*

04



*Add desired amount of water to carafe*

05



*slot brewing chamber notches into the carafe*

06



*Twist to lock*

# BREWING

01



Turn on Heat

02



Wait until all water has left the carafe

03



Add one scoop of grounds per 5 oz of water

04



Stir grounds

05



Wait 2 mins per 5 oz of coffee

06



Turn off Heat

07



Let coffee siphon through filter

08



Remove brewing chamber and let cool

09



Pour and enjoy



## NEXT STEPS...

---

01

Add feature to brewing chamber that keeps the end of the siphon off the ground when removed

02

Add intrigue to more static forms like the neck of the carafe

03

Refine graphics - Add Siphon brew logo, add texture to labels, refine fill level indicators

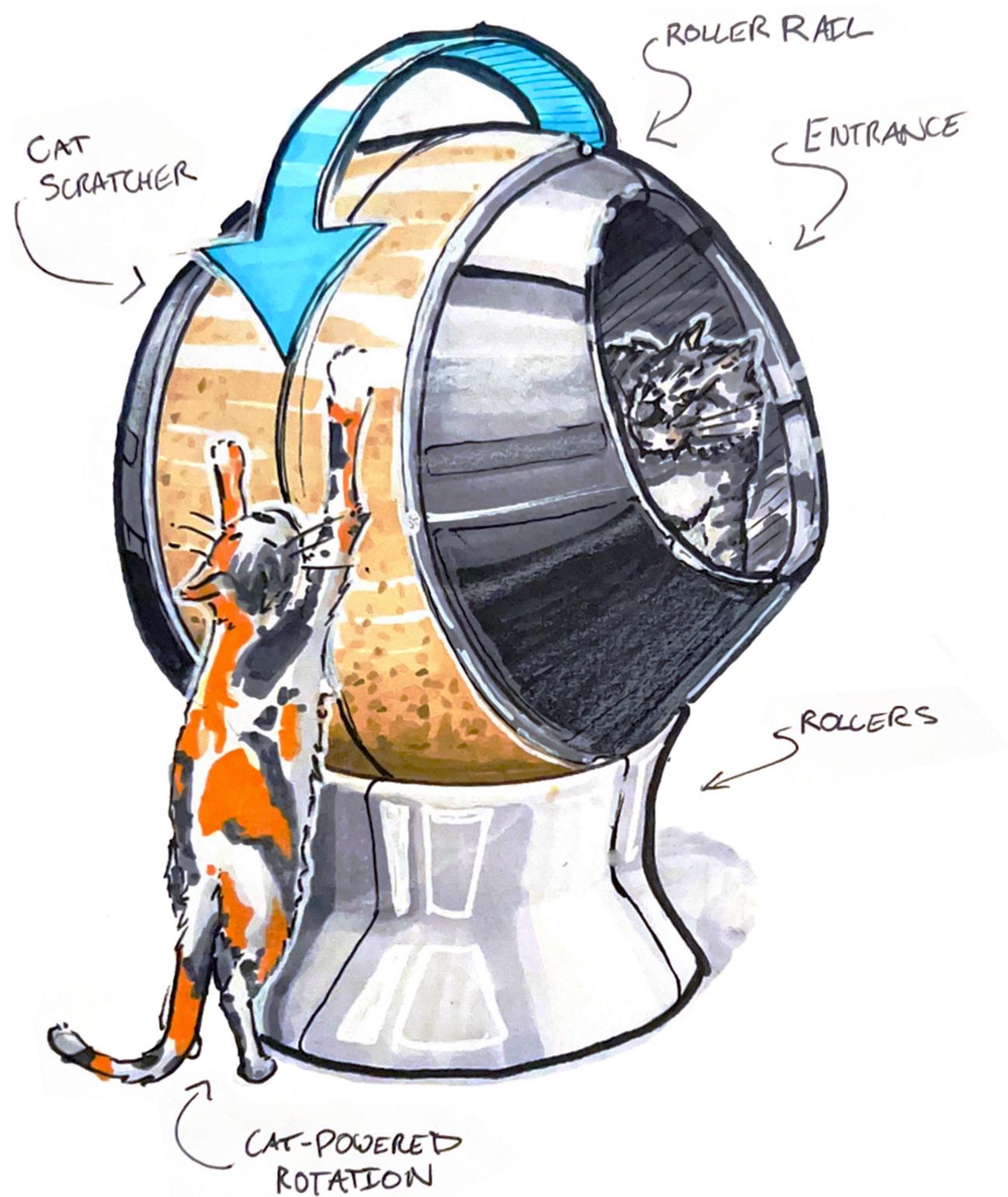




# LITTER-ROC

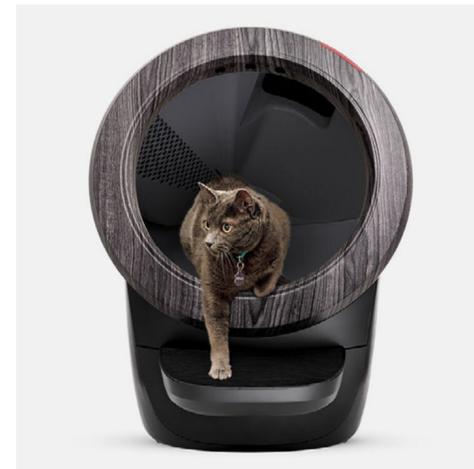
A manual solution to automatic litter filtering

2025 - 8 Weeks



How Might We....

# Improve the hygiene of the cat litter cleaning process?



Litter Robot 4  
\$699 !!!

Current solution



## Can we make self cleaning litter boxes more accessible?

# Research Methods



## Interviews

3 Interviews from 3 different types of cat owners



## Observation

Observed the litter process for multiple types of litter boxes



## Secondary Data Review

Collected insights from Reddit, Youtube, and Amazon

## Example of Interview



Mykaila

23, Female - 43 minute Zoom interview



Mau Mau

- **House** - Small apartment
- **Cat** - Young kitten that is learning
- **Food** - Auto wet food feeder
- **Water** - Gravity water bowl
  
- **Litter Box** - Petmate Giant Litter Pan
- **Litter Brand** - Tofu Litter
- **Location** - Living room
- **Cleaning Frequency** - Every-other day

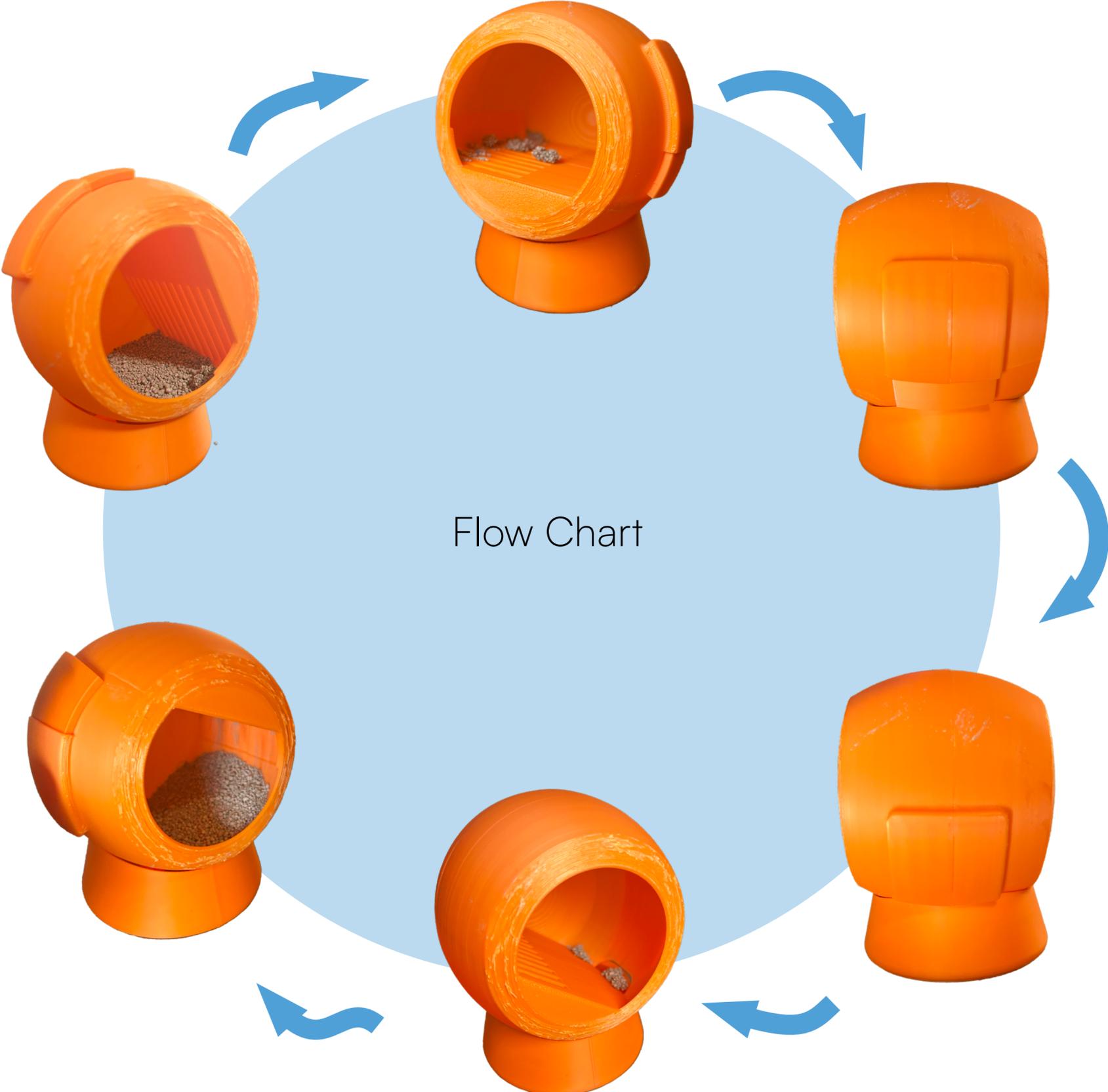
### Needs

- Price ( willing to pay < \$200)
- Aesthetics (wants it to blend in)
- Safety
- Odor leaking

