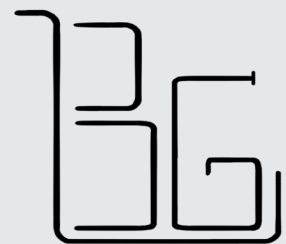
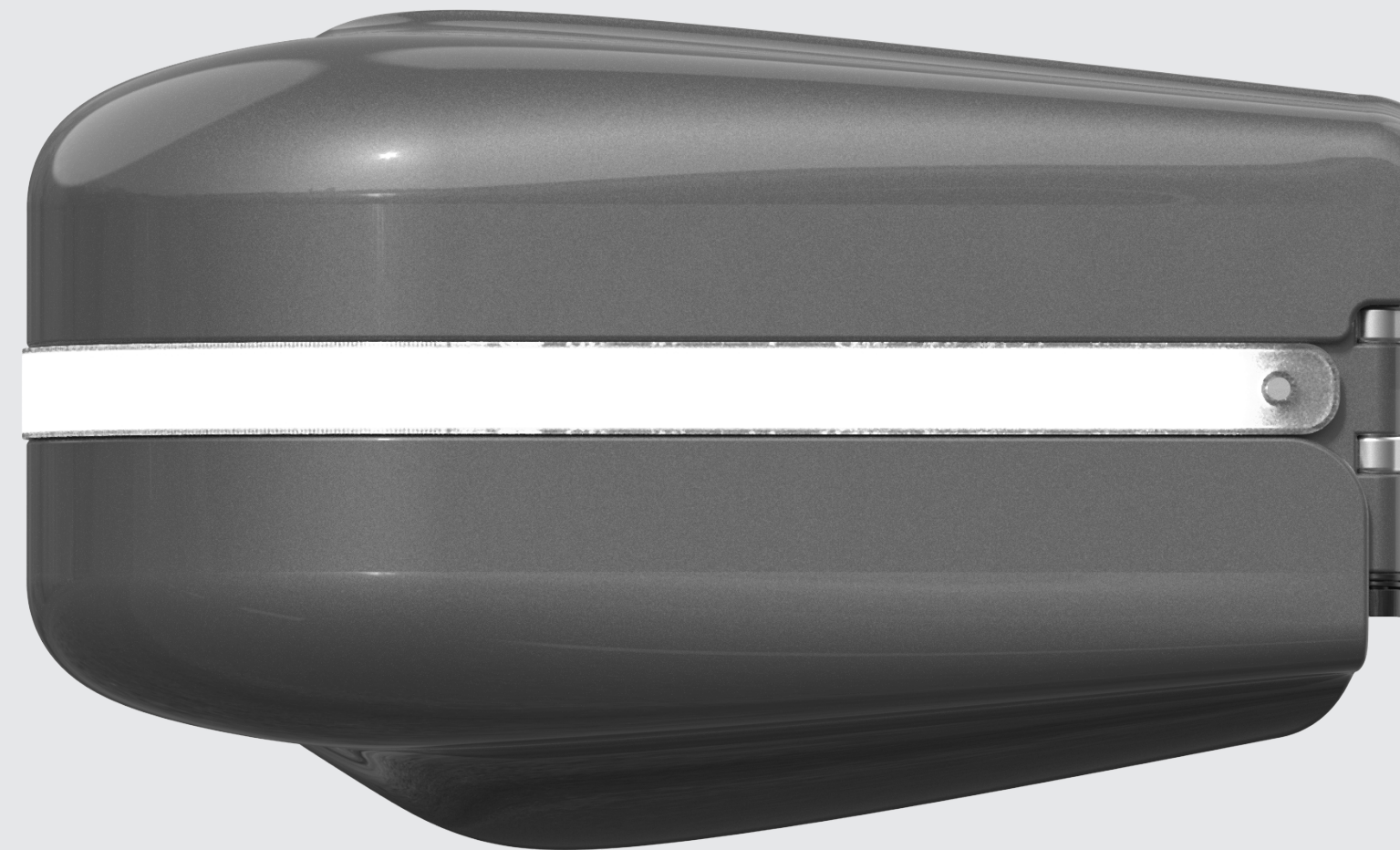


