JACK THRUN

INDUSTRIAL DESIGN 2019

JACKTHRUN
INDUSTRIAL DESIGN

CONTACT

jackthrun@gmail.com
973.349.0160

Home Address:
8 Courtney Drive
Flanders, NJ 07836

EDUCATION

U OF CINCINNATI | DAAP
Industrial Design
Class of 2019 (BS)

GPA: 3.833
Dean's List 2014 - Present

MOUNT OLIVE HS
Flanders, New Jersey
Class of 2014

Honor Roll
HAAS Cup Champion

SKILLS

DIGITAL
Photoshop, Illustrator, InDesign, Alias, SolidWorks, Keyshot, Inventor, Premiere Pro, FinalCut Pro, HTML + CSS, Word, Excel, PowerPoint, Outlook

ANALOG
Foam modeling, pattern making, mold making, CNC machining, brainstorming, sketching, digital sketching, wood shop, metal shop

---

DESIGN EXPERIENCE

GARMIN
Industrial Design Intern
Aug 2018 - Dec 2018

Support designer on one of the Garmin Edge products. Contributed from project kickoff through the rough model phase. Participated in rough sketch, refined sketch, and rough model phases and responsible for presenting the rough model review.

SAMSUNG
Industrial Design Intern
Jan 2018 - May 2018

Responsible for a wide variety of design exploration and ideation through the use of sketching, Illustrator, CAD, and foam modeling. I was also the main designer on a project working with an engineer to package his idea into a functional prototype.

GARMIN
Industrial Design Intern
May 2017 - Aug 2017

Designed a conceptual action camera for Garmin's Virb lineup. The design process included research, ideation sketching, illustrator ideation, concept sketching, 3D modeling, 3D printing and prototyping, and concluded with presenting to Garmin management.

CATALYST PDG
Industrial Design Intern
Aug 2016 - Dec 2016

One of three designers on a small product development team. Contributed to projects through sketching, Solid-works surface modeling, and rapid ideation. I also operated injection molding presses and helped out with various manufacturing efforts.

FARM DESIGN
Industrial Design Intern
Jan 2016 - Apr 2016

Contributed to projects for several clients and was responsible for brainstorming, sketching (digitally and traditionally), 3D modeling, rendering, Photoshop UI storyboarding, and volumetric foam modeling for internal component layouts and architectures.


PHILIPS
Healthcare

The cast cutter hasn’t evolved much from its direct relative, the autopsy saw. The whole process is scary for children and uncomfortable for physicians.

What can be done to solve these issues?

WHAT'S WRONG?

Between the loud noise and the huge, exposed blade, getting a cast off can become any child's worst nightmare. I set out to pinpoint problematic areas that need attention.

1 **Dust Collection**
The cast vac is loud, untidy, and cumbersome.

2 **Blade**
Huge, completely exposed, and difficult changing process.

3 **Exposed Finger**
Constant contact with fiber-glass casts results in blisters.

4 **Scale**
It is difficult to maneuver into the optimal cutting position.

5 **Power Switch**
Rear location requires two hands to power on.

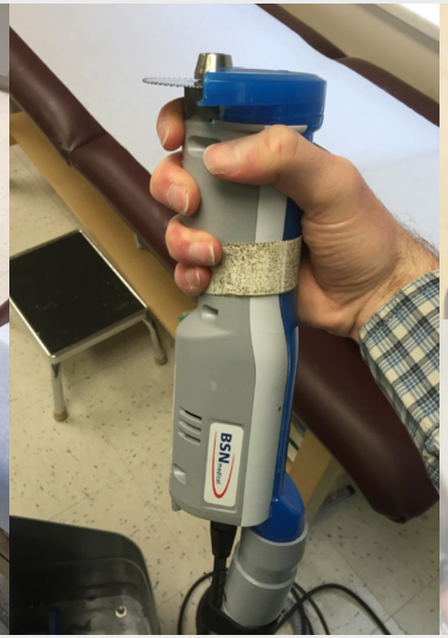
6 **Vacuum Hose**
Vacuum hose attachment is unwieldy and gets in the way.

FIRST PERSON INSIGHT

Advocare Orthopedics was nice enough to host me for a day and let me shadow some of the physicians. One of the PA's was brave enough to let me cut a cast off of her to give me first hand, user experience.

Pain Point
For a safe cast removal, doctors use their **index finger as a depth gauge** for better control while cutting.

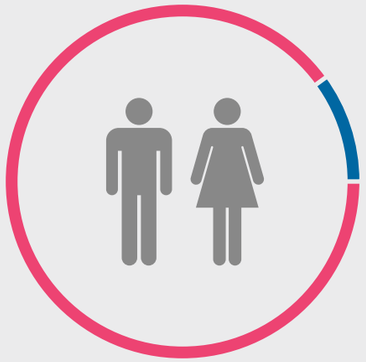
Clutter
When removing so many casts a day, it is **easier to just leave the hose out** instead of constantly stowing it away.



Pro Hack
Before rotating to a fresh edge, use a **Sharpie to indicate the dull side of the blade.**

USER RESEARCH

It was important to get feedback from the physicians and the physician's assistants who actually use this tool so a survey was sent out to many orthopedic offices in order to see who is using this tool, how often, and what's most important to them as the user.



Gender

Female 90%
Male 10%

Casts Removed per Day

1-10 a week 40%
1-5 a day 10%
5-10 a day 40%
10-15 a day 0%
15+ 10%

Vacuum Effectiveness

Very Weak 0%
Weak 0%
Average 70%
Strong 30%
Very Strong 0%

Canister Disposal

2-3 weeks 0%
1-2 months 0%
3-4 months 40%
6-12 months 20%
Not Sure 40%

Important to User

Ergonomics 4.70
Weight 2.70
Depth Control 3.10
Vacuum 2.90
Speed Control 1.60

DESIGN GOALS

After verifying the perceived problems with the physicians through the use of a survey and a visit to a local orthopedic office, I decided to focus my design on these five goals.

Comfortable

In order to increase efficiency and comfort for the physician, excellent ergonomics are a must for the cast cutter.

Easy / Intuitive

The blade changing process should be easy and intuitive. Mid-cut blade rotation also needs to be considered.

Maneuverable

The current system is very unwieldy. The cast cutter should accommodate various optimal cutting angles and positions.

Approachable

The cast cutter should be friendly and approachable to minimize the fear pediatric patients often experience.

Safe

Safety (and the perception of) needs to be highly considered as cast removals are often very scary for pediatric patients.

WHY PHILIPS?

It’s an exciting design challenge to imagine what the first Philips Cast Cutter could be like by merging the sophisticated, precise design language of their consumer products with the softer, more approachable aesthetic of their medical devices.