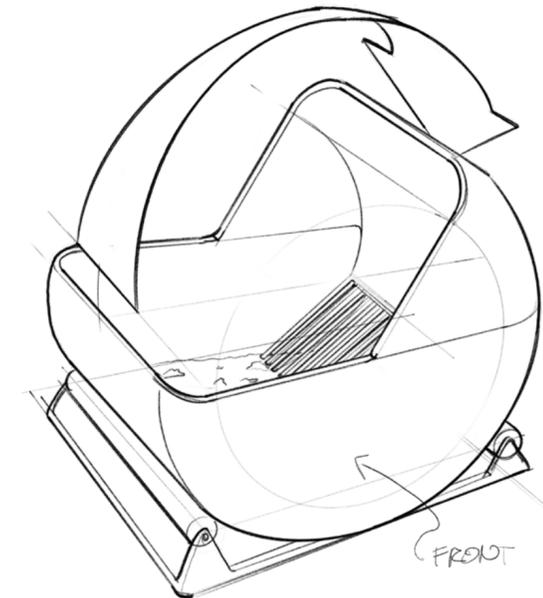
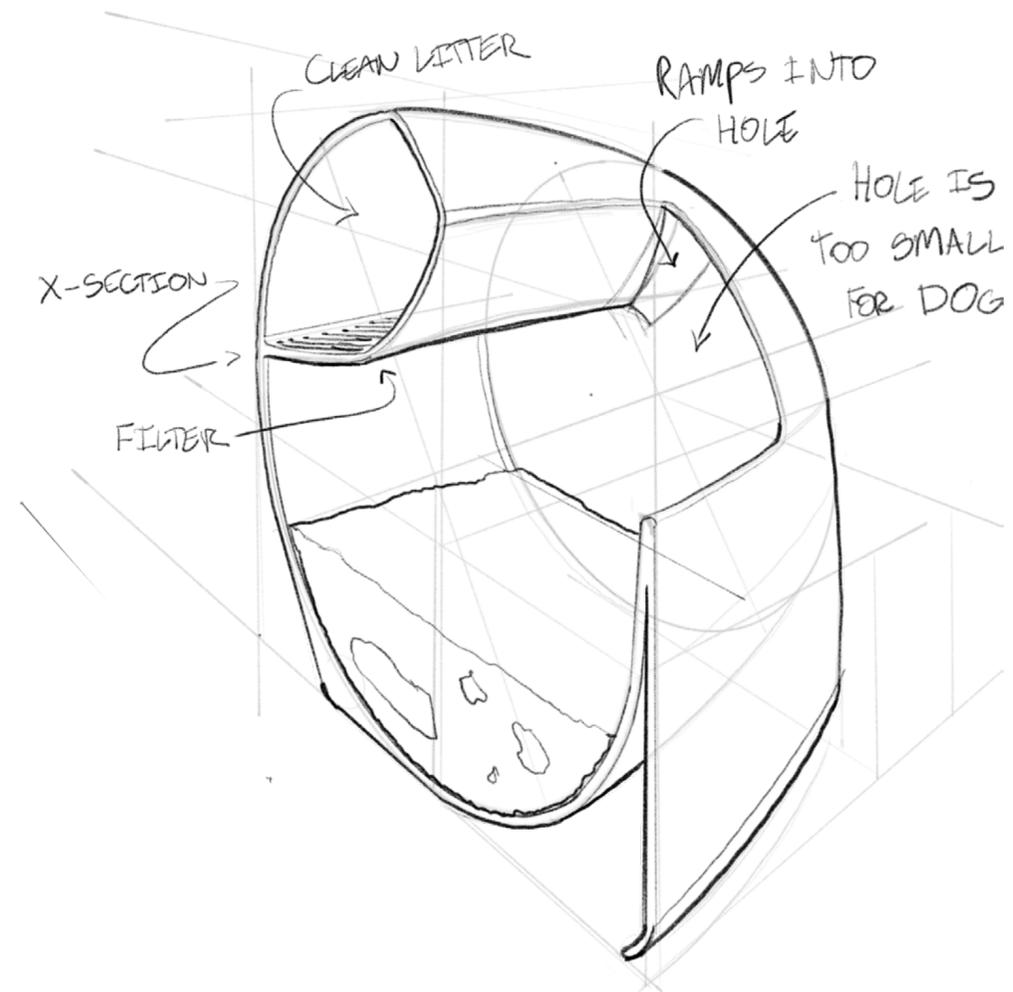
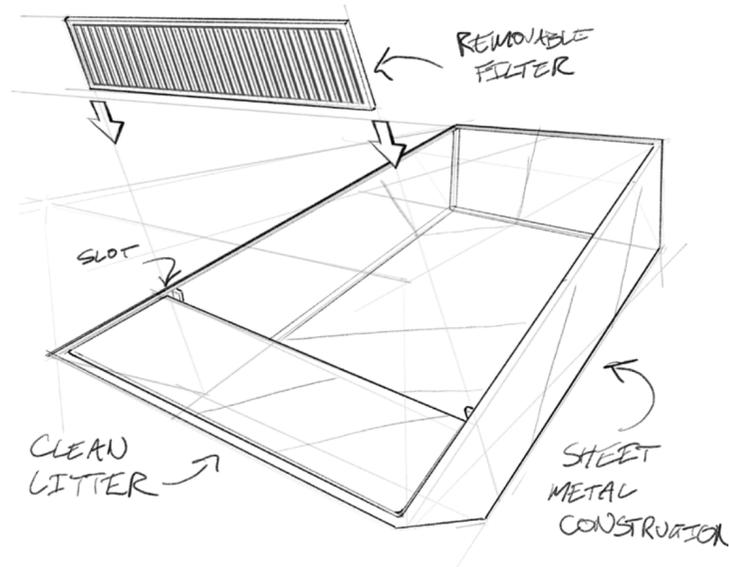
# Proof of Concept



The best way to learn how something works is to build it







1

## Super Simple

Simple, sheet metal tray style litter box with a removable filter for cleaning

### Pros

- Simple
- Clean
- Cheap

### Cons

- No odor reduction
- Not dog-proof
- Needs bag

2

## No Moving Parts

A one-piece plastic box that filters by rolling onto its back.

### Pros

- Cheap
- Enclosed
- Simple

### Cons

- Plastic (odor)
- Complex manufacturing
- Needs bag

3

## Complex and Effective

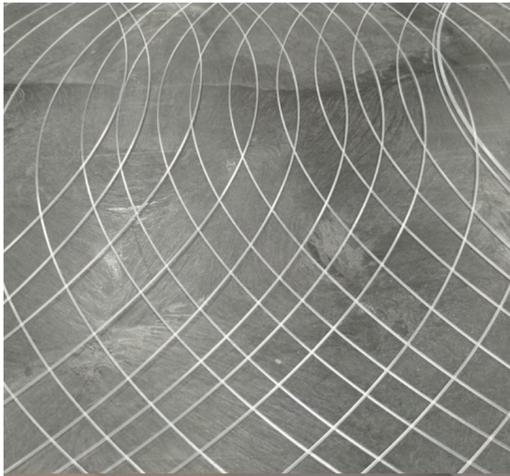
Similar to electric litter boxes. Uses rollers to easily filter litter.

### Pros

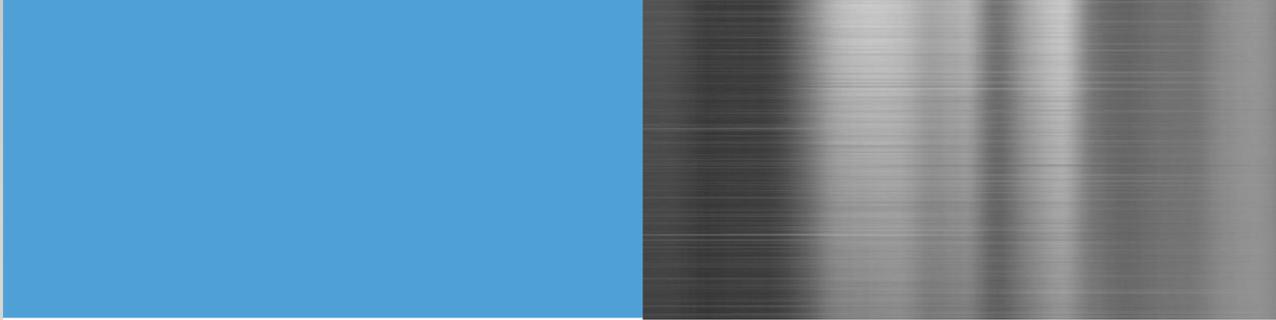
- Easy to Maintain
- Enclosed
- Simple

### Cons

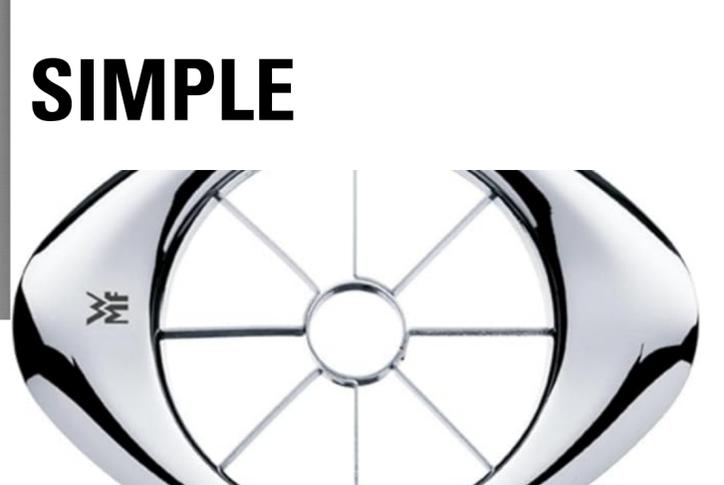
- Unbalanced
- Many parts
- Not dog proof



