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PORTFOLIO 2025-07-01

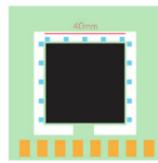
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The following presentation is intended for demonstration of industrial design skills. Please refrain from copying or sharing any of the following images.



Sit down with the engineering and electronics to generate functional breakdowns and size envelopes for basic components.

Have a long workshop with the client and draw up basic functional diagrams of the product. That way we are both on the same page and we can write down a clear URS.



Identifying main parts suppliers and options

DISPLAY

- OLED
- AMOLED
- LCD

PCB

- CAPACITANCE ARRAY: 2-3 pads, 8mmx5mm, 45mm total length
- USE ARRAY SERVICE: 10mm, 145mm total length, 10-degree angle along the edge of the PCB

Research trends

- neomorphism
- playful candy
- textures
- accent color
- glass refractions

Go over the usability again and reiterate and clarify.



breaking the front surface to mirrored and IR transparent part will decrease manufacturing costs and risks:
1 part - mirrored flat PC sheet with mirror film already applied and engraved buttons
1 part - IR transparent injection molded part

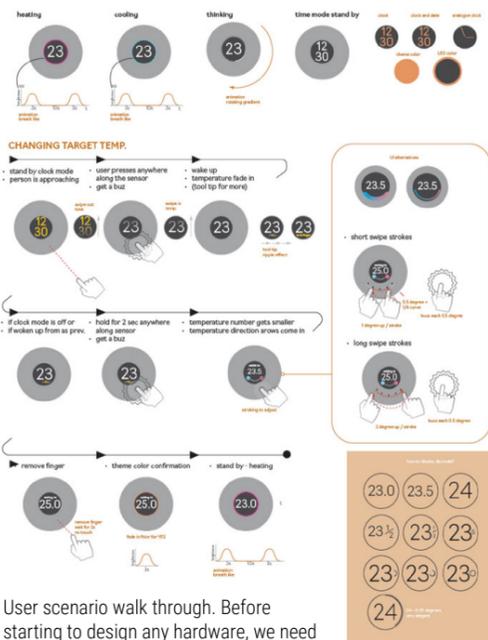
the surface finish can be rough satin, glossy or brushed, with or without anodized color finish

the button locations need to have a closed loop and a groove separating from the main mirror to have separate capacitive changes in mirror film

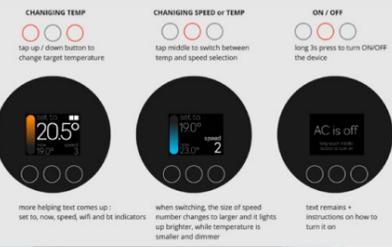
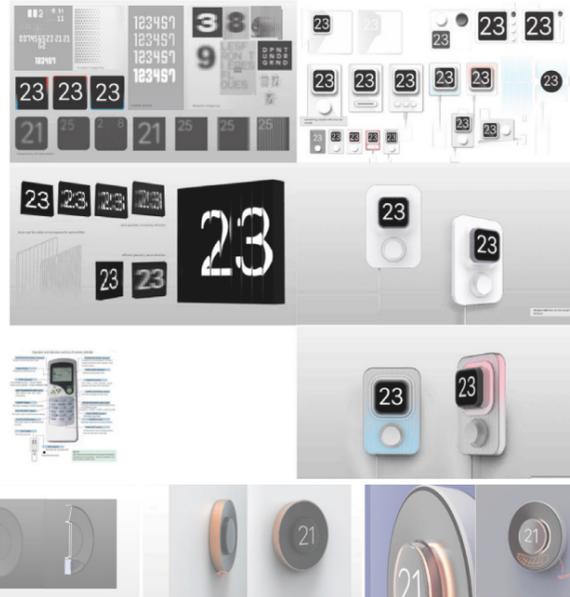


Client continued working with the mechanical engineer and manufacturer in China to refine the design and optimize it for production.

STAND BY MODES / SELF MESSAGES



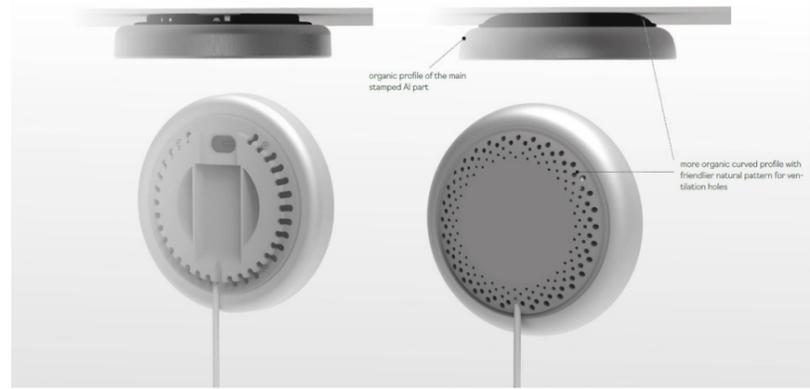
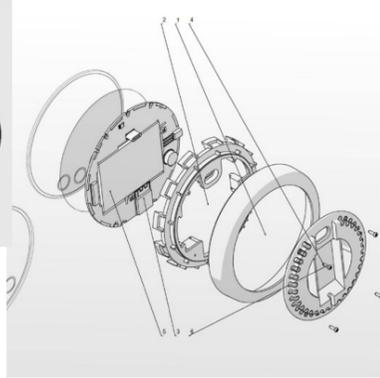
User scenario walk through. Before starting to design any hardware, we need to clarify what we are pressing, what we are seeing and how it all changes.



Create UX design mock-up so the design vision and the spirit of the product is more evident. Let electronics team start prototyping.



Generate and funnel as many ideas as possible so we cover all the wants and likes of the client and define a clear vision for the final product. Define and prototype basic dimensions.



Now that we have a basic shape of the product and the inner workings figures out, we can start modeling more concrete designs and how everything is assembled.