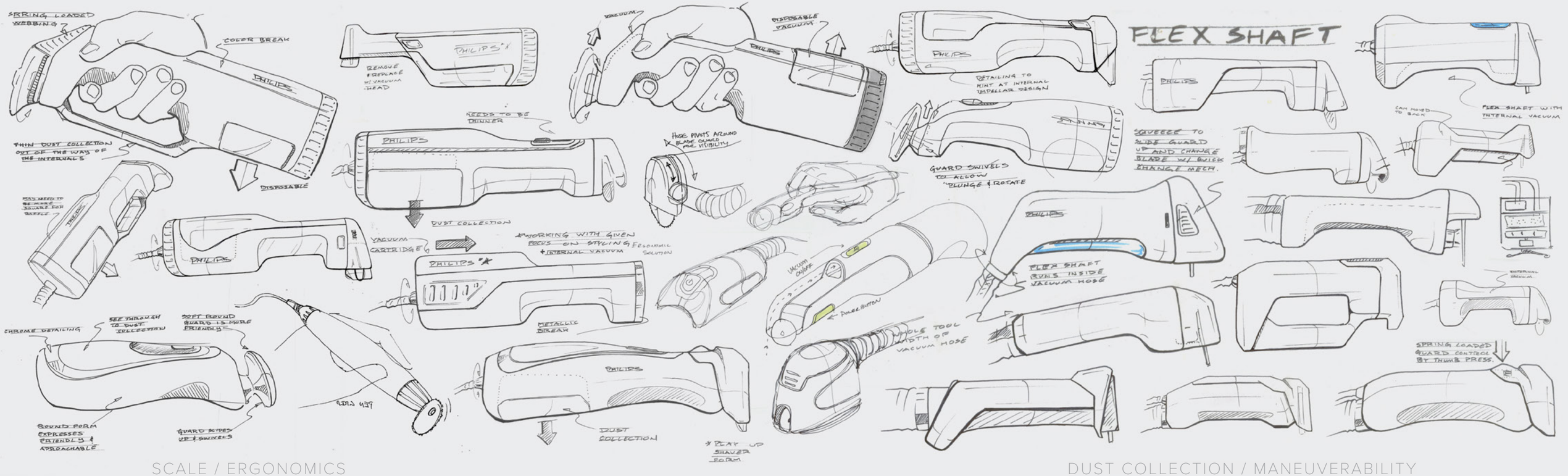
Approachable / Precise
Precise parting lines and hard edges break up the soft and subtle form.

Isolated UI
The UI sits undisturbed on a segmented panel in order to call attention.

Touch Points
The desaturated yellow calls attention to the areas of interaction in a soft and approachable manner.

IDEATION_01

The ideation phase began with exploration of overall form as well as different ways to remove a cast in order to address the issues of scale and maneuverability.

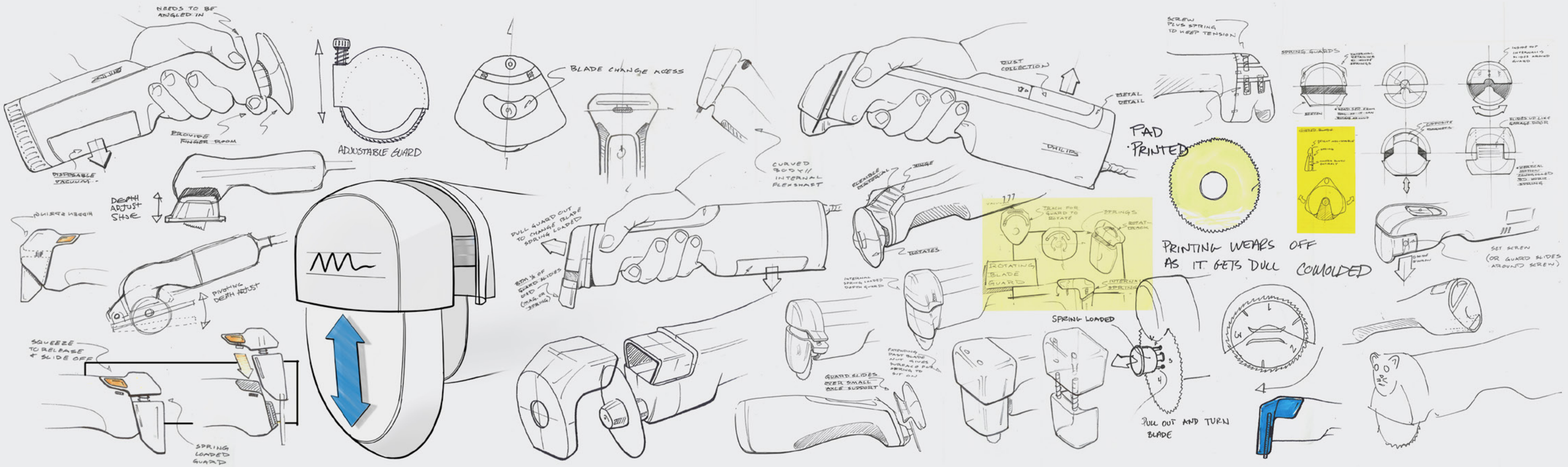


SCALE / ERGONOMICS

DUST COLLECTION / MANEUVERABILITY

IDEATION_02

Throughout the ideation phase, important details regarding safety were explored as well as how to make the blade change process more intuitive.



SAFETY

BLADE CHANGE

INTERNAL COMPONENT EXPLORATION

Three foam models were roughed out in order to visualize how different internal architectures affect the form in terms of scale and maneuverability.

Standard *(With internal Vacuum)*

+ Quiet
+ Increased maneuverability
+ Familiar

Linear

+ Slim blade guard profile
- Increased length
- Decreased maneuverability

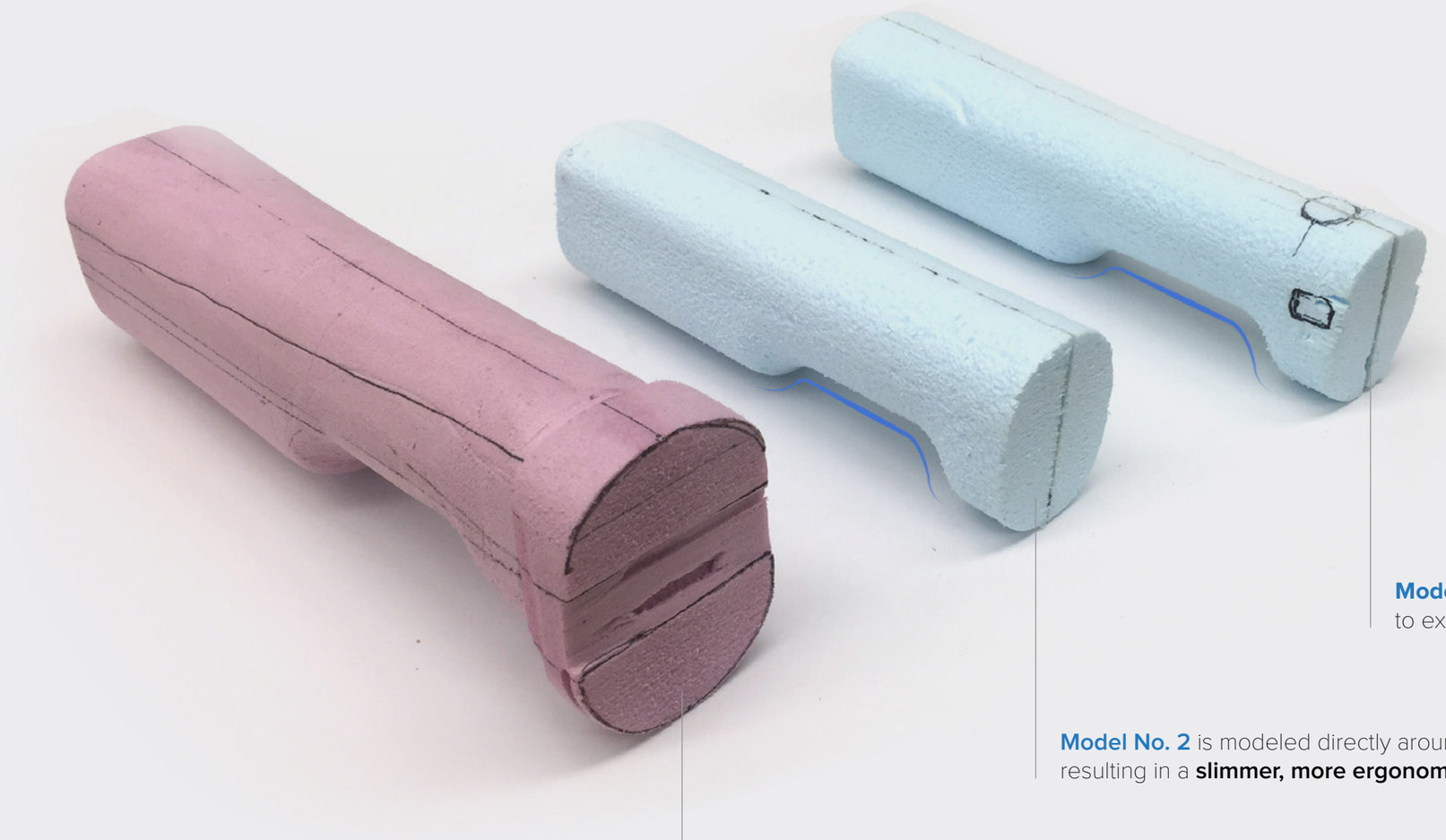
Flex Shaft

+ Increased maneuverability
+ Lighter weight
- Loud vacuum / thick hose

* More in-depth down selection process available in process book.