# Zephyr

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**Bike Hand Guard**

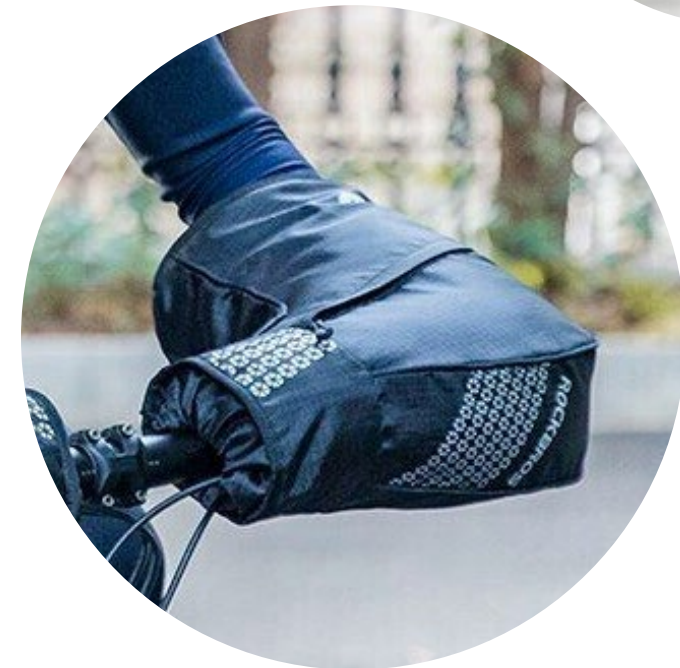
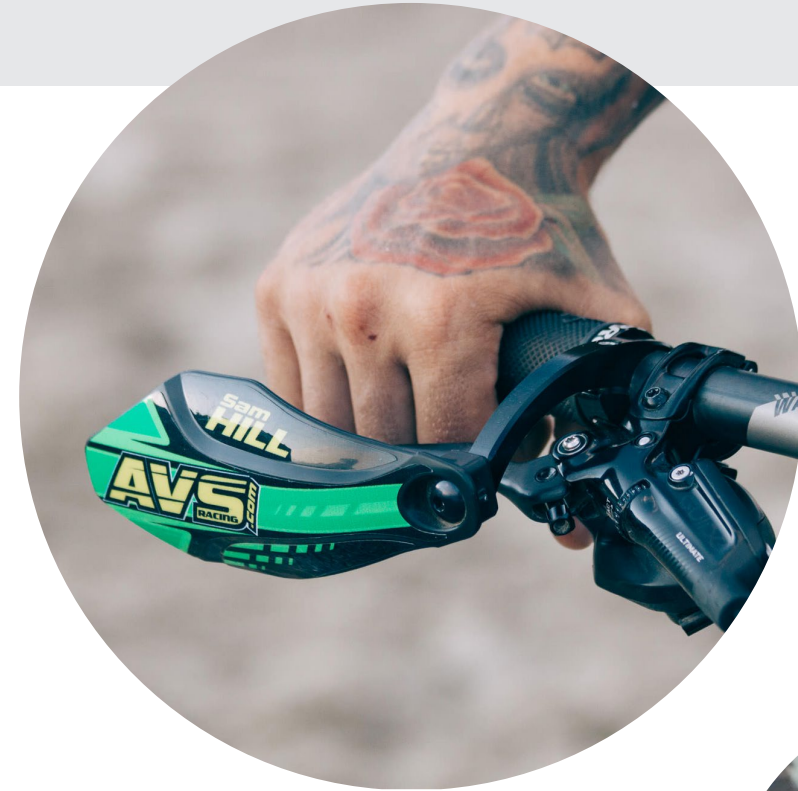