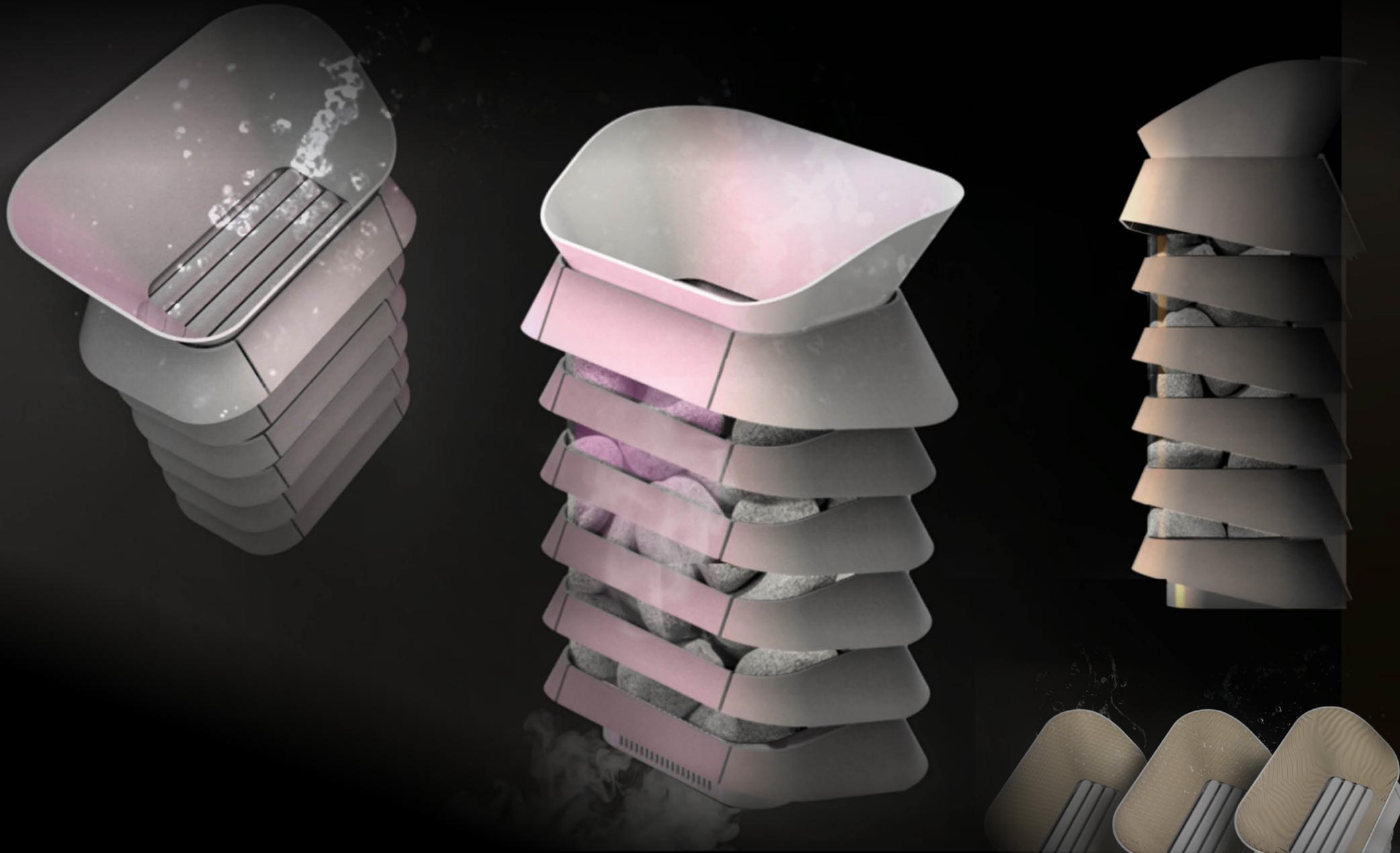


AC CONTROL UNIT

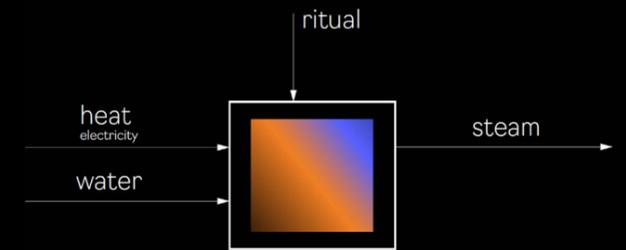
RESEARCH AND URS | 3D CONCEPT DESIGN | UX CONCEPT DESIGN | PROTOTYPING

Milled aluminum enclosure with a unique glass control panel which integrates user display, touch capability, and IR signal transmission.

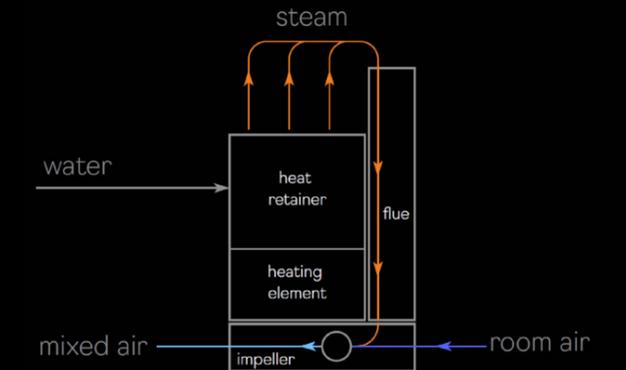
Stakeholders: client's team, electronics team, DFM engineers, manufacturers.



The black box type diagram to discuss all the inputs and outputs of our design including something intangible like a Ritual of the sauna experience



Functional diagram of the main components of the product. We can brainstorm for each part separately.



This project required some in-depth understanding of materials we can use in saunas.