REFINED FOAM MODELS

With a more focused form direction in mind, the design was brought into CAD. With a more refined form milled out, I was then able to fine tune the details such as the sizing of the grip area and button location.



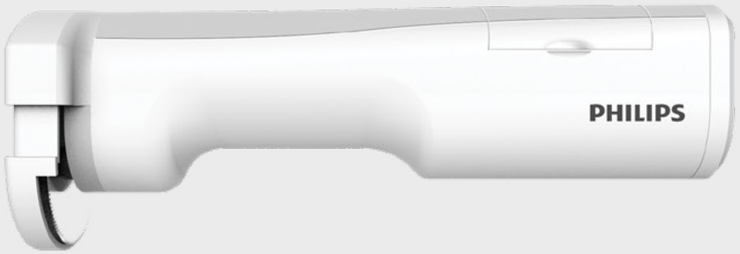
Model No. 3 fine tunes the **grip area** and begins to explore **button placement**.

Model No. 2 is modeled directly around the internal components resulting in a **slimmer, more ergonomic design**.

Model No. 1 is the preliminary exploration in an attempt to achieve an **aesthetic** form.

PART BREAK UP EXPLORATION

After a final form was achieved, it was time to focus on the details. During the refinement stage, parting lines, vacuum canister location, logo placement, and the careful use of Philips' yellow were all explored.



UI EXPLORATION

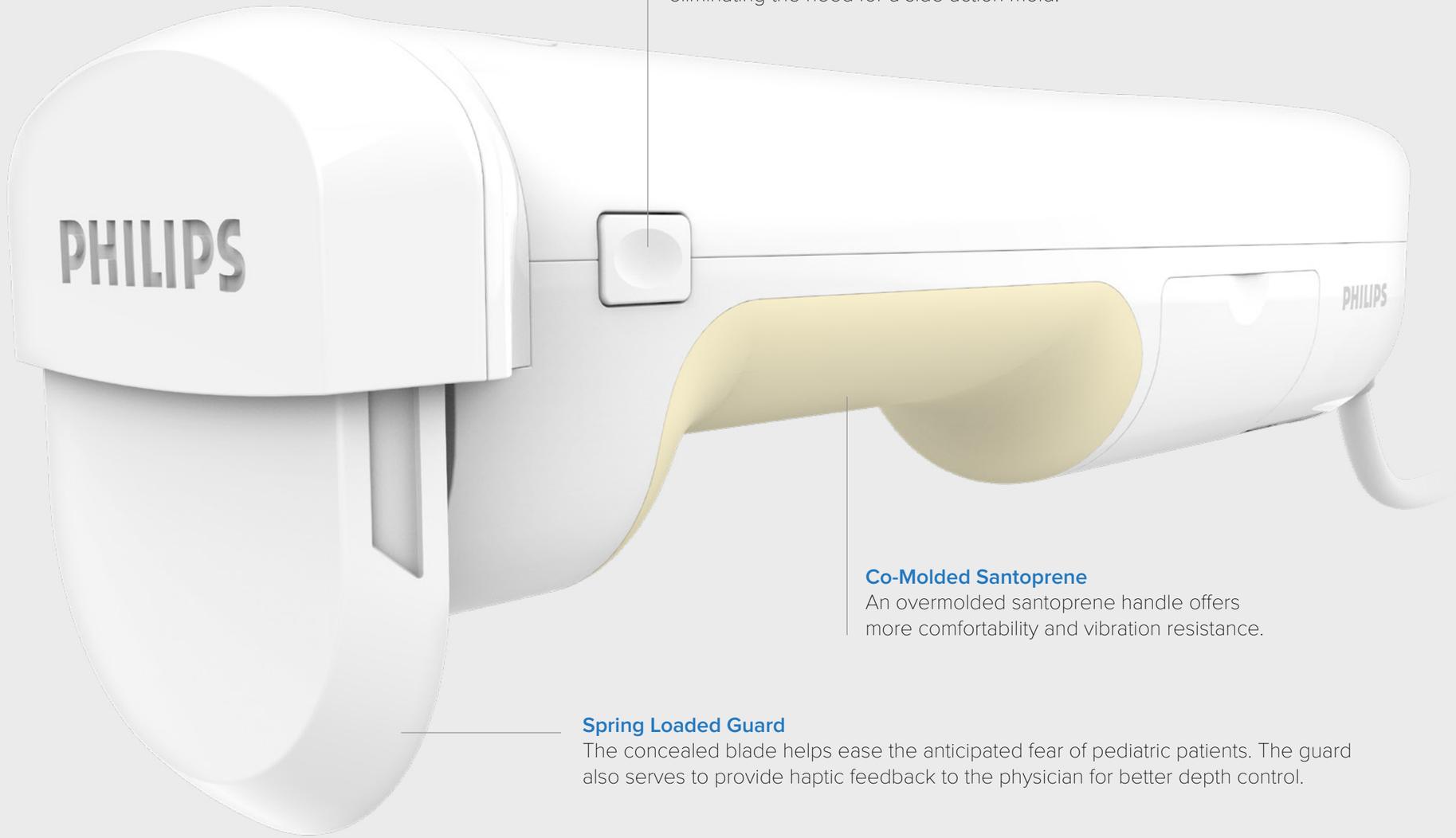
Taking inspiration from Philips consumer products, a variety of UI concepts were explored.

FINAL WHITE-MODEL

The final white-model resolves overall form and ergonomic issues as well as design features including the spring loaded quick release blade guard, a 360° swivel cord and the location of the internal vacuum.

FINAL DESIGN

The final design utilizes the Philips yellow to indicate primary touch points. An otherwise simple and clean form provides an approachable appearance appropriate not only for children, but adult patients as well.



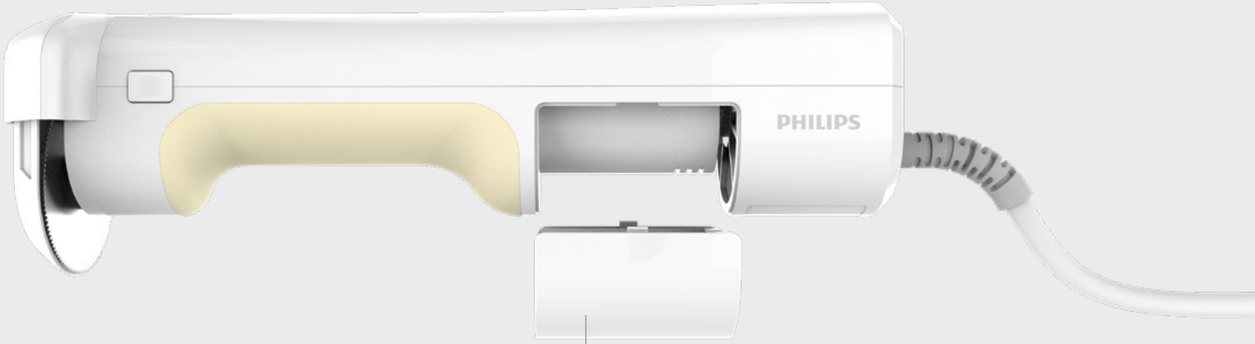
Guard Release Button
The parting line runs through the center of the button eliminating the need for a side action mold.