**MACHINED**



**PRECISE**

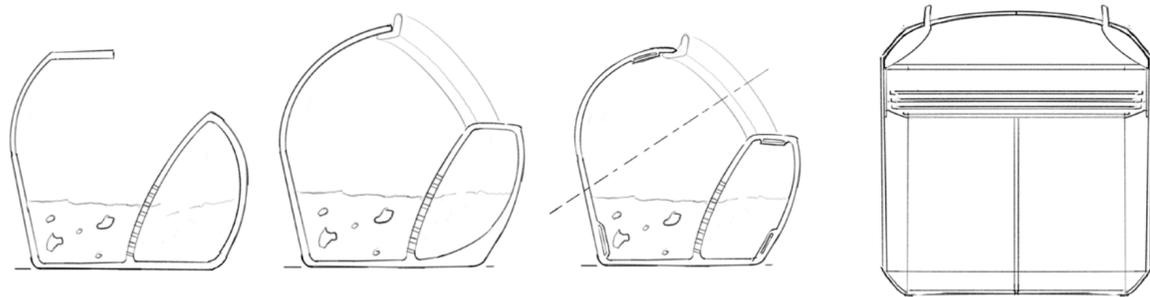
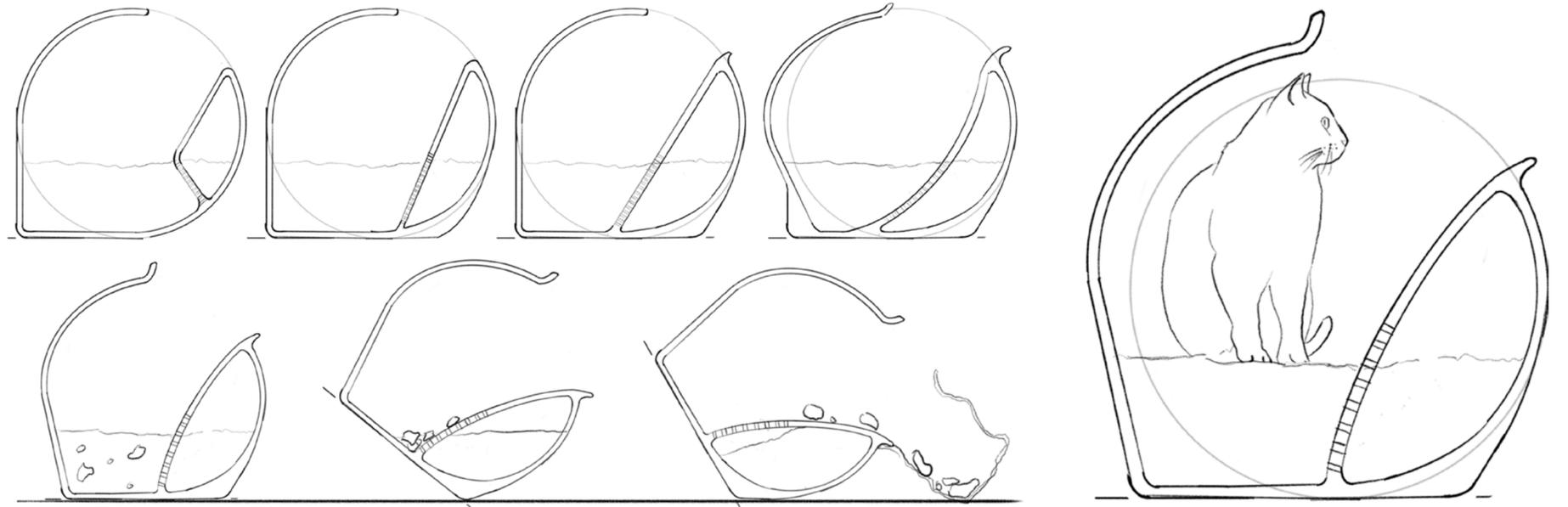


**SIMPLE**

# Form Development

## Profile Experimentation

How do we balance the total space inside with the size of the clean litter trap, while minimizing the tipping angle?



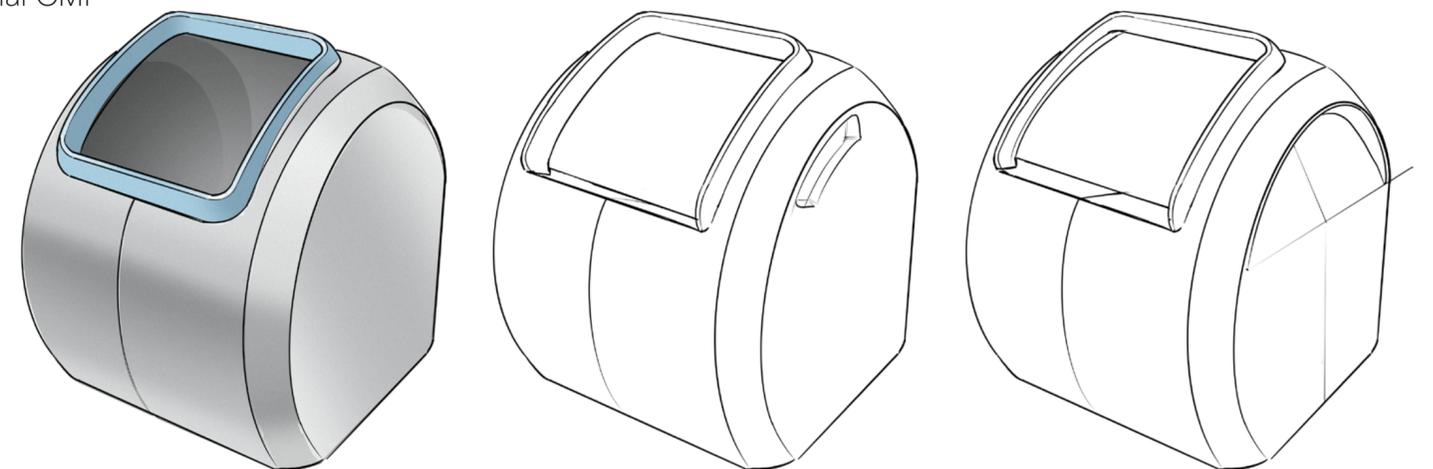
## Plastic Insert

Could a plastic part both combine the two halves and direct the litter effectively?

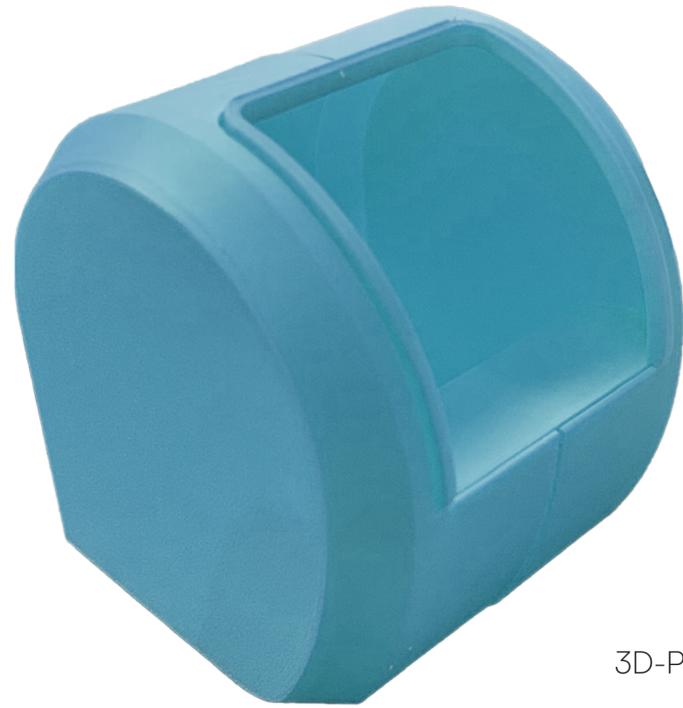
## Handles

How can we add handles without puncturing the shell to contain the odor?

Potential CMF render



## Issues with initial form:



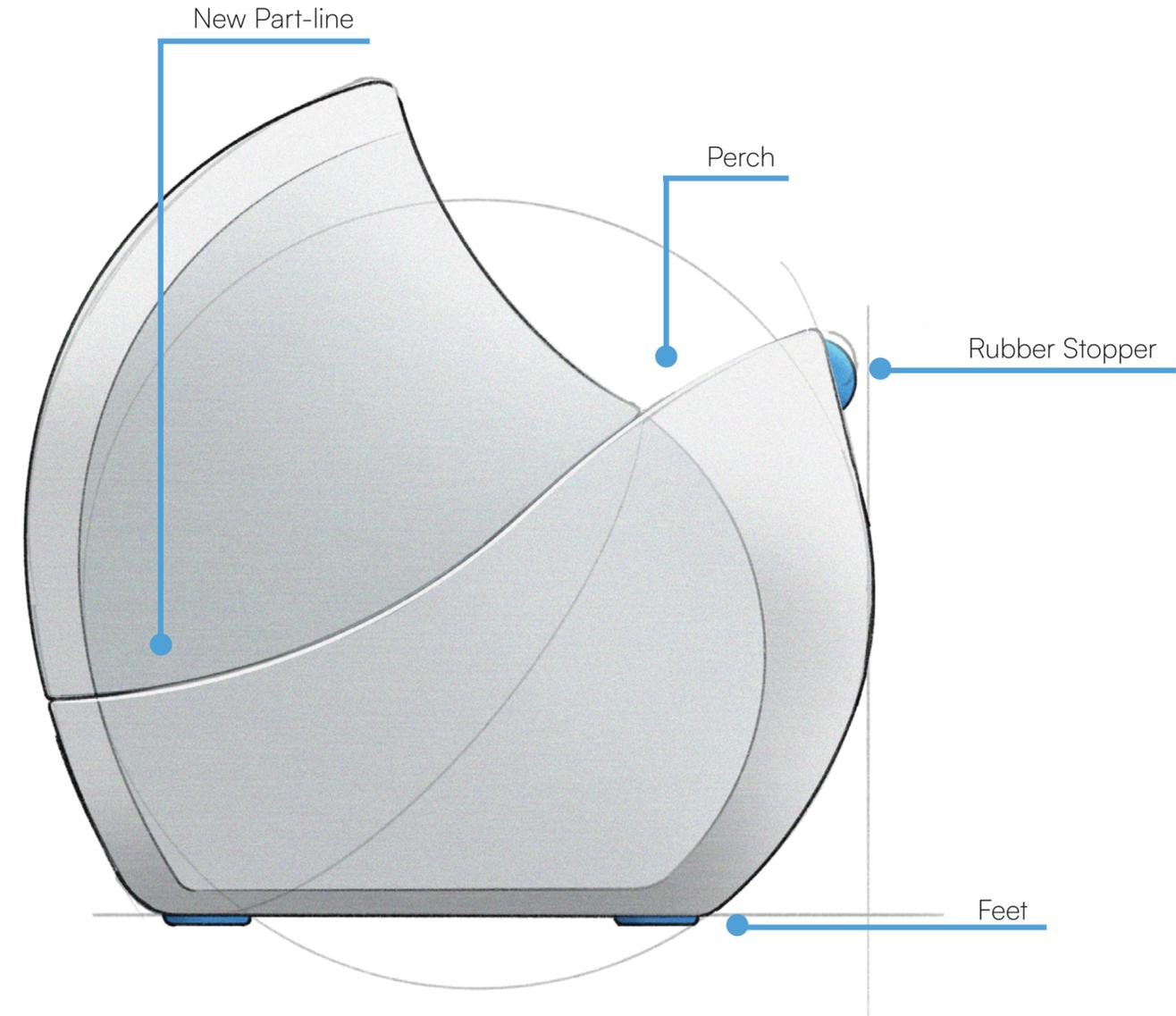
3D-Print

- The opening is too low to the ground when pouring
- Cats may hesitate when entering, as they can't see in before they enter
- The sagittal part line would cause the litter box to rock back and forth due to draft angles