- SPECIFIC HEAT CAPACITY
- SURFACE AREA / CONTACT AREA
- THERMAL SHOCK RESISTANCE
- 3 TYPES OF HEAT TRANSFER
- LAMINAR / TURBULENT FLOW
- DENSITY

	thermal conductivity W/mK	specific heat capacity J/gK	density kg/m ³
stone	12.5	0.98	2,980
steel	15.1	0.43	7,860
copper	390	0.250	8,900
water	0.60	4.18	1,000
wood	0.15	1.36	641
tech. ceramics	3.0	0.35	2,600

Morphological type table for some design options for each component of the product.

1	2	3	4
BODY	BASKET	HOT SURFACE	INTAKE
cast iron ceramics sheet metal	sheet metal ceramics / stones open / closed cast iron metal rod	stones ceramics	open flue open hood enclosed

Examples of material and finishes that can be used in the sauna

Client requires some sort of basic modularity in their design for different sized saunas.

Exploring some of the stylistic directions the product can take.

FUNCTION maximize stones maximize efficiency how fast do the stones heat lower all unnecessary things make it easy to clean make it as small and as powerful as possible		STYLE wellness product healthy product flexible product does it feel and look like SPA treat yourself place for indulgence
CLEAN unobtrusive design minimal almost doesn't exist simple shapes order		TEXTURED artisanal warm intricate catches the eye and curiosity dynamic
GEOMETRIC made for mass machine manu- facturing cold simpler rational		ORGANIC natural optimized shape / hydrodynamic rounded and curved has traces of time and weathered
REDUCTION made for mass machine manu- facturing cold simpler rational elemental		RITUAL traditional secure continuity connection to the ancestors

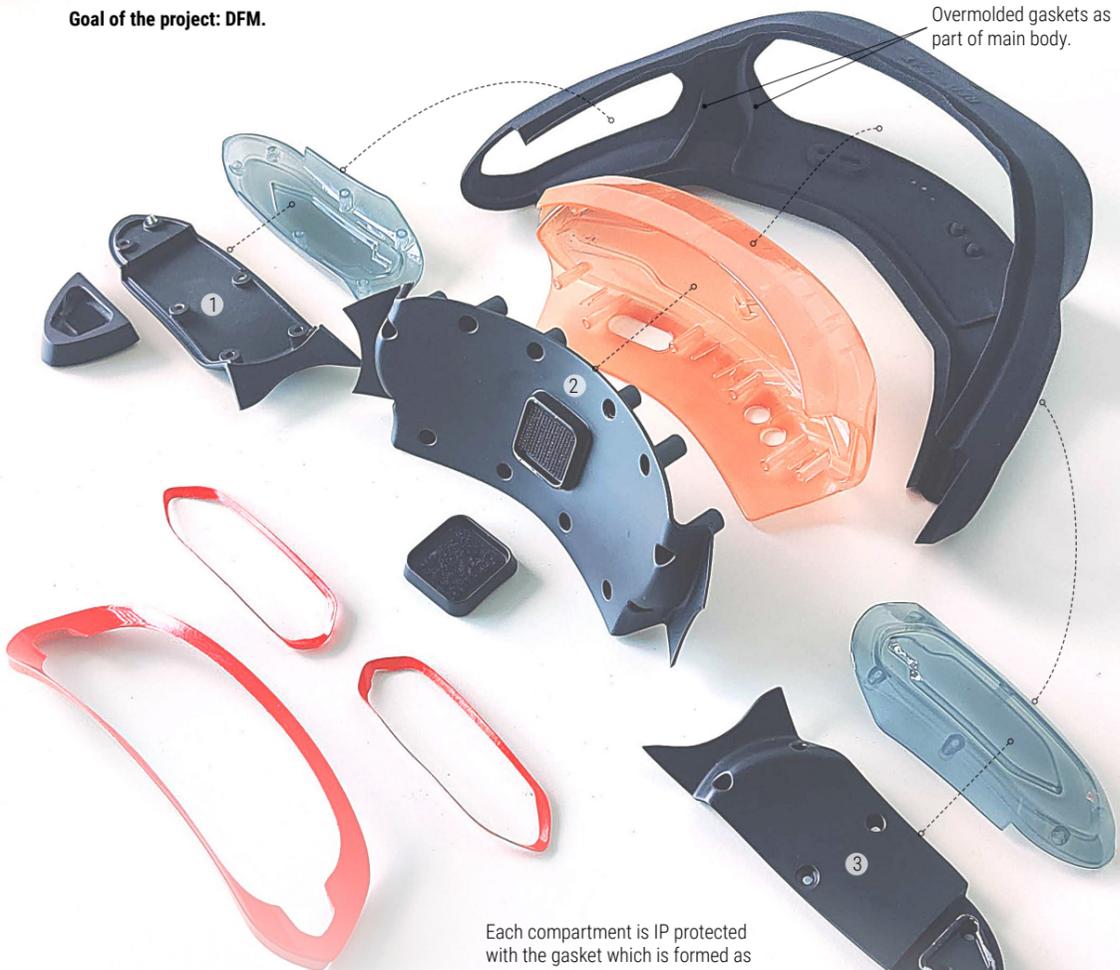
CERAMIC SAUNA HEATER

RESEARCH | 3D CONCEPT DESIGN

Novel design for the steam dissipation mechanism of a sauna stone basket made with technical ceramic material. Water evaporates upon contact with the surfaces of the basket and creates a unique sauna experience.

Stakeholders: client's marketing and engineering teams

Goal of the project: DFM.