Co-Molded Santoprene
An overmolded santoprene handle offers more comfortability and vibration resistance.

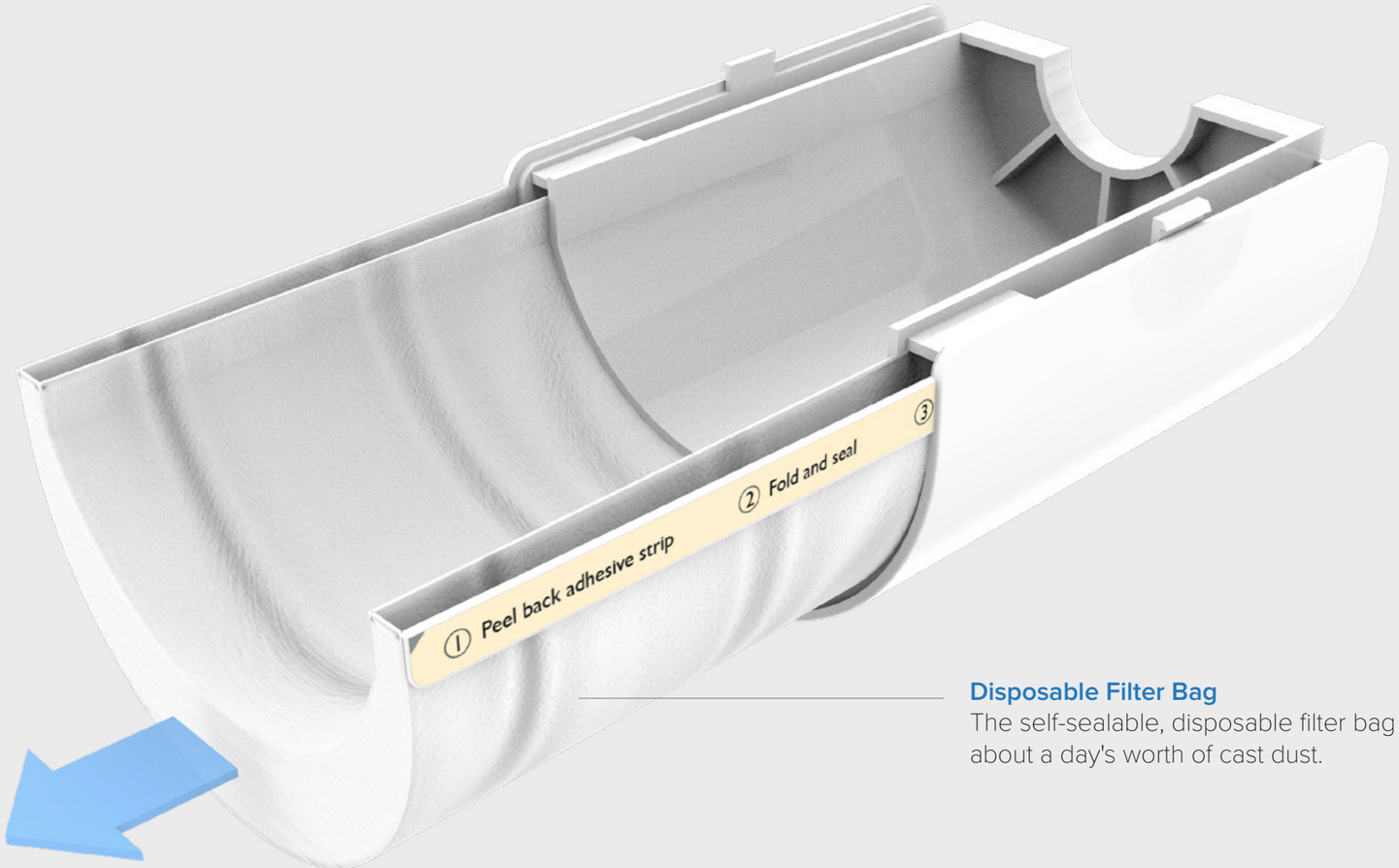
Spring Loaded Guard
The concealed blade helps ease the anticipated fear of pediatric patients. The guard also serves to provide haptic feedback to the physician for better depth control.

INTERNAL DUST COLLECTION

Children are often more scared of the noise than the blade itself. An internal vacuum heavily reduces the noise of the cast removal process by eliminating the shop vac style dust collection.



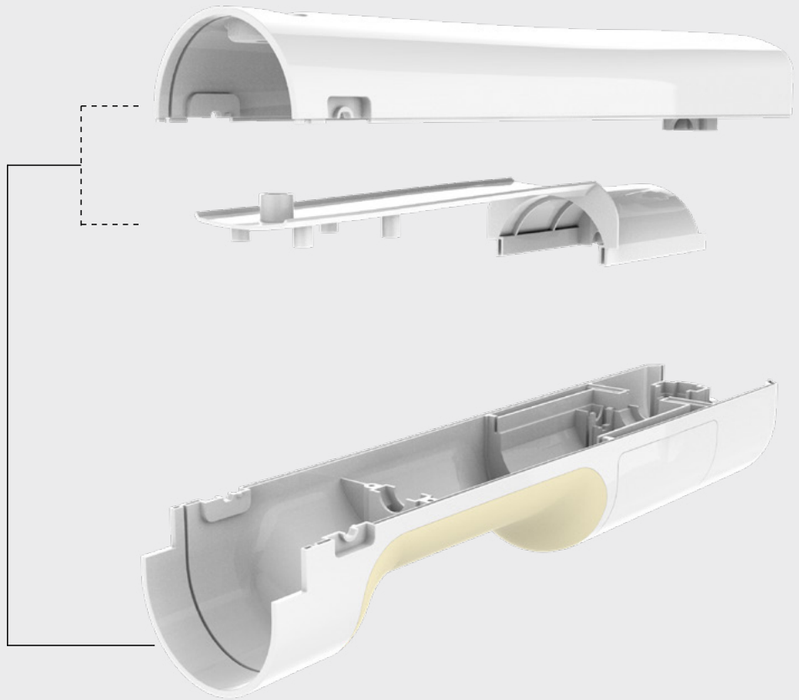
Vac Bag Housing
Using simple snap features, the vac bag housing is easily attached and removed from the cutter.