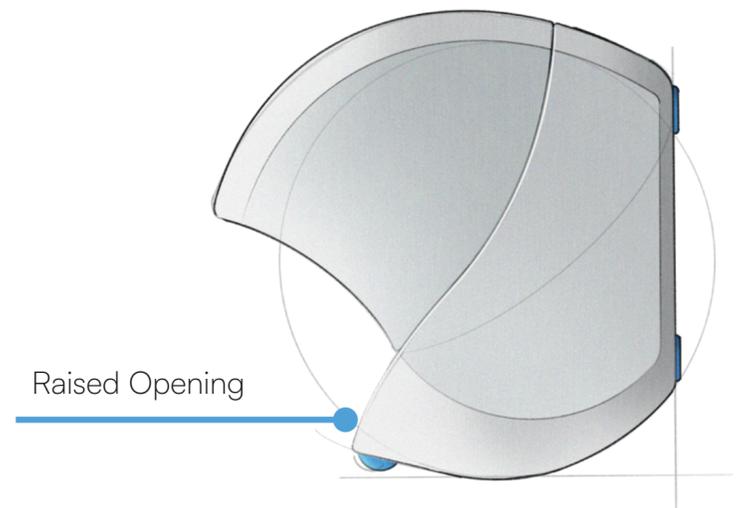
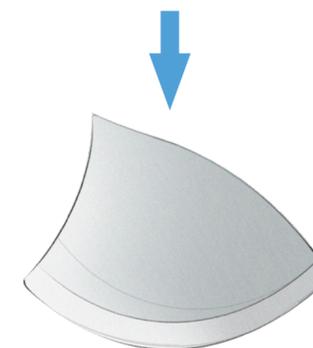
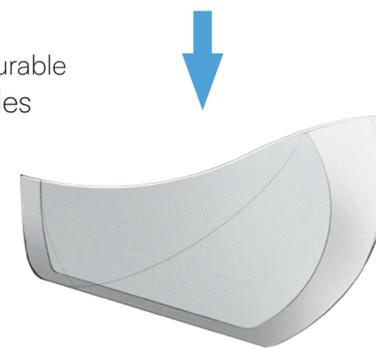


Further form development

## Solution:



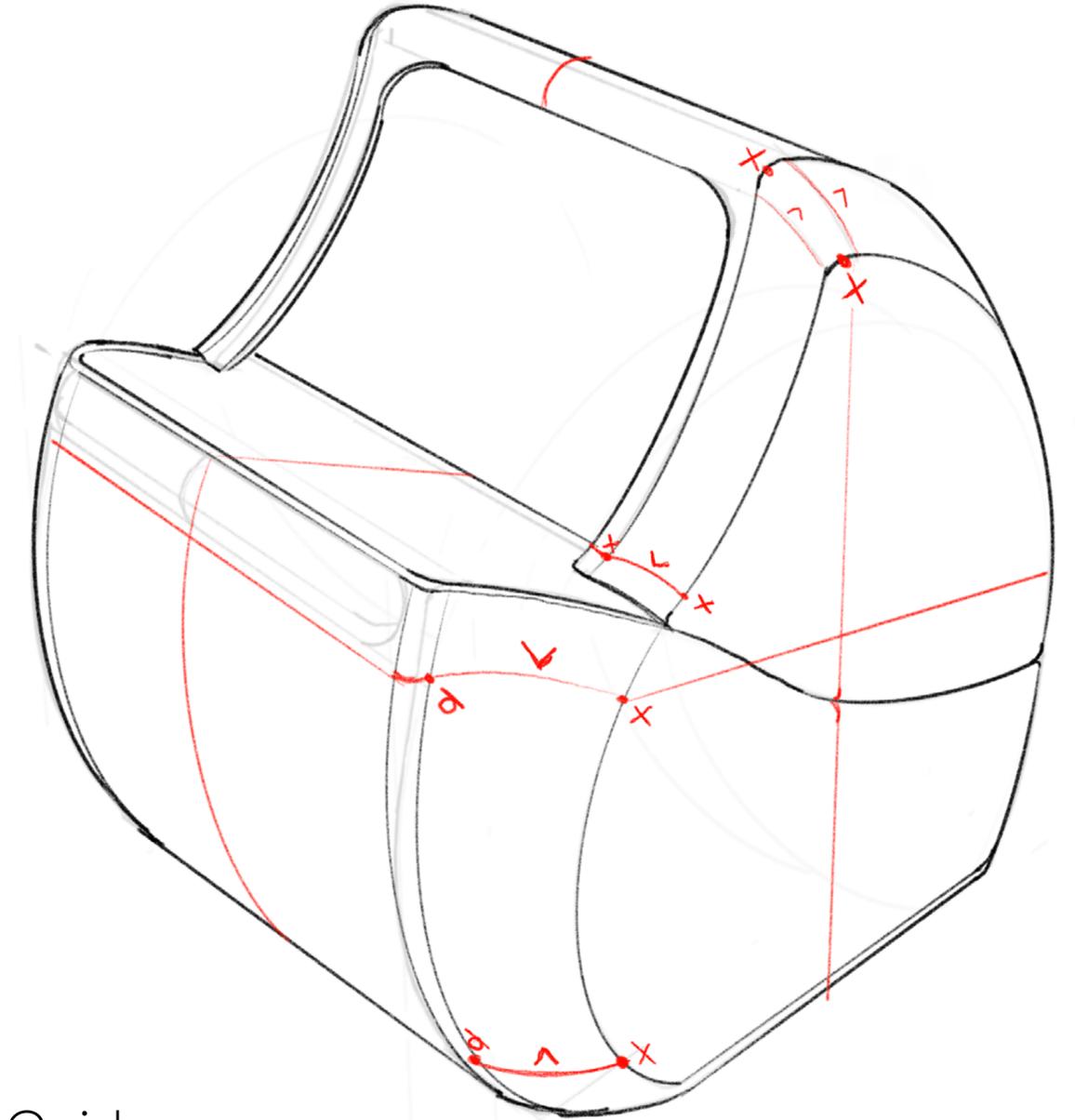
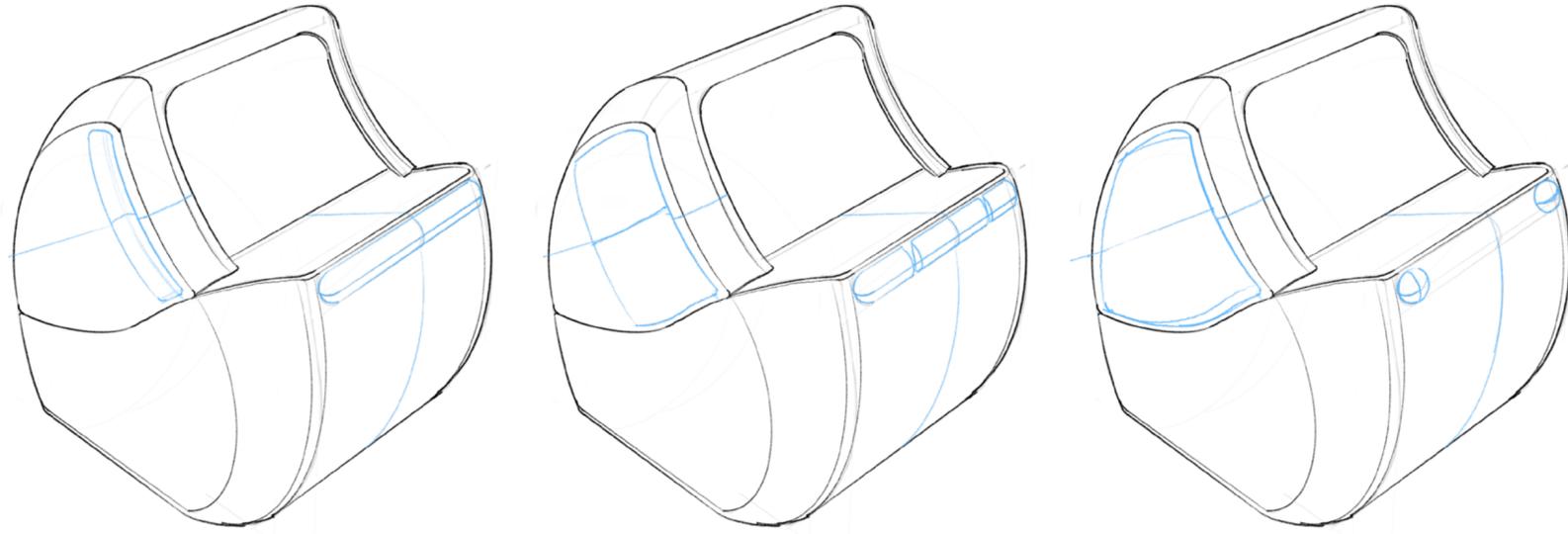
Manufacturable draft angles



# Further Refinement

## Details

Experimented with different handles and bumpers



## Surfacing Guide

Before transferring the sketch into CAD, I set myself up for success by verifying that the surfaces can work together in 3d