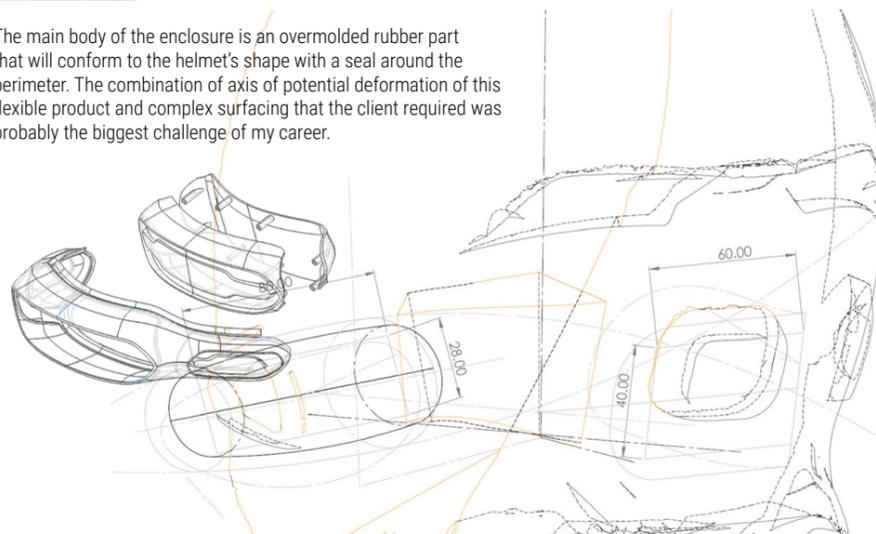


Overmolded gaskets as part of main body.

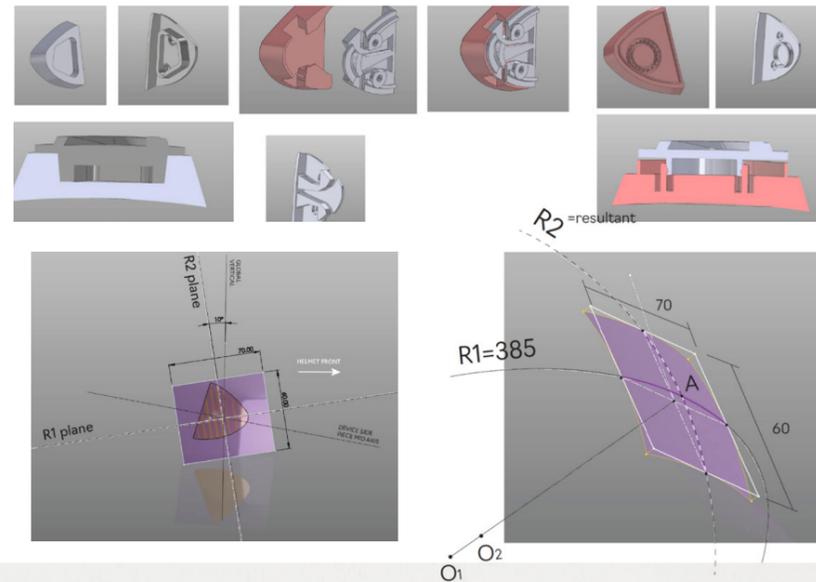
Each compartment is IP protected with the gasket which is formed as part of the main flexible enclosure and overmolded onto transparent parts.



The main body of the enclosure is an overmolded rubber part that will conform to the helmet's shape with a seal around the perimeter. The combination of axis of potential deformation of this flexible product and complex surfacing that the client required was probably the biggest challenge of my career.



Complexity of the helmet shape and its variability on the market required deep research into designing a universal locking mechanism and sticker anchor double curvature.

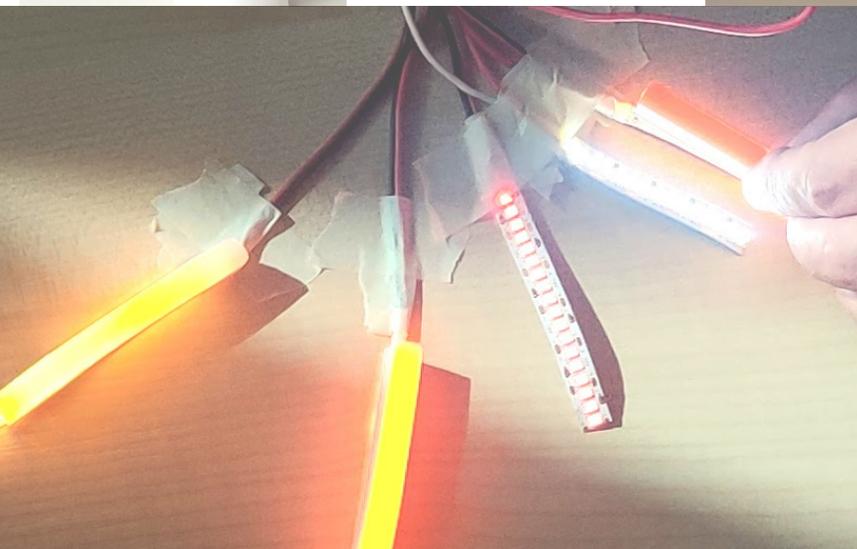
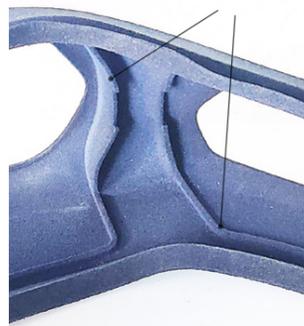


BIKE HELMET SAFETY LIGHT

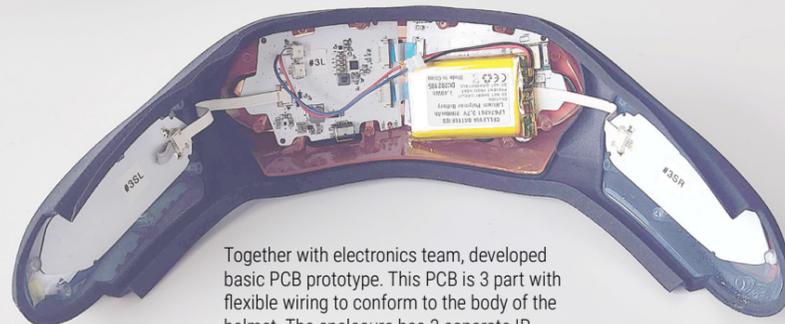
RESEARCH AND URS | 3D CONCEPT DESIGN | SURFACING | DFM | PROTOTYPING

Complex overmolded EPDM body design houses three electronics chambers for LED lights, controls, batteries. Unique challenge was to provide flexibility of the body to conform to most types of helmet shapes while retaining IP protection.