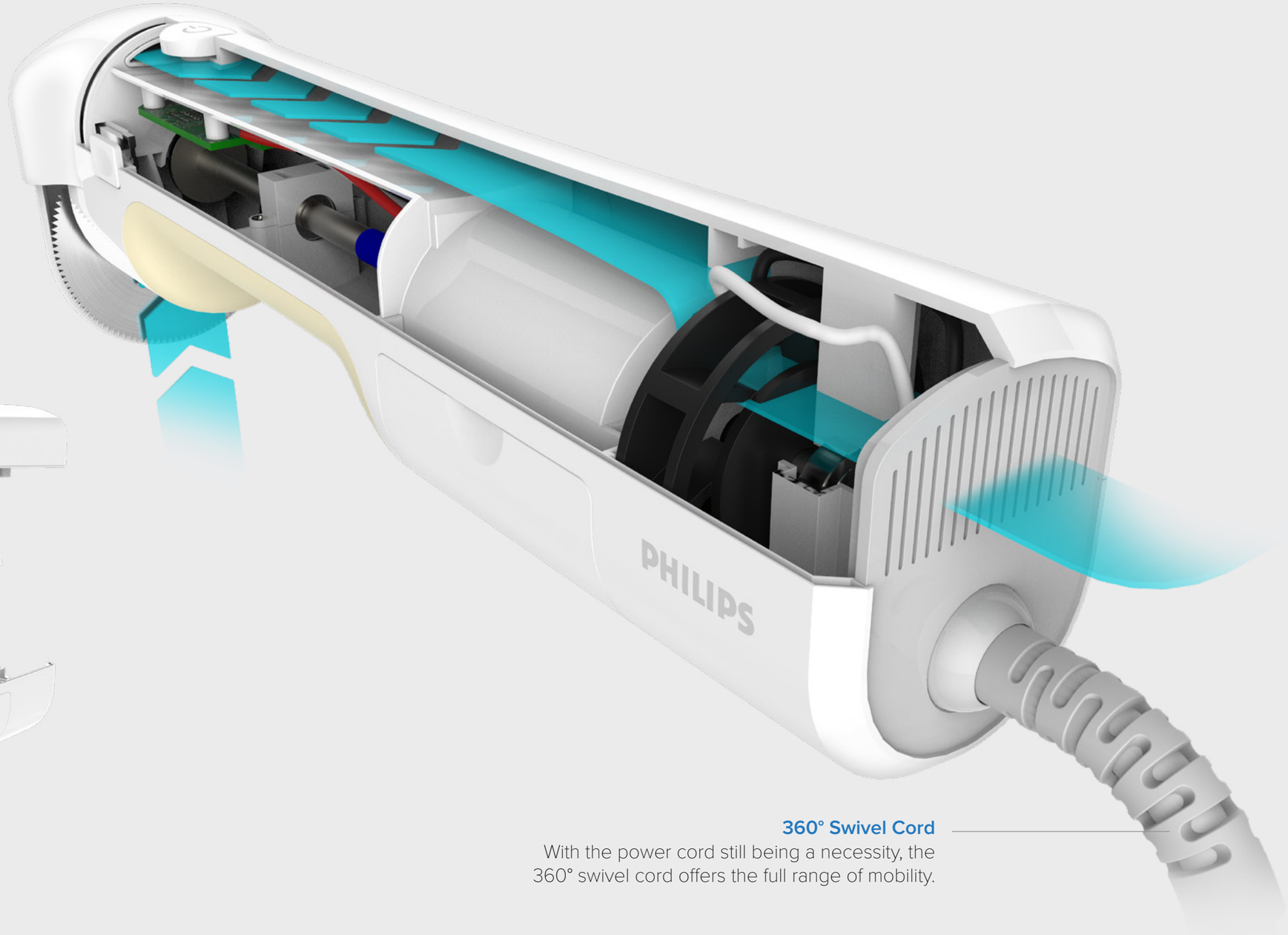


Disposable Filter Bag
The self-sealable, disposable filter bag can hold about a day's worth of cast dust.

AIR FLOW / PART BREAK UP

A channel for dust collection is achieved by welding the top two parts of a three part main body housing. Eliminating the vacuum hose greatly increases the mobility for physicians.





360° Swivel Cord

With the power cord still being a necessity, the 360° swivel cord offers the full range of mobility.

DEAD FRONT UI

Inspired by Philips consumer products, the top surface of the cast cutter contains nothing more than the UI. The LEDs sit below the surface providing a dead front look when the indicators are not illuminated.

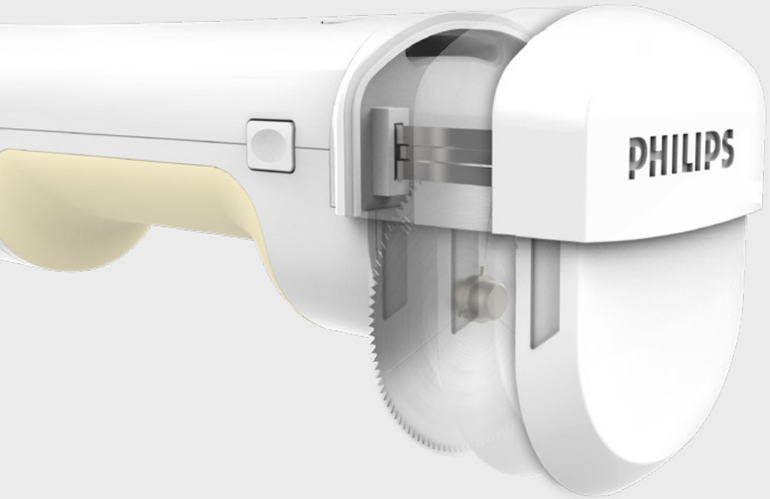
Dual Speed Power Button
One Click: Normal speed
Two Clicks: Fast speed

Power Level Indication
Icons are out of the way yet still able to be viewed when needed.

Canister Full Indication
Solid: Approaching max capacity
Blinking: Dispose and replace filter

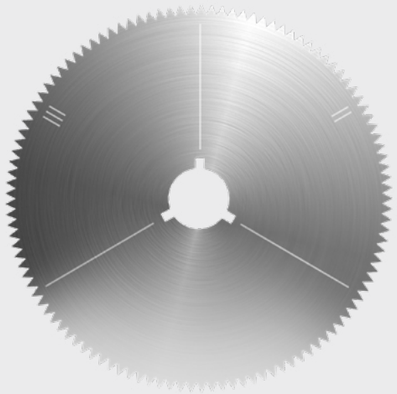
INTUITIVE BLADE CHANGE

Gone are the days of using a Sharpie to determine the used side of a blade! Through the use of spring loaded blade clamps and a pad printed blade, the intuitive, toolless, three step blade change process is quick and accommodates mid cut blade changing.



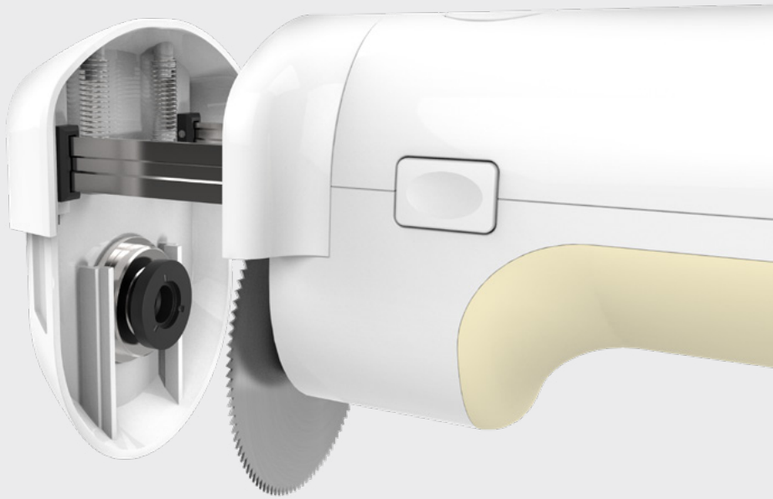
OPEN GUARD

When the two side buttons are depressed, the guard springs open. Simply remove the blade for replacement. **No tools required!**



ROTATE FOR FRESH EDGE

As the blade cuts through the cast, the **pad printed indicator gets abraded**. When the blade gets dull, rotate to an edge that is still marked.



CLOSE GUARD

Place the blade on the shaft and **close the guard to clamp the blade in place**. The guard is free to move up and down while the blade oscillates.

Introducing the first ever Philips Cast Cutter.

Bridging the gap between consumer and medical products, Philips' first ever cast cutter reduces the fear for children and improves the user experience for physicians. Its soft and subtle form combined with sharp detailing and attention to detail is where precision meets approachable.

innovation + you

PHILIPS


sötella

Design a chair that celebrates the beauty of Scandinavian Design through form, color, and materials.

A simple form with subtle curves should blur the line between dining and lounging to create a universal chair.