## Bike Hand Guards

Current guards designed for **impact or cold protection**,  
**not both together**



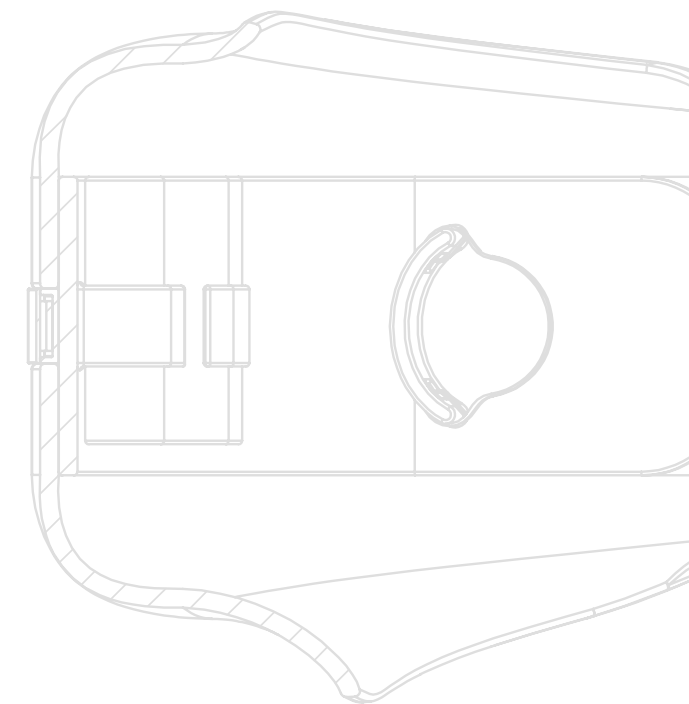