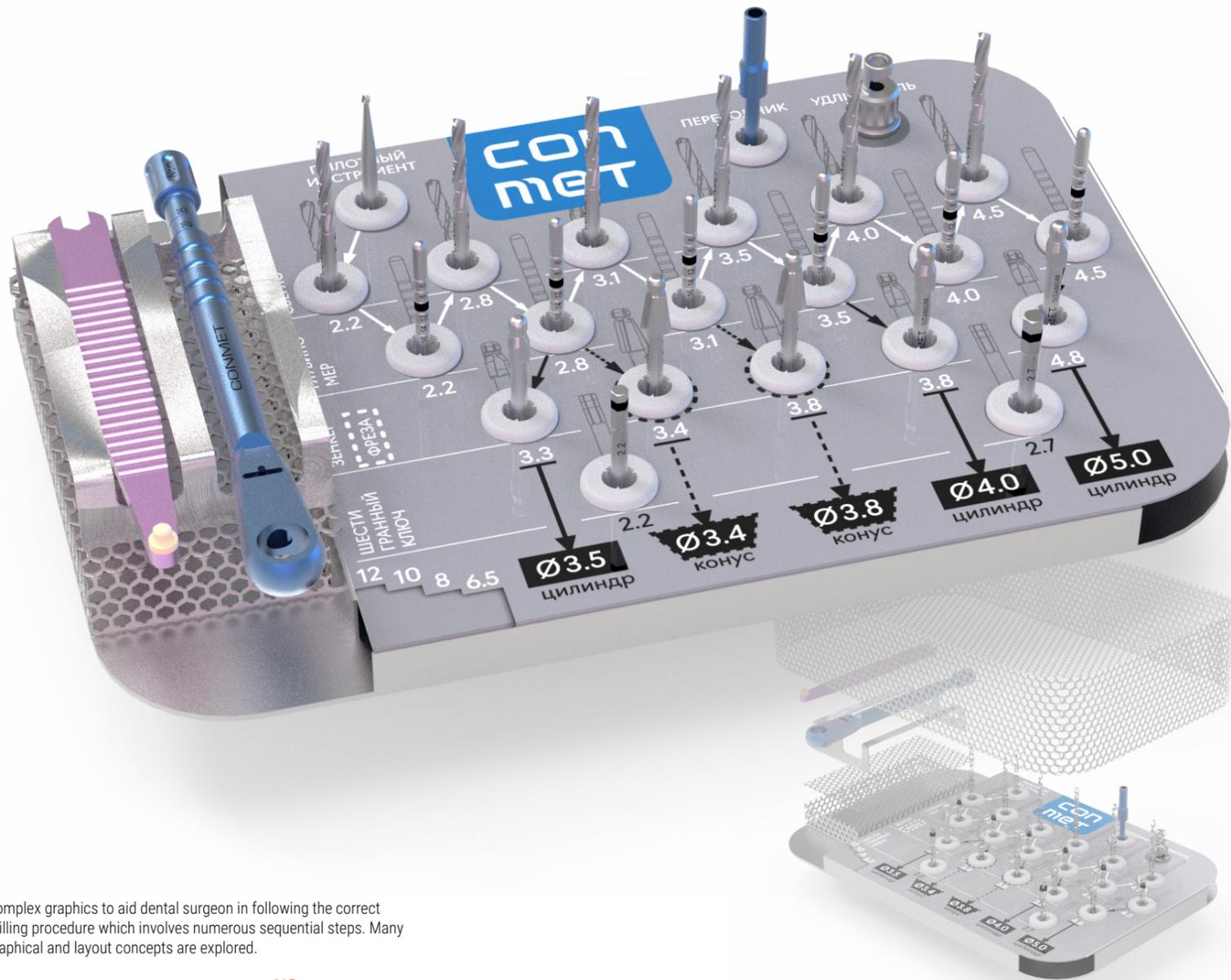
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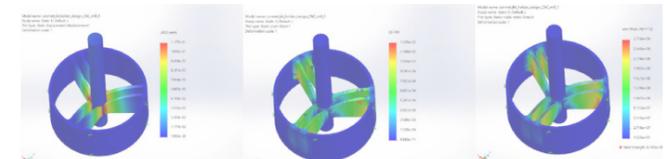
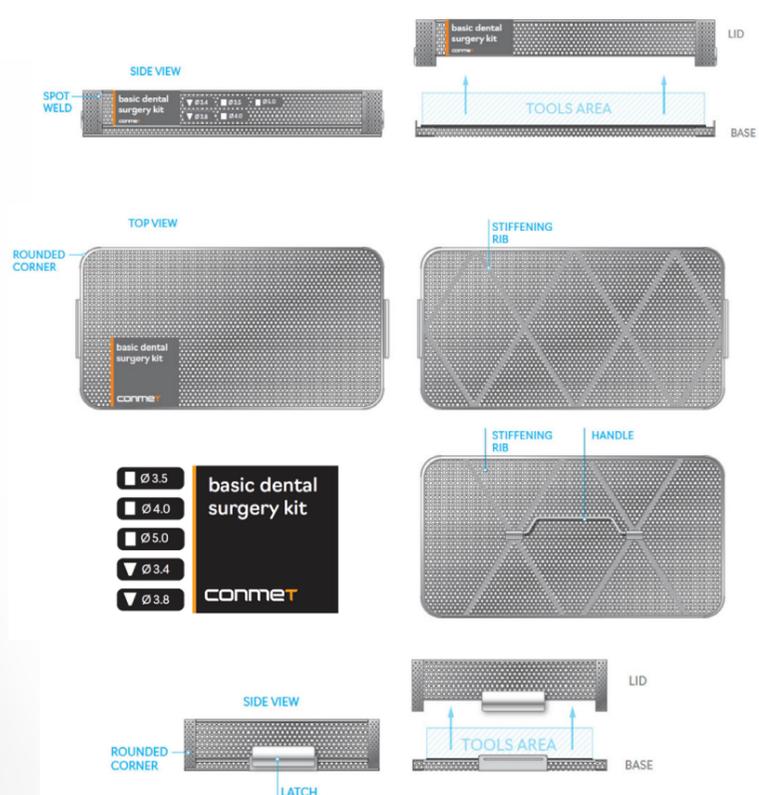
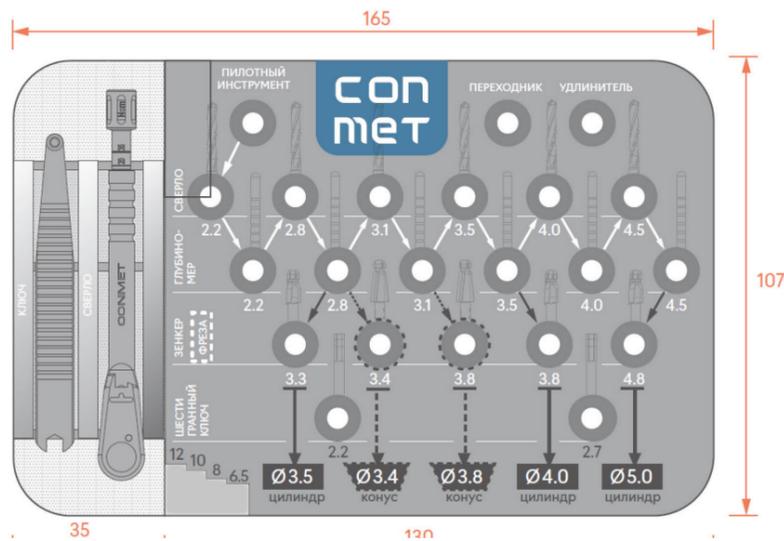
A lot of testing and prototyping is put into colors and brightness of the LED lights as this a safety feature. Specialized automotive plastics are explored as the space constraints required dissipation of LEDs that were very closely positioned to the surface.