Tangent



Crease

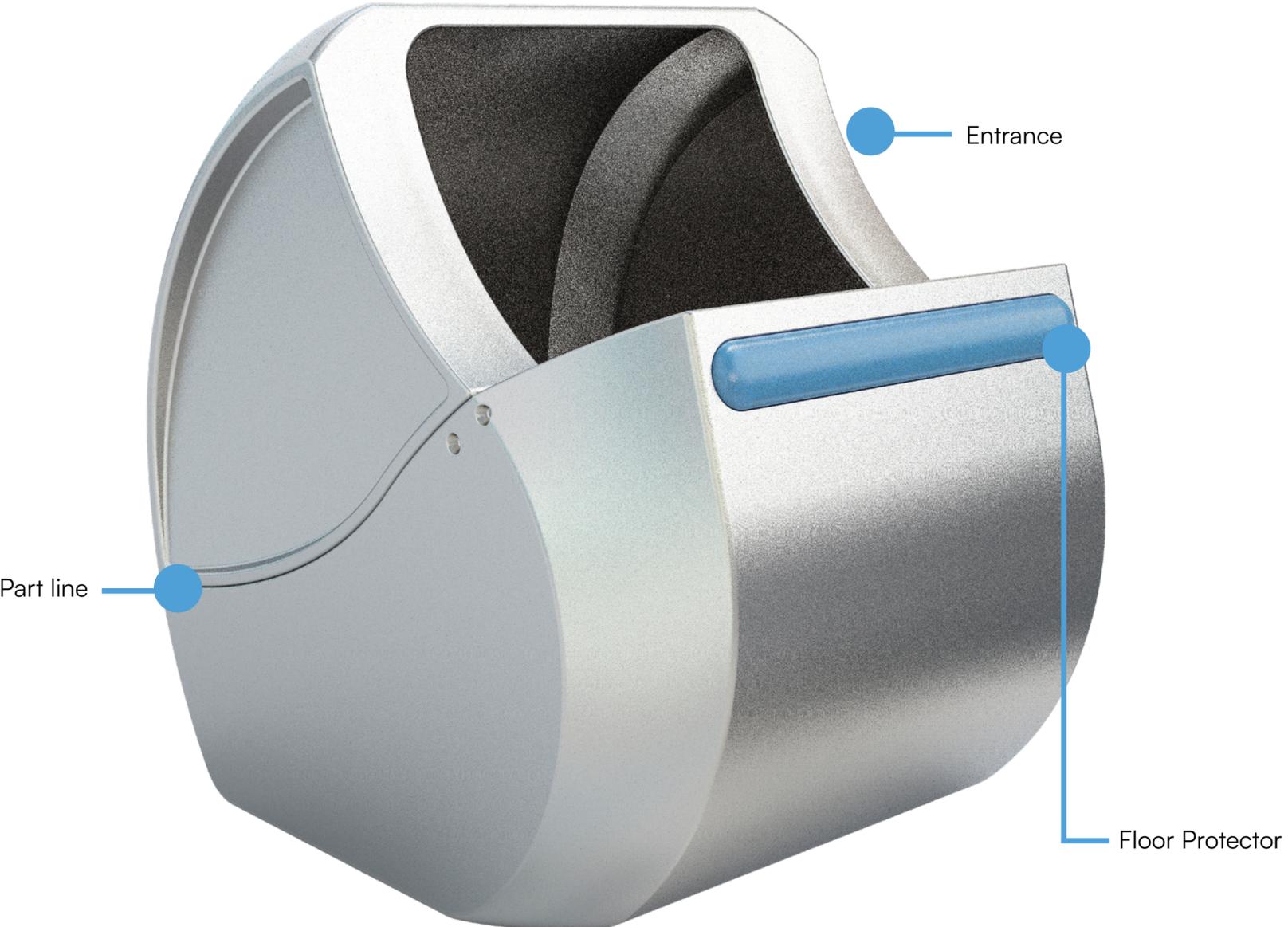


Convex



Concave

# Final CAD Model



Front



Side

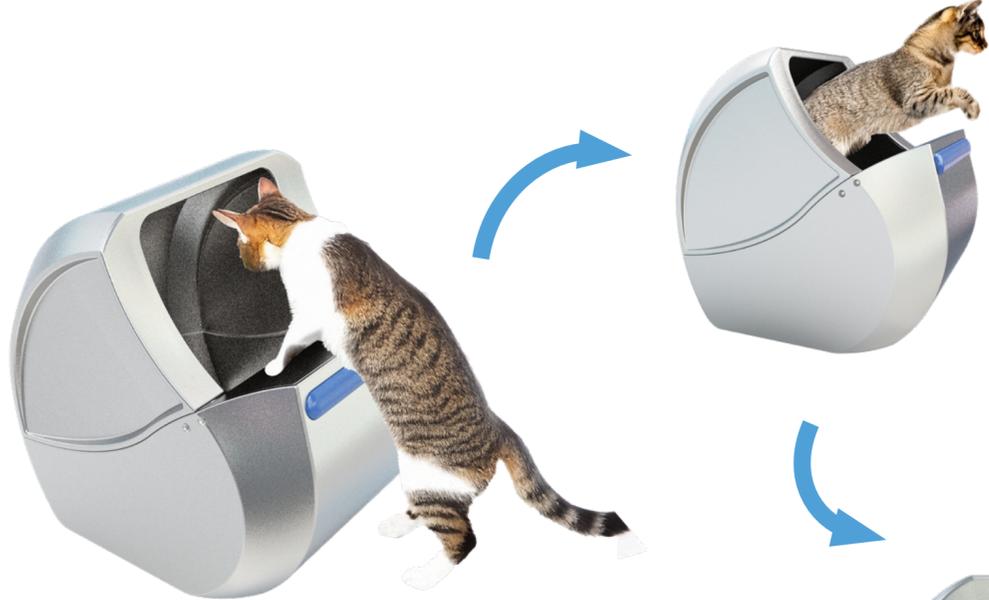


Bottom



Back

# Instructions for Use



Cat enters litter box

Front platform serves as a perch for landing visibility

Cat exits litter box

Jumping lessens possibility of litter tracking



Place bag over opening

Hold a bag of your choice over the opening as you grip the side handles

Filtering

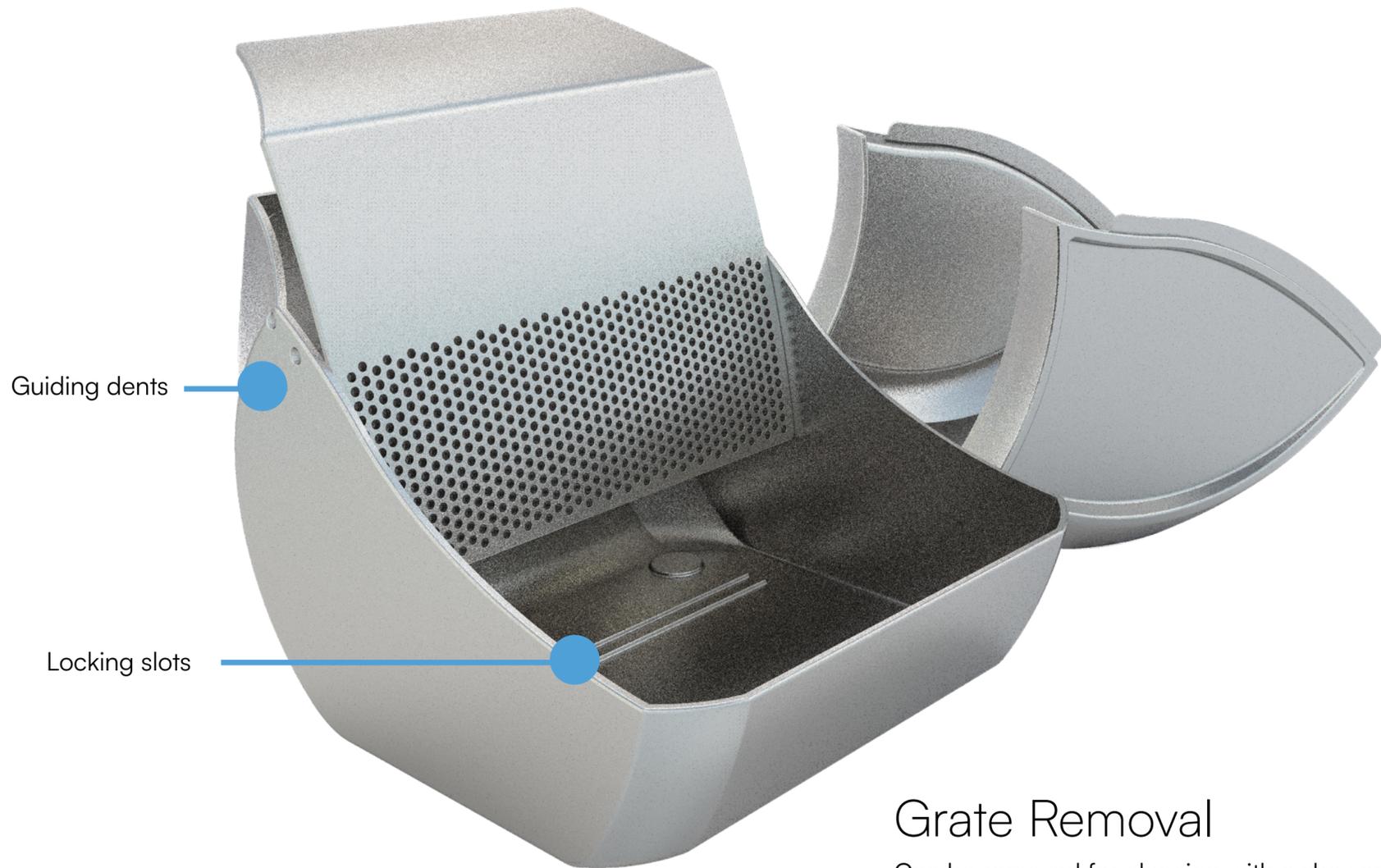


Litter sits unfiltered

Clean litter enters trap as the box is tipped

When past 90 degrees, used litter falls into the bag

# Disassembly



## Grate Removal

Can be removed for cleaning with a shower head or

Held in place by friction



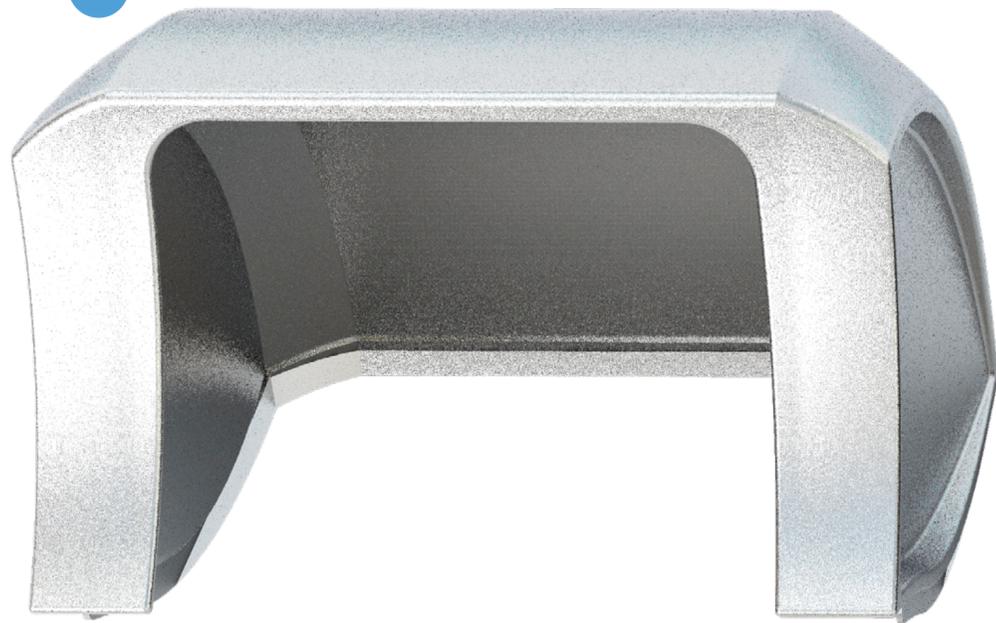
## Lid Removal

Removable for transport, cleaning, or open-top use

# Manufacturing

## Lid

It can be stamped out of sheet metal in three stages. First, the main shape, then the connecting lip, and finally the side handle indents.