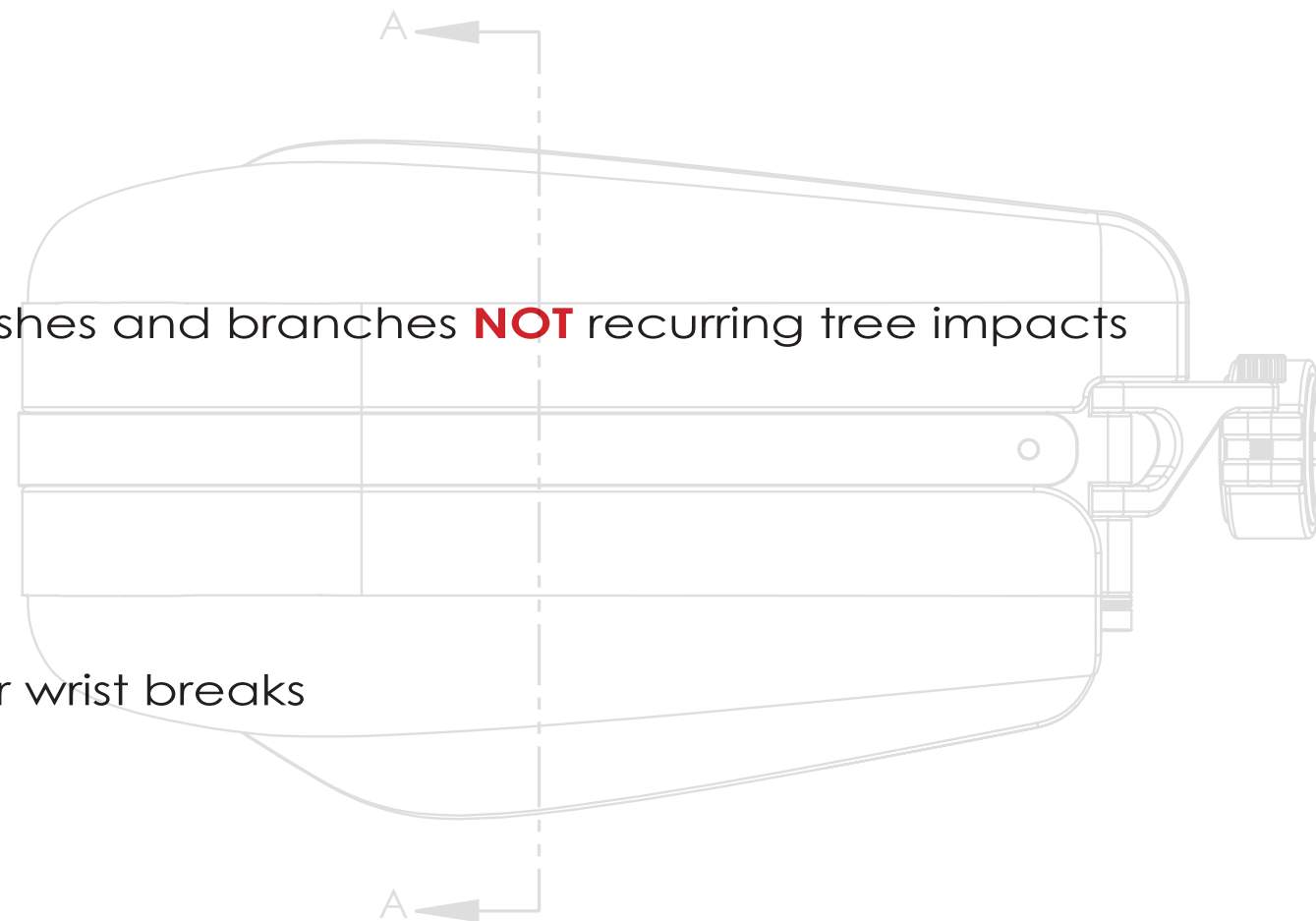
Current guards **don't have lights** so users must buy a  
separate lighting system