Together with electronics team, developed basic PCB prototype. This PCB is 3 part with flexible wiring to conform to the body of the helmet. The enclosure has 3 separate IP protected compartments.

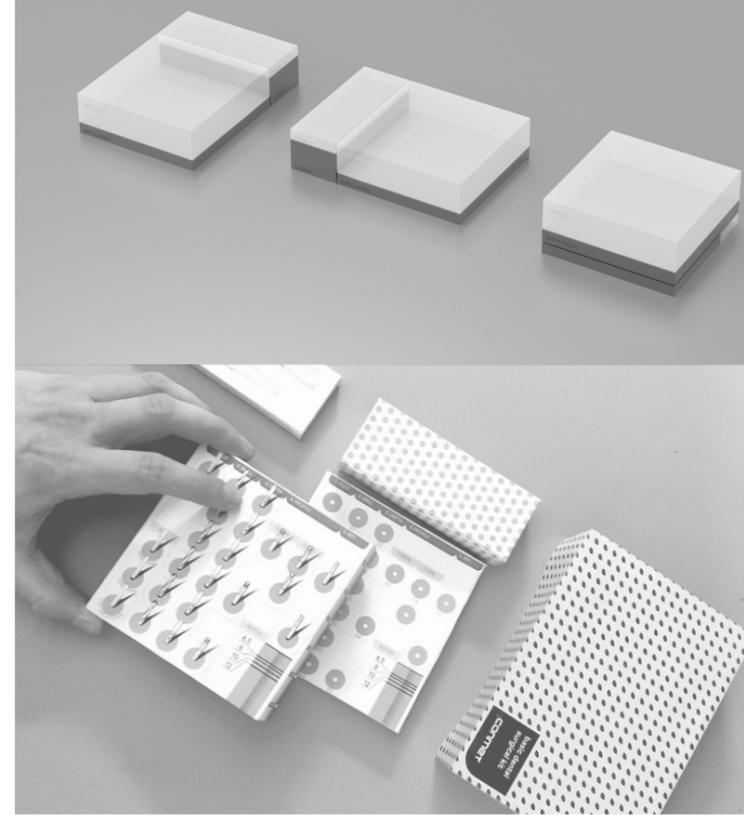
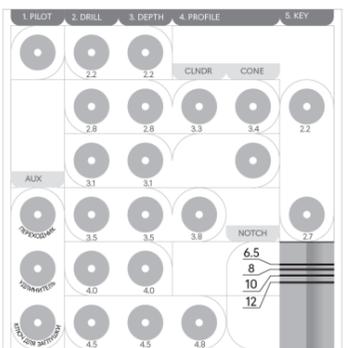
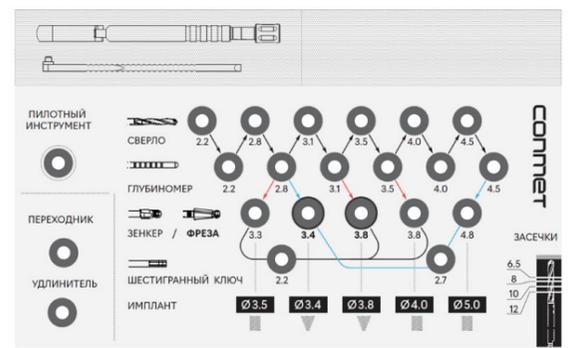
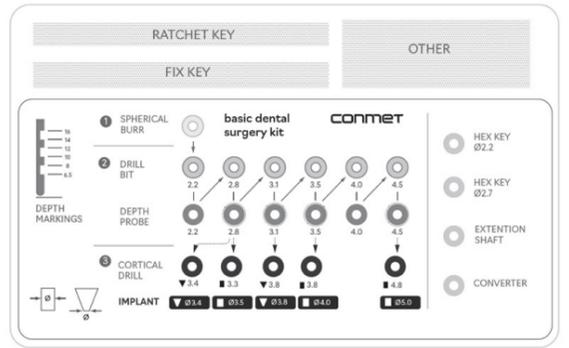


Complex graphics to aid dental surgeon in following the correct drilling procedure which involves numerous sequential steps. Many graphical and layout concepts are explored.