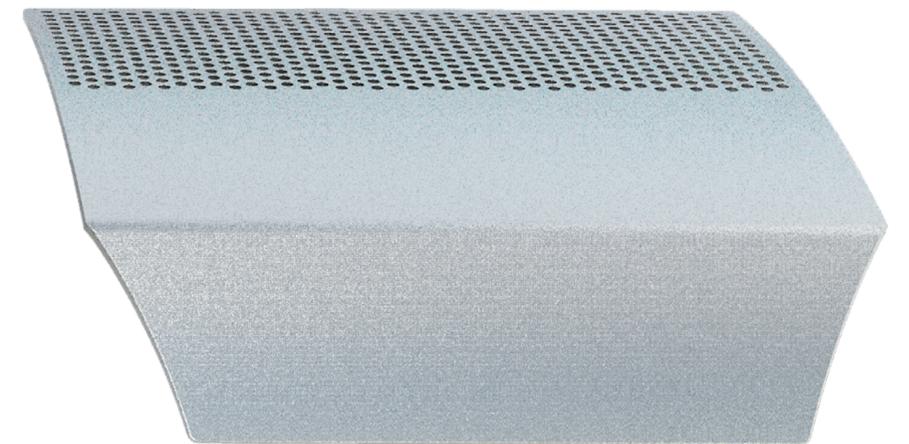
## Base

It is first stamped into the main shape, similarly to a metal bowl. Then, cavities for the four feet and the stopper are punched out along with the guides for the grate.



## Grate

Metal holes are laser cut in a single piece of sheet metal, which is then bent once using a brake.



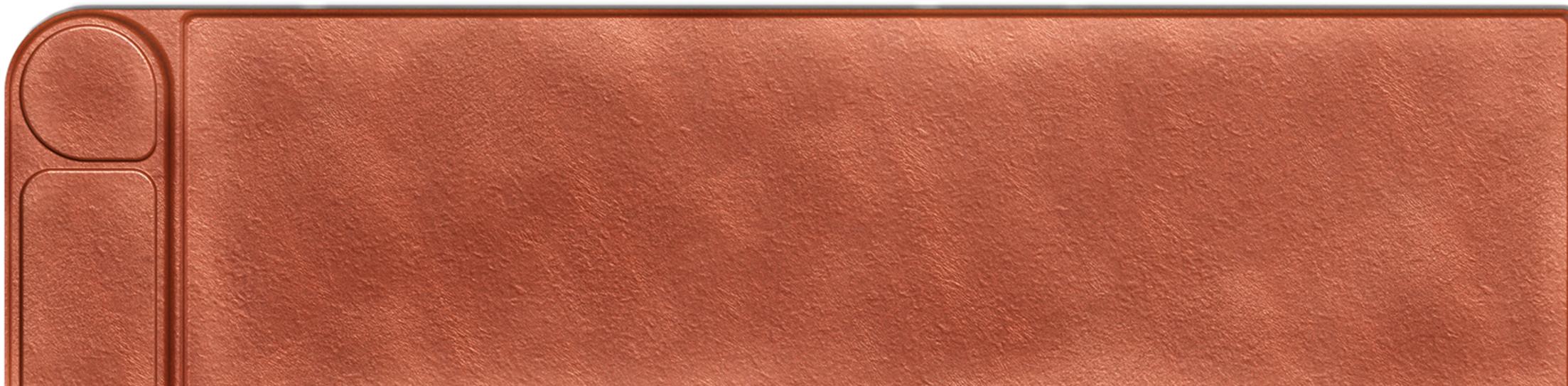
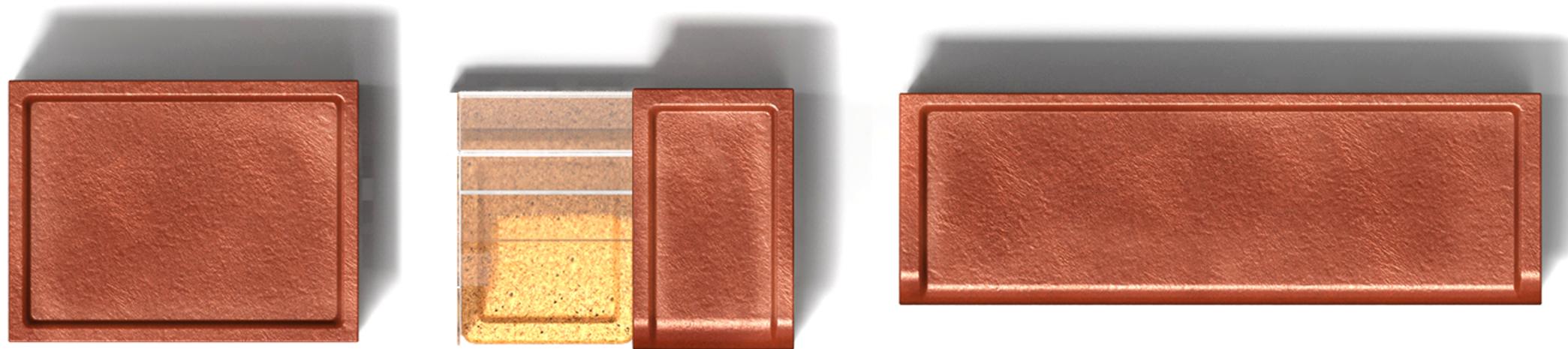
# Next Steps...

Adapt form to fit manufacturing methods

Experiment with handles in the base

Discuss benefits of metal vs a cheaper plastic





**MUJI**  
無印良品

## Desk Accessories

Creating a naturally  
organized space

2026 - 4 Weeks



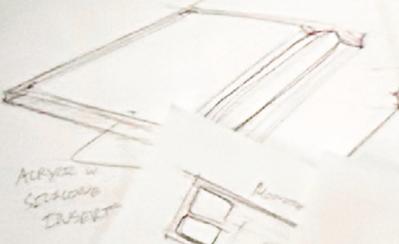
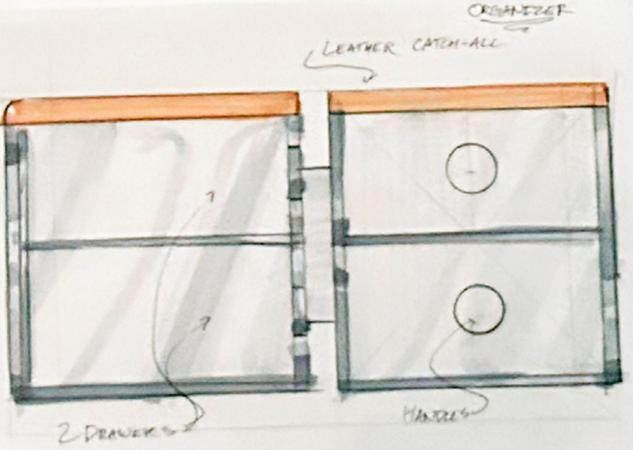
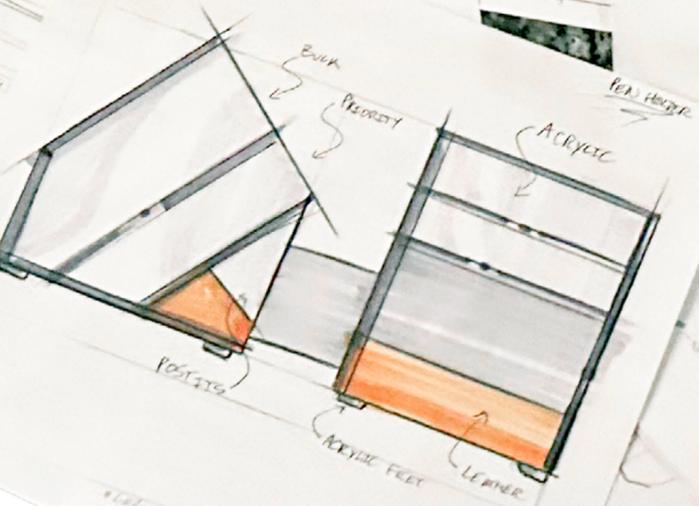
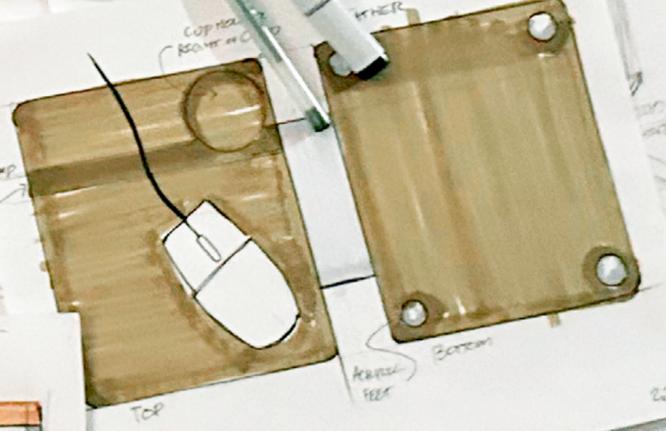
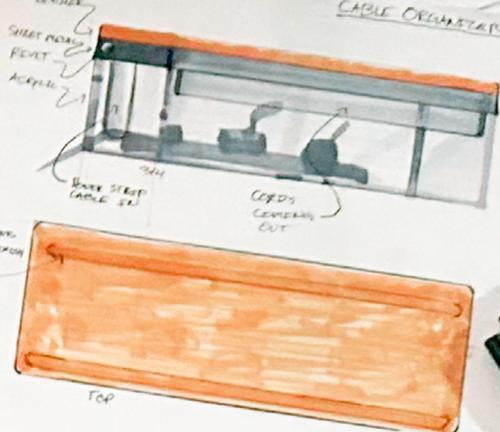
# Sketching

If we cover a desk in catchalls,  
Will items self-sort by priority?