Create a **low profile** hand guard with **lights** that protects from the **wind and cold** for everyday bikers

**Secondary needs include:**

- Protect from **minor impacts** like bushes and branches **NOT** recurring tree impacts
- LED headlight integration
- Increased **safety considerations** for wrist breaks



SECTION A-A  
SCALE 1 : 2





# Mountain Biking



**Motorcycle guards offer the best wind protection**, so replicating those enclosure styles present a unique opportunity for bikes

**Styles:**



Full wrap



MX open style

# Motorcycles



# Moto Cross



# Homemade





# Mountain Biking

Tailored for high speed debris impacts on **downhill trails**

Able to **commit harder** into tight turns knowing there is protection

Lower profile for **maneuverability** and control access



## Features:

Foam Inserts



Cockpit Access



## Daily Riders

- **Casual everyday riders** of all ages
- Commuters
- Nighttime Riders
- Lives in **cold and windy** environments
- Doesn't want bulky mitts

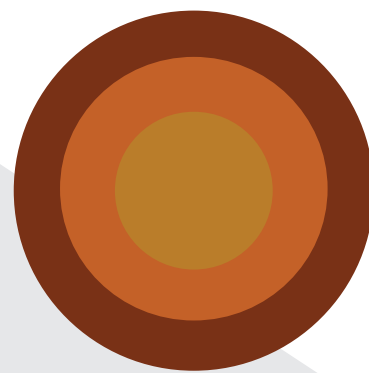
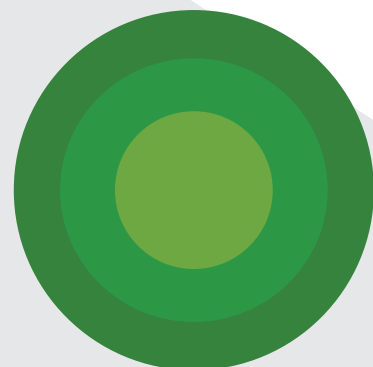
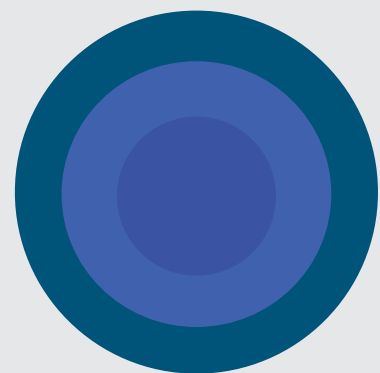
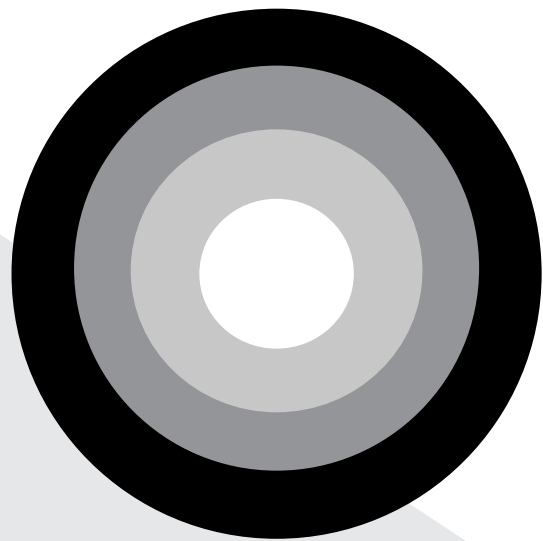




## Colors

Targeted user likes **understated colors**

**Natural tones** that compliment nature



## Shields

Cold Protection

Neoprene with Styrene Butadiene Rubber Core (SBR)