To reduce the use of silicone, a titanium milled spring grommet is used to hold up the drill bits which also helps replacing the bit with guides.

Only a tiny portion of the drill bit offerings are part of the basic kit. One of the interesting parts of this project was to first go over all of the complexities of dental implant procedure and to communicate that as a user scenario.



The enclosure must fit into a standard autoclave and have the smallest footprint during the surgery.

DENTAL IMPLANT BASIC SURGERY KIT

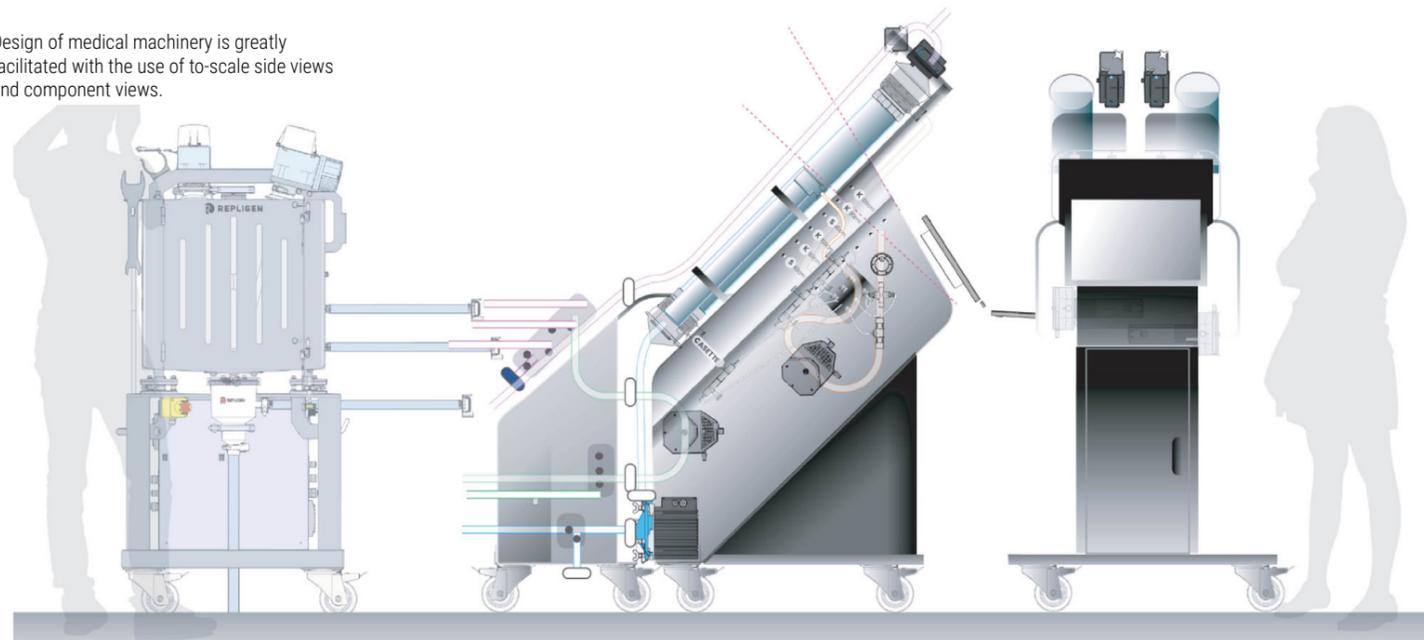
RESEARCH AND URS | 3D CONCEPT DESIGN | GRAPHICS | DFM | FEA SIMULATION

Design of a surgical container for storing and autoclaving titanium dental drill bits for implant preparation of the jaw bone. Main challenge is to assist the surgeon in following the correct sequence of the drill bit selection.