**MUJI**  
無印良品

Desk Accessory Project  
Peter Scherschligt



I want to design  
something like this  
Library zone 2  
Wood - 100% Maple  
Leather - Cowhide /  
100% Waxed

13

25

24

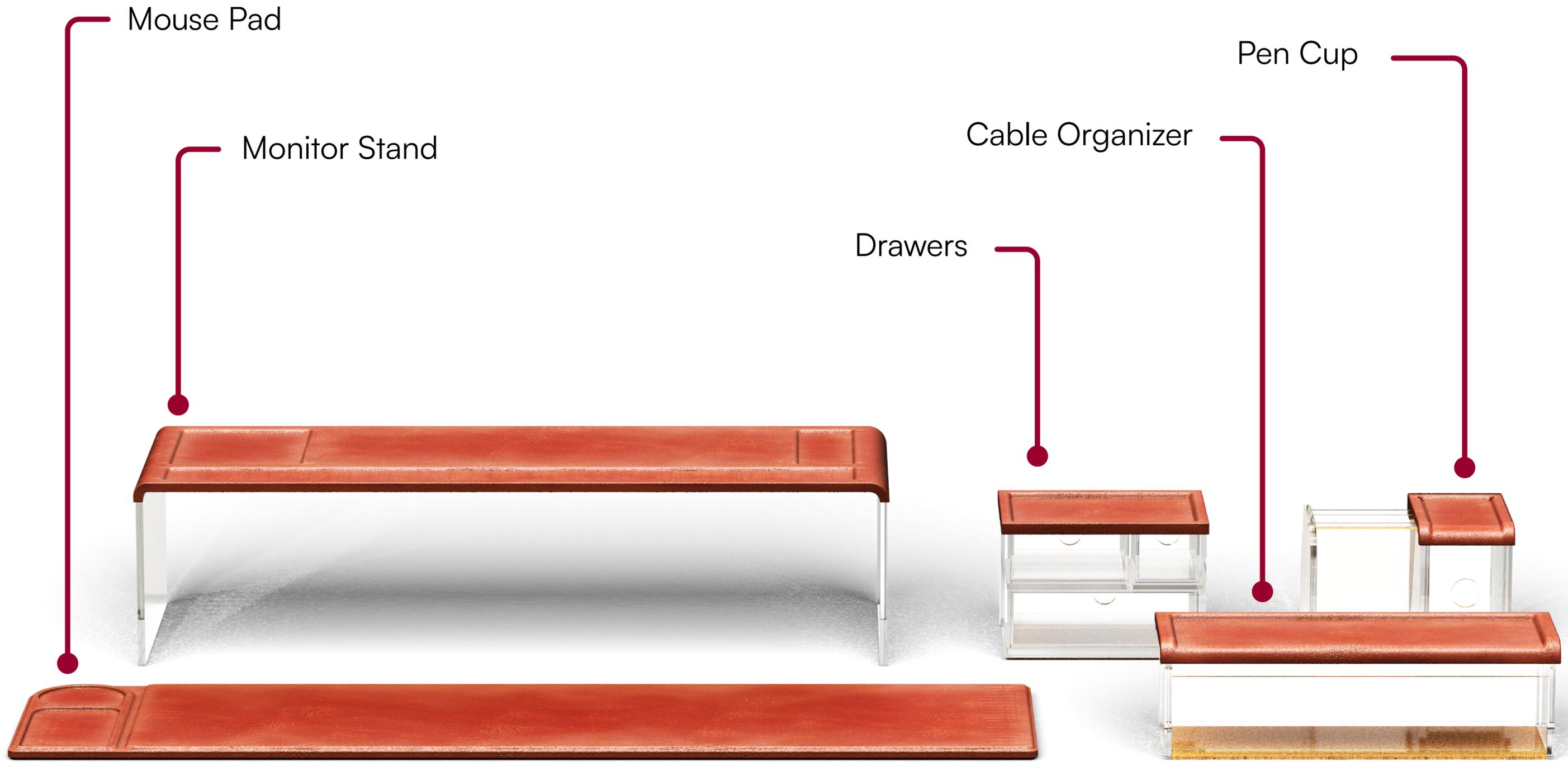
22

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25

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14



Mouse Pad

Monitor Stand

Drawers

Cable Organizer

Pen Cup

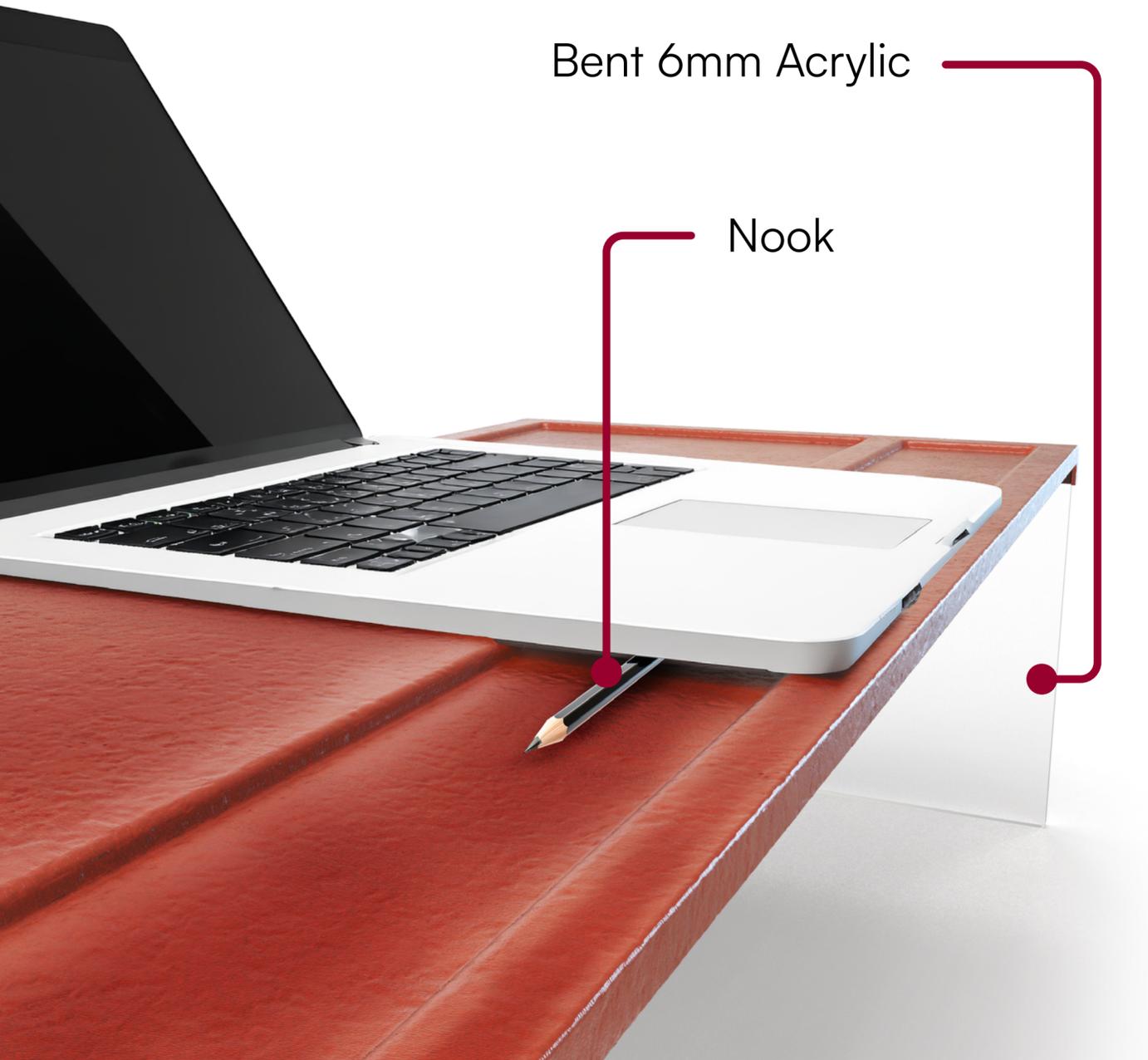