AESTHETIC INSPIRATION

Aesthetic inspiration came from my appreciation for Scandinavian design. Rather than merely copy, I rather decided to pull together different elements that I find most compelling.

LIGHT COLOR PALETTE

CLEAN GEOMETRIC LINES

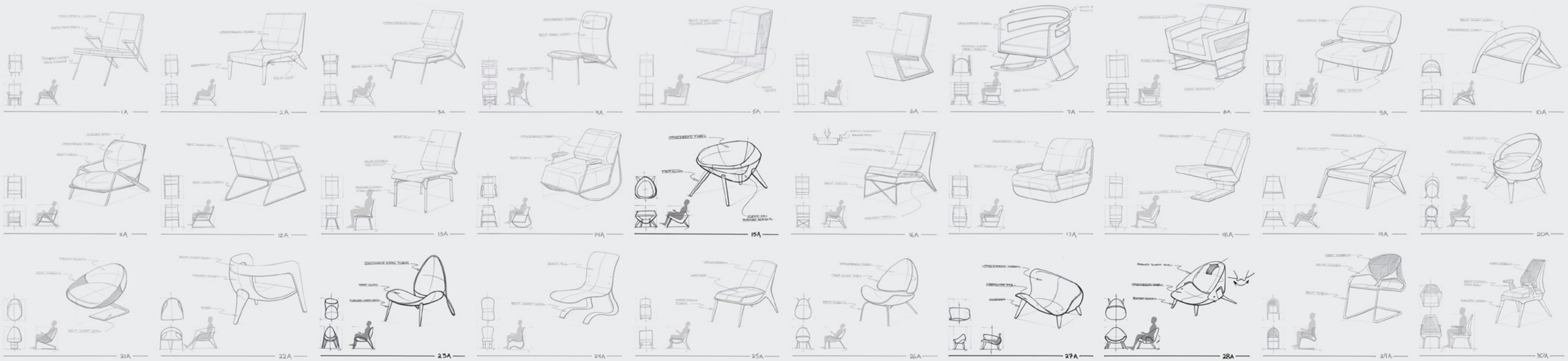
ORGANIC FORM / MATERIALS

IDEATION SKETCHES

By exploring every different type of chair, over 300 concepts were put down on paper resulting in a tough down-selection process.

REFINED SKETCHES

From dining chairs to lounge chairs, multiple concepts were refined during this stage. Four concepts were selected to be developed further.



SELECTED CONCEPTS

The final concepts included a conversation chair, an accent chair, a lounge chair, and a multi purpose chair/lounge. Each concept was graded on a scale of difficulty, time, and cost.

Concept 15B

Difficulty Level:	4/4
Time Consumption:	3/4
Cost Comparison:	4/4

Concept 23B

Difficulty Level:	1/4
Time Consumption:	1/4
Cost Comparison:	1/4

Concept 27B

Difficulty Level:	3/4
Time Consumption:	4/4
Cost Comparison:	3/4

Concept 28B

Difficulty Level:	2/4
Time Consumption:	2/4
Cost Comparison:	2/4

1 = Easiest, least amount of time, cheapest
4 = Most difficult, most amount of time, most expensive

DEVELOPMENT

From sketch to scale model to full scale model, Sötella changed slightly every step of the way. First it was too big, then it was too small, then it was too organic but all of those changes resulted in a cleaner silhouette.

LOOKS-LIKE MODEL

SITS-LIKE MODEL

METAL FRAME WORK

VAC FORMING SEAT PAN

ASSEMBLY


sötella

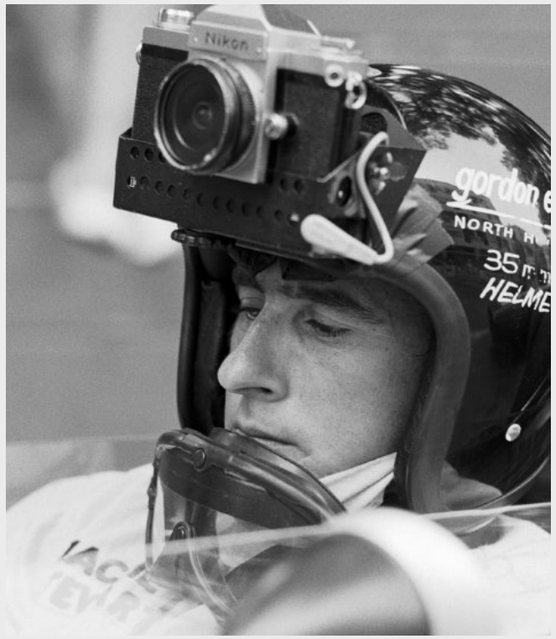

VIRBMOJO
Action camera for the active millennial.

The action camera market is expected to grow 14% annually over the next 4 years. With the popularity of social media, more people are looking for ways to share their experiences.

Design the next generation Garmin action camera.

BADASS

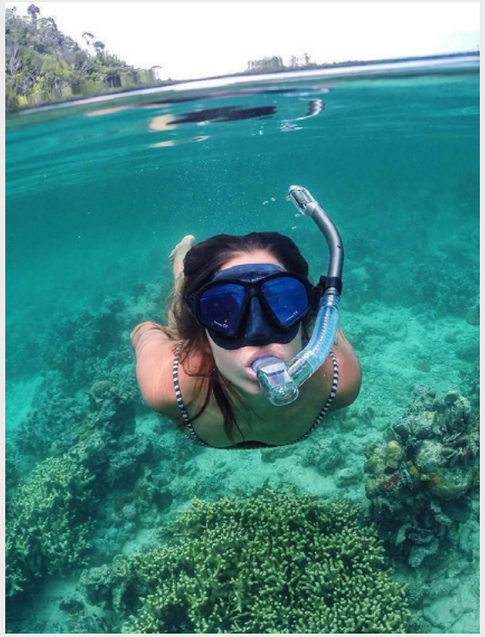
Action cameras were originally created for extreme sports and truly badass athletes.

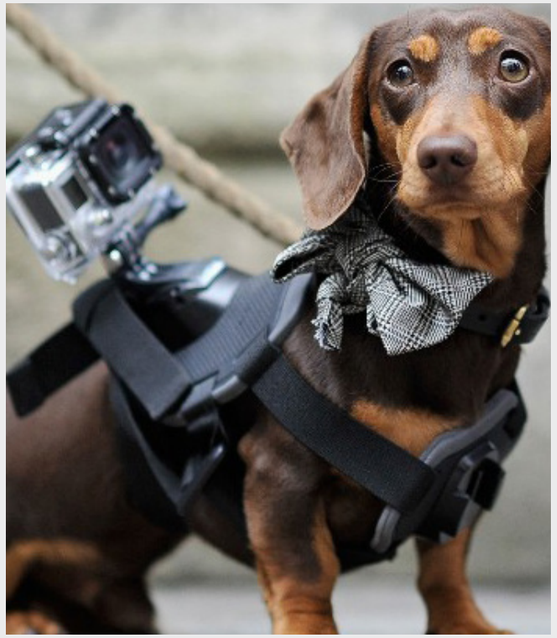


GARMIN > GoPro Be a HERO.