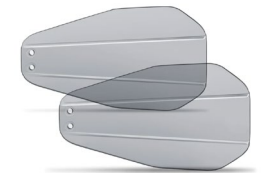
3M THINSULATE thermal fleece



420D nylon thermoplastic



Polycarbonate



**Polypropylene thermoplastic**



## Mounts

**6061-T6 Aluminum**

High-Density Polyethylene



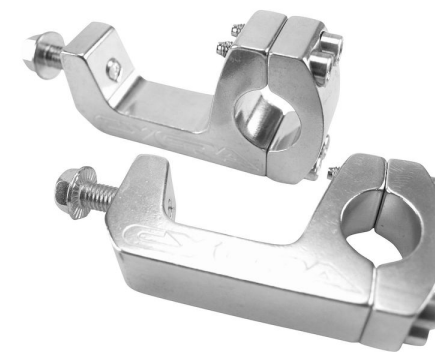


## RockBros

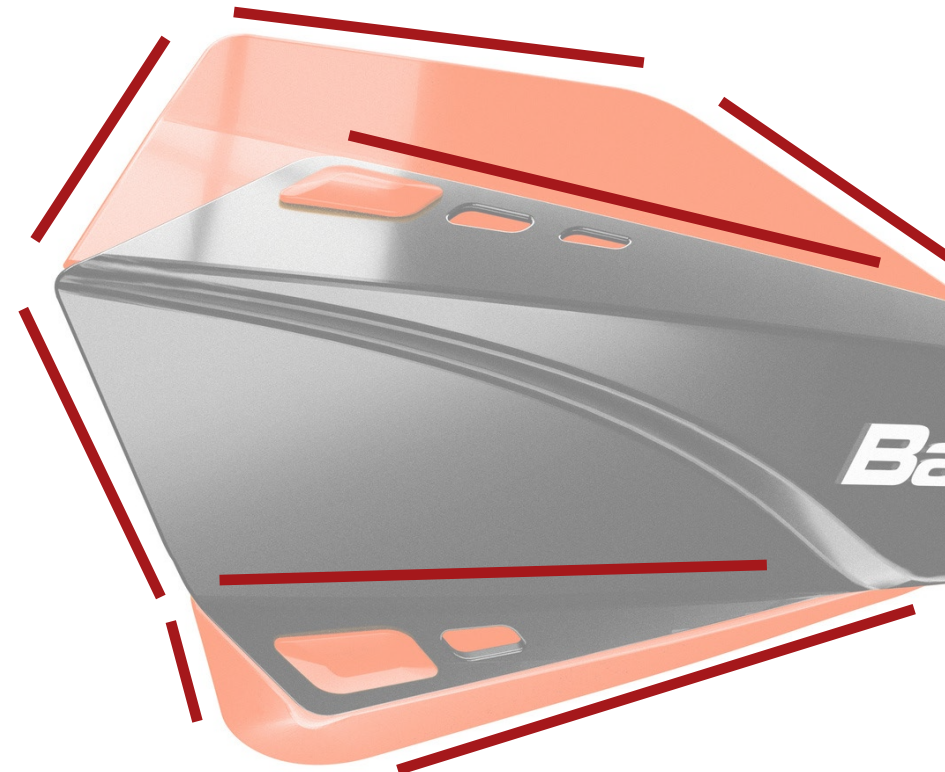
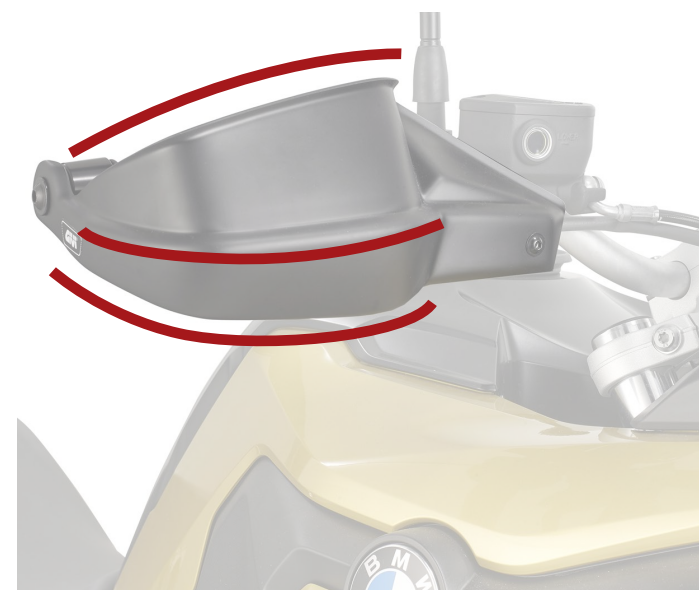
## BarkBusters