# Mouse Pad



# Monitor Stand



Monitor



Laptop

# Pen Cup



Priority Storage



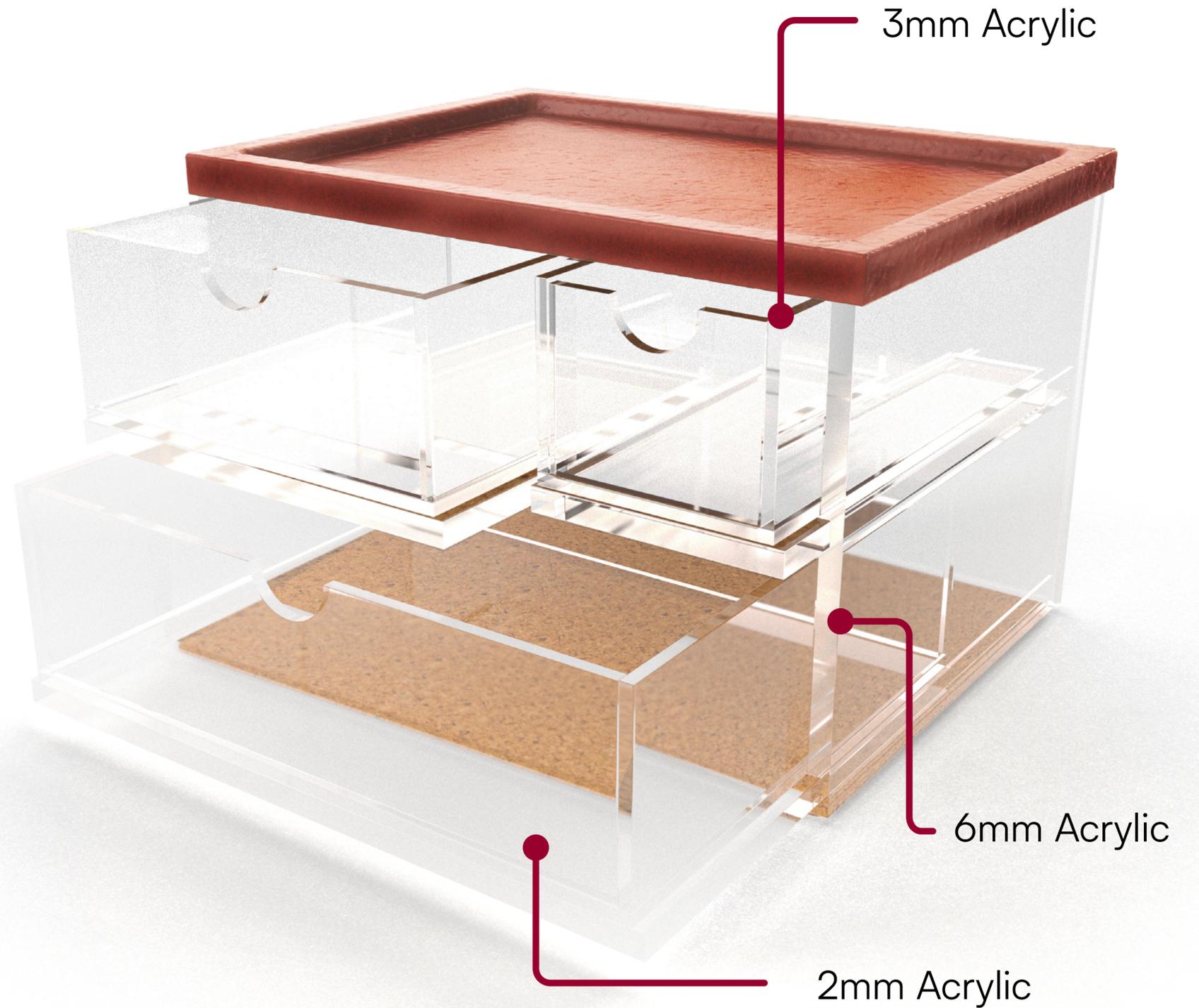
Cork Catchall

Spot for Phone

# Drawers



In Context

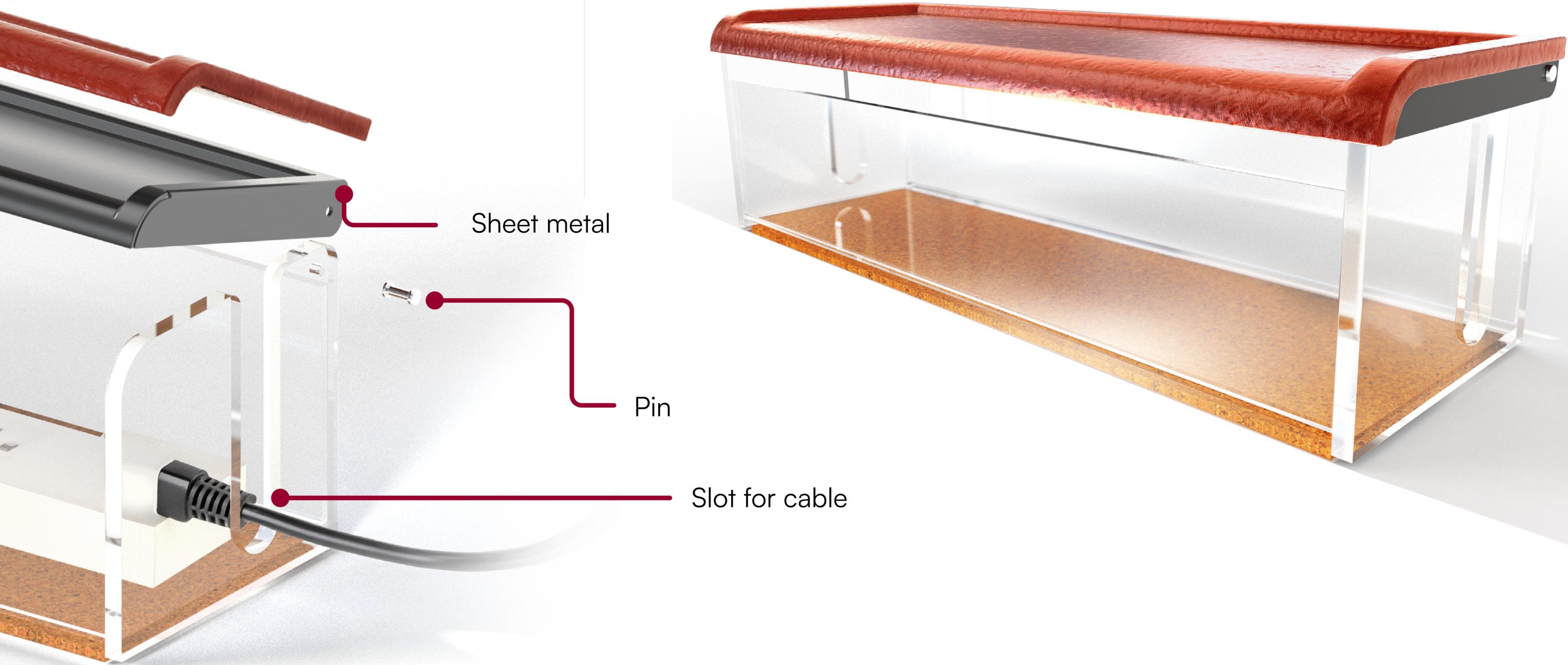


3mm Acrylic

6mm Acrylic

2mm Acrylic

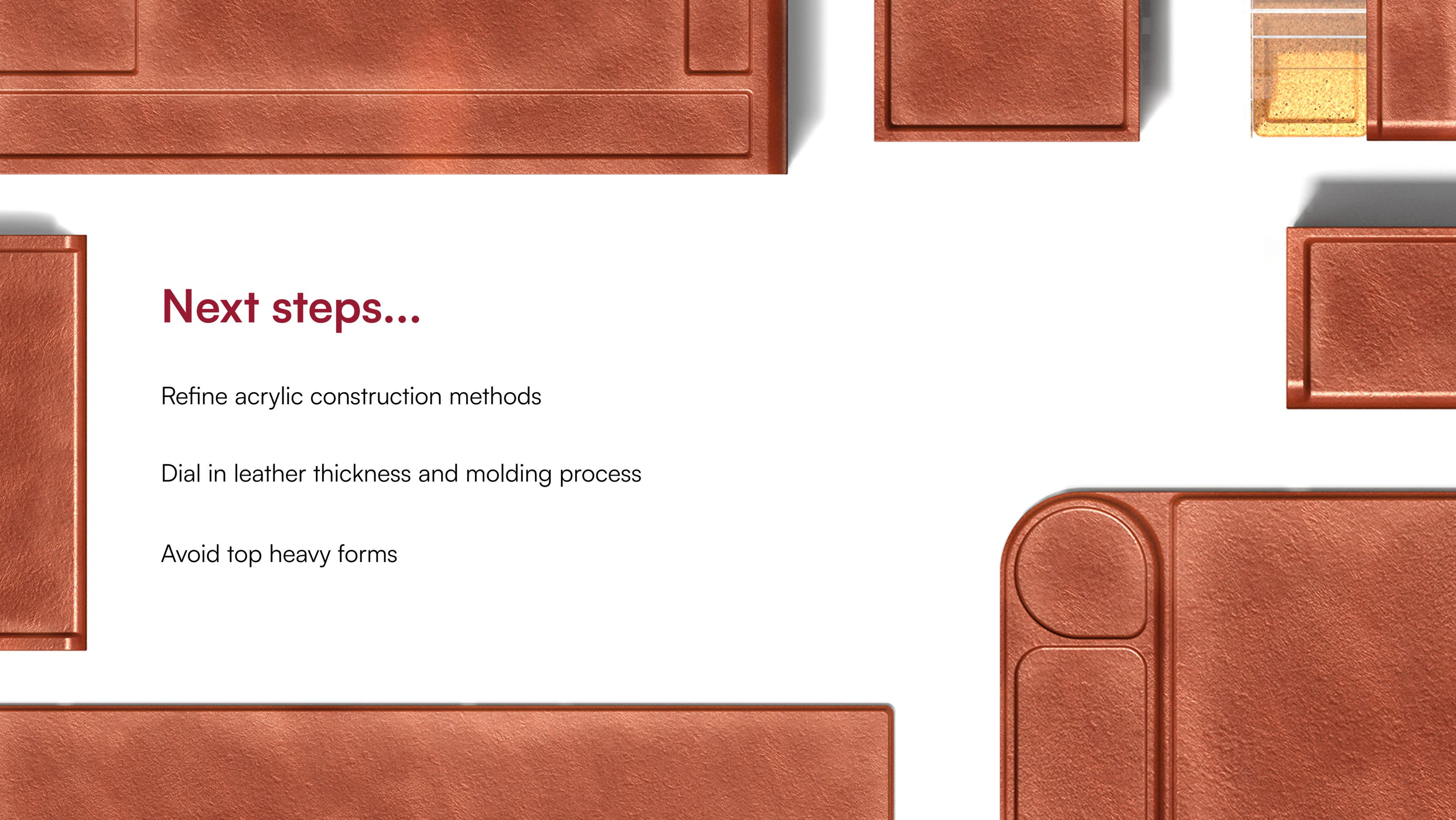
# Cable Organizer



Sheet metal

Pin

Slot for cable



## Next steps...

Refine acrylic construction methods

Dial in leather thickness and molding process

Avoid top heavy forms