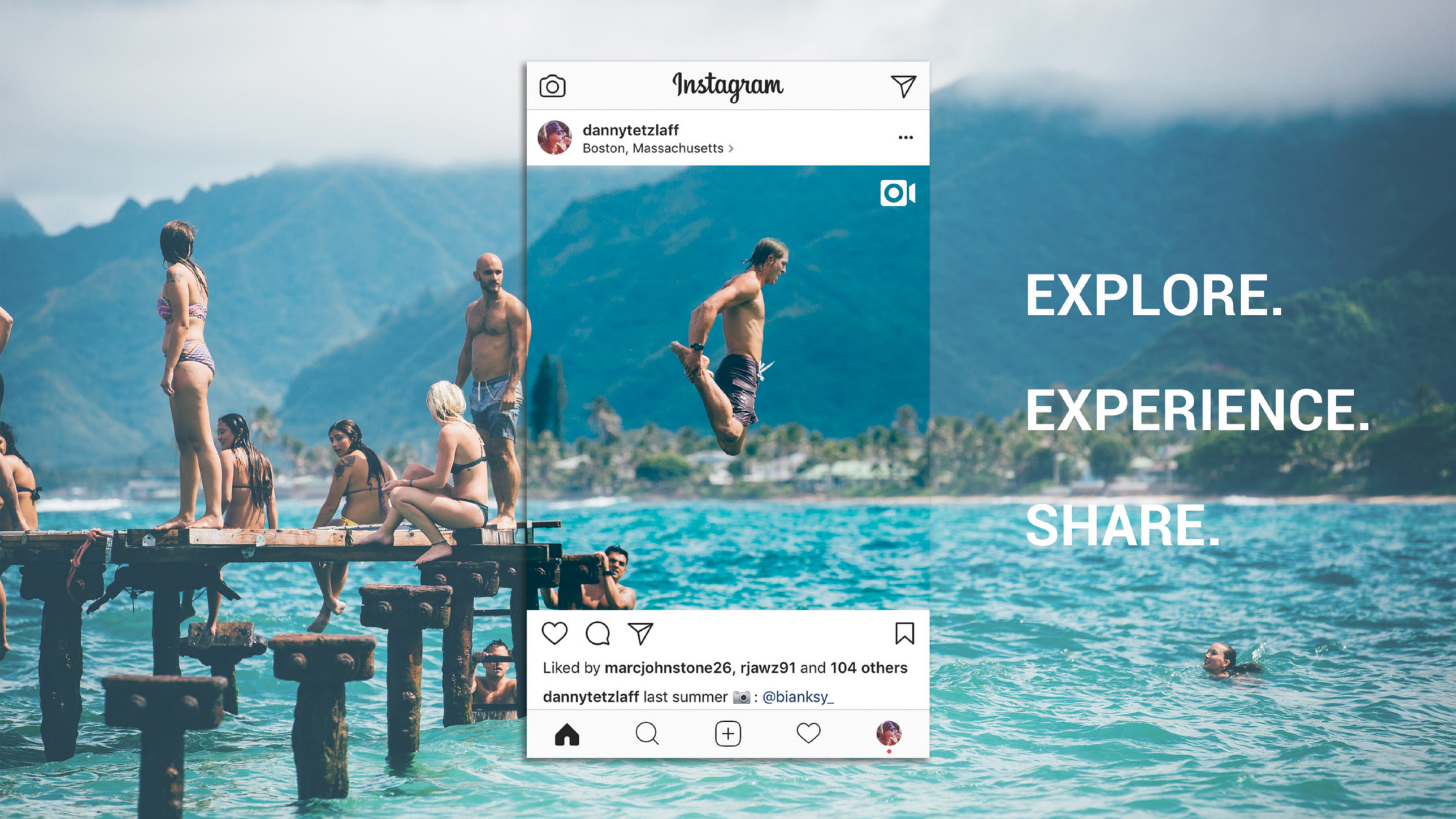
(SLIGHTLY LESS) BADASS

Action cameras have grown by appealing to ordinary consumers. In particular, Active Millennials.





GARMIN < GoPro Be a HERO.

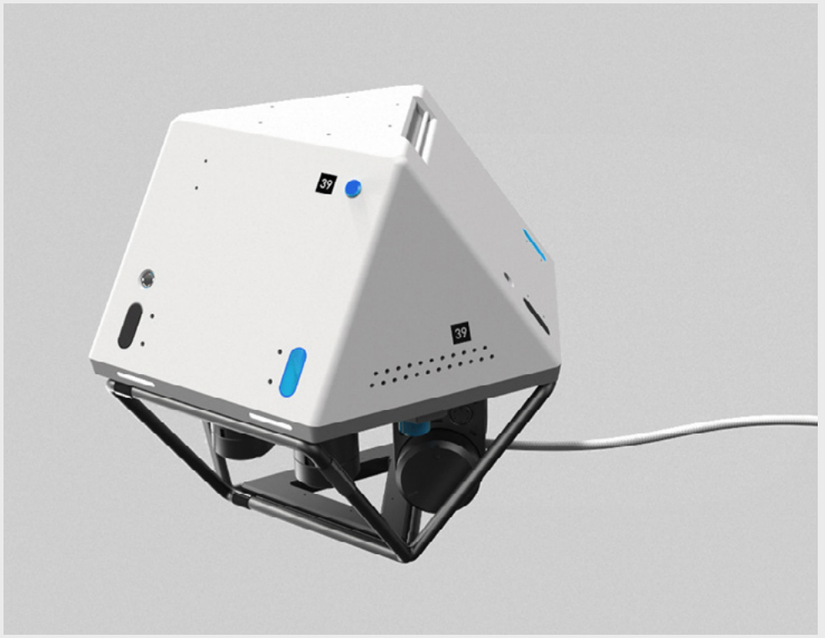

Instagram
dannytetzlaff
Boston, Massachusetts
Liked by marcjohnstone26, rjawz91 and 104 others
dannytetzlaff last summer : @bianksy_
EXPLORE.
EXPERIENCE.
SHARE.

PRODUCT INSPIRATION

A soft, simple form with interesting surface changes and attention to detail coupled with a light color pallet with pops of an accent color allows a product to feel approachable yet sophisticated and appeal to the millennial consumer.

FORM

DETAIL

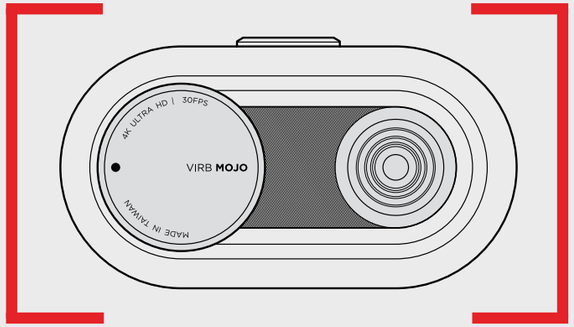


CMF

AESTHETIC TARGET

I was challenged with creating a new icon for the action camera. Something that Garmin could own. I focused on a form somewhere between the Ultra 30 and the X. Not too friendly but not too serious.

VIRB**ULTRA 30**



VIRB**MOJO**

VIRB**X**

VIRB**360**

SKETCH DEVELOPMENT

With most action cameras being rectilinear forms, the pill shape seems to carry its own personality. It's fun, unique, and not something you currently see in the action camera market.

FORM DEVELOPMENT

Two dimensional sketches can only go so far with a product like this. It was important to get models in my hand to evaluate the design from every side in order to make justified decisions.

FINAL CONCEPT

Taking design cues from high end photography and videography equipment, such as the anodized metal details, allows the cute and fun form to simultaneously feel serious and high quality.

Power Switch
Slide to turn on and reveal camera lens.