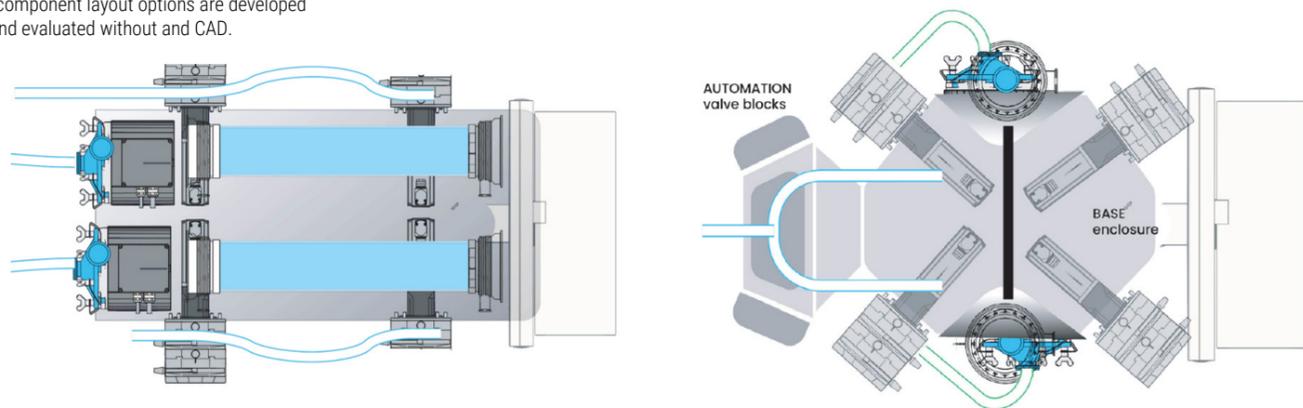


Design of graphics for showroom display of the medical equipment

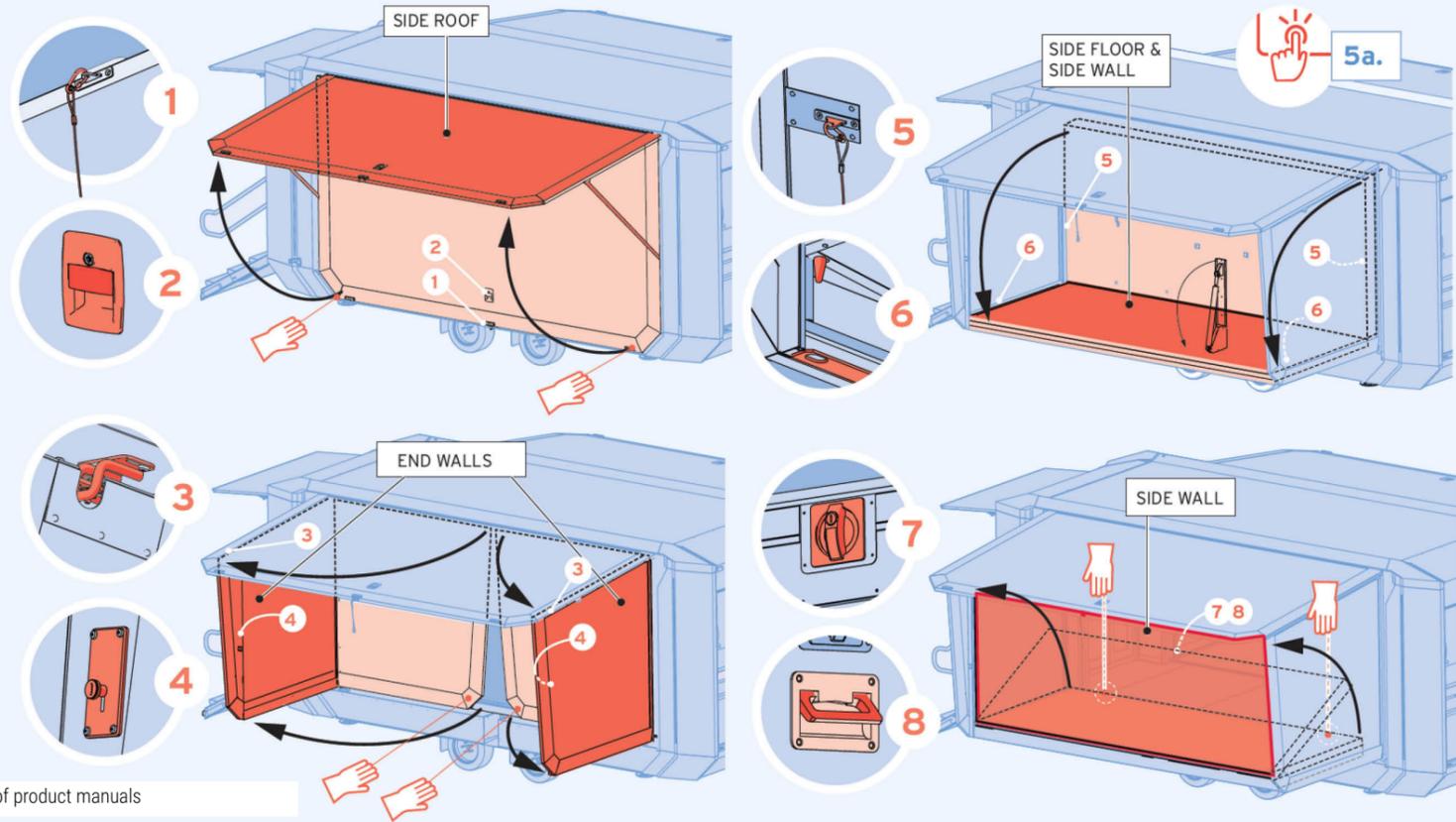
Design of medical machinery is greatly facilitated with the use of to-scale side views and component views.



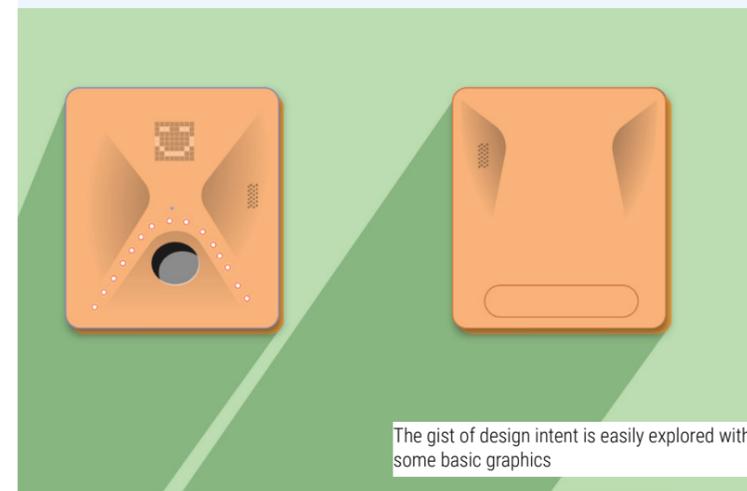
Several component layout options are developed quickly and evaluated without and CAD.



5. UNFOLD



Design of product manuals



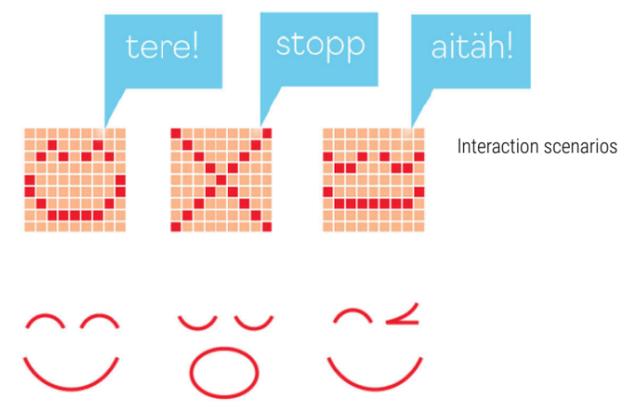
The gist of design intent is easily explored with some basic graphics



VISUAL COMMUNICATION

Samples of visual 2D communication for various projects. Fast, convenient, and persuasive schematics for design decision making without producing renders. Design of product manuals.

Adobe Illustrator and SW Composer.



Interaction scenarios