## GEO

- Low speeds yield angular designs
- Higher speeds yield smoother aero



2 Piece  
Handlebar Clamp



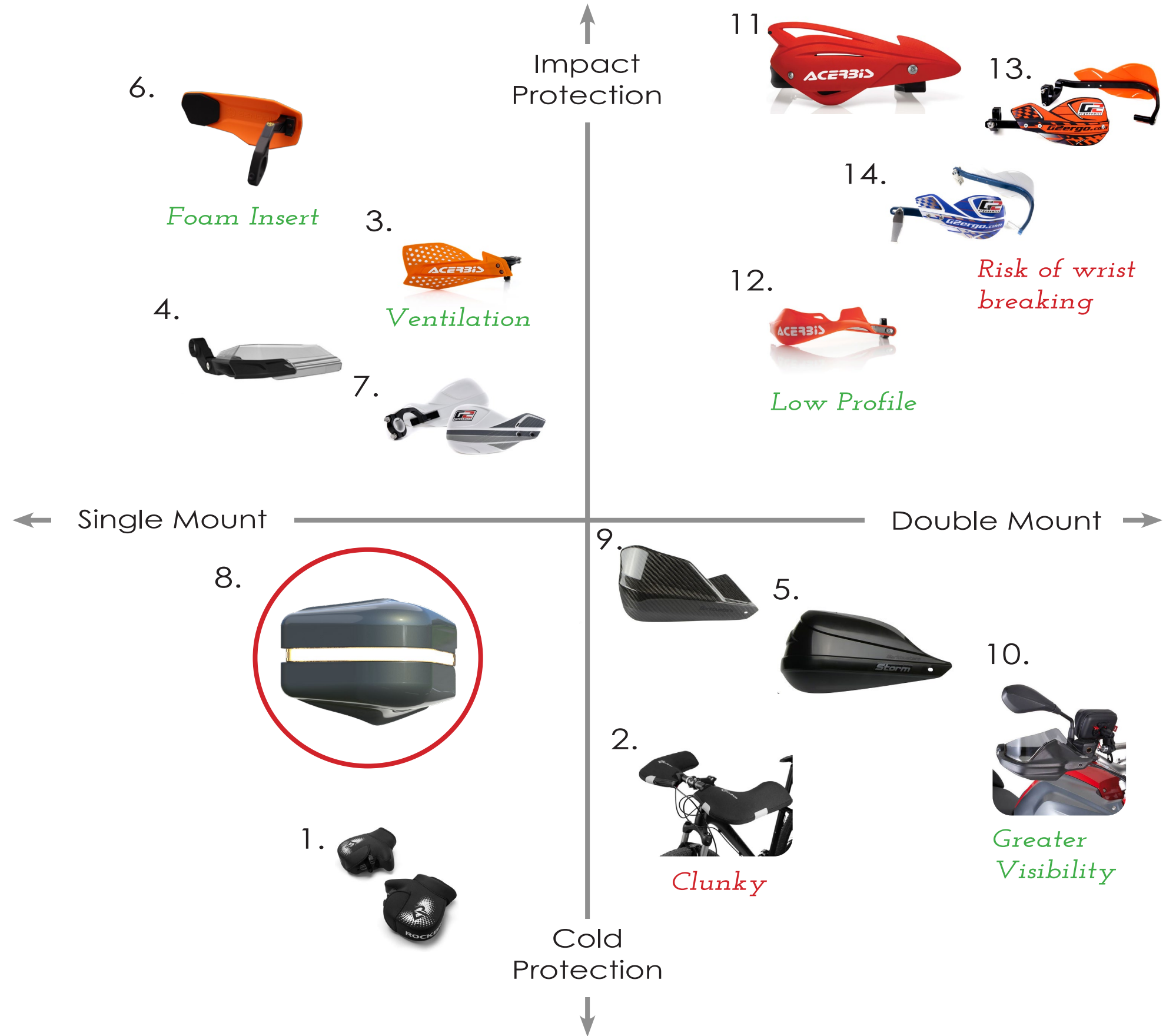


# Opportunity Quadrant

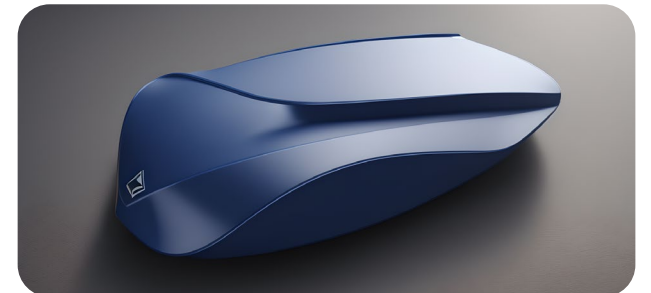
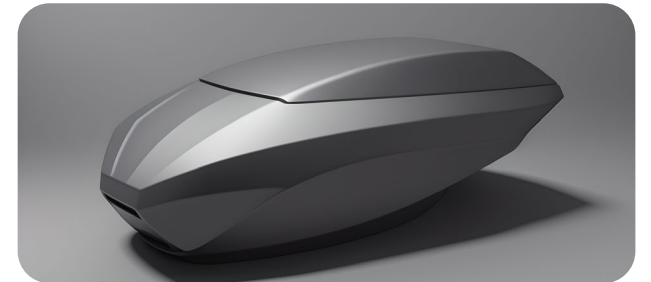