Recording Indicator

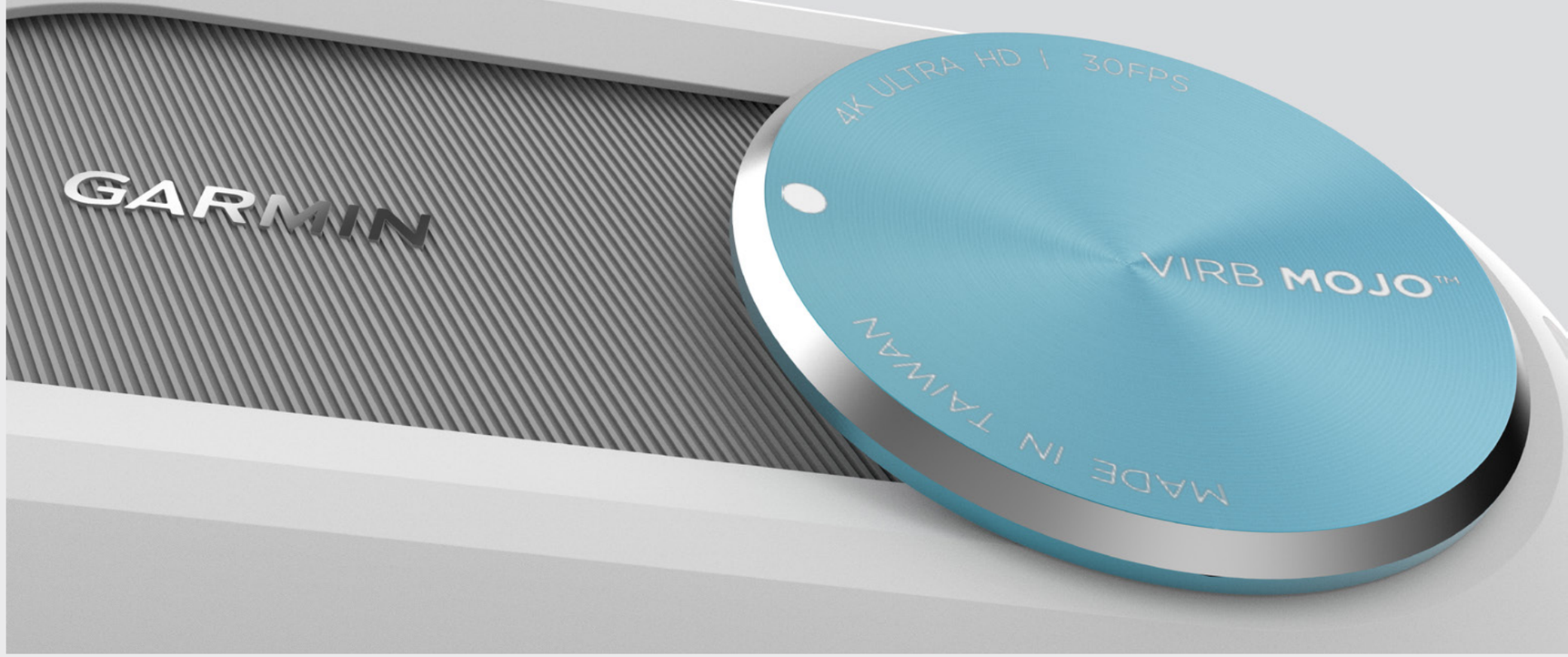
Tripod Mount
Also compatible with standard action camera mounts via separate accessory.

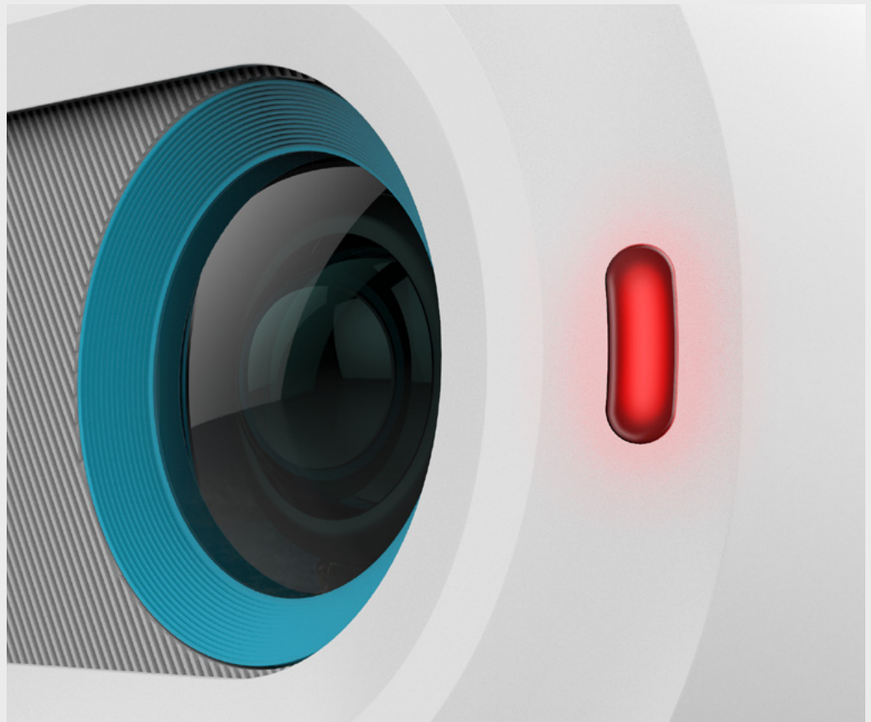
Pogo Pin Charging

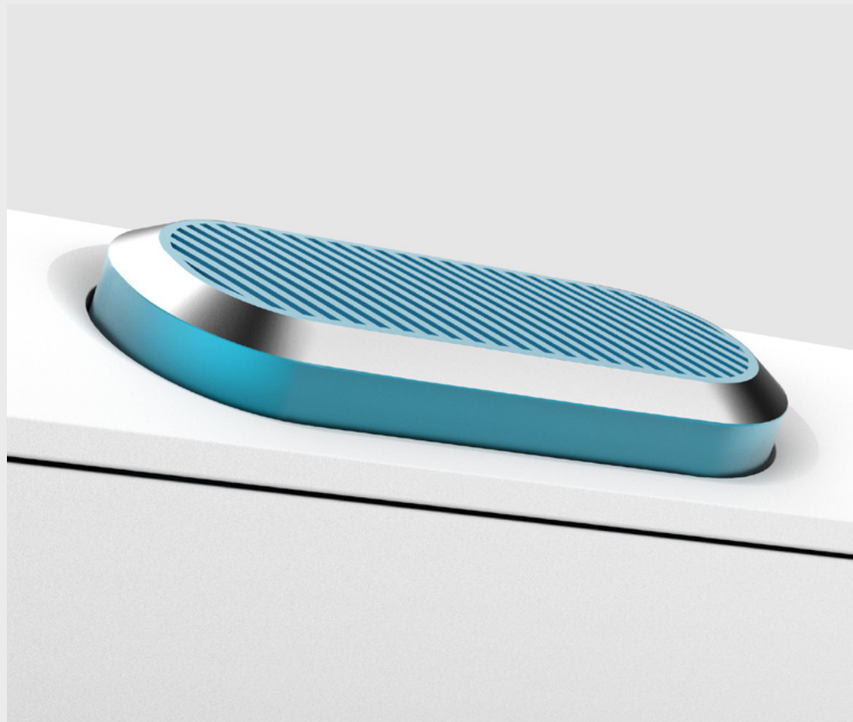
Touch Surface
Swipe through various shooting modes.

VIDEO PHOTO BURST BOOMERANG LIVE | SHARE


HDMI


GARMIN
4K ULTRA HD | 30FPS
VIRB MOJO™
MADE IN TAIWAN






GARMIN
MADE IN TAIWAN
4K ULTRA HD | 30FPS
VIRB MOJO
W 4K30
00:19
MADE IN TAIWAN
4K ULTRA HD | 30FPS
VIRB MOJO

PACKAGING

Clean, simple packaging matches the overall aesthetic of the camera and the story it is trying to convey.


W 4K30
00:19

CO-OP Experience

Throughout co-op, I've had the privilege of working on projects for these clients.

THANK YOU!

More work + full resolution portfolio and
process books available at **jackthrun.com**

jackthrun@gmail.com
973.349.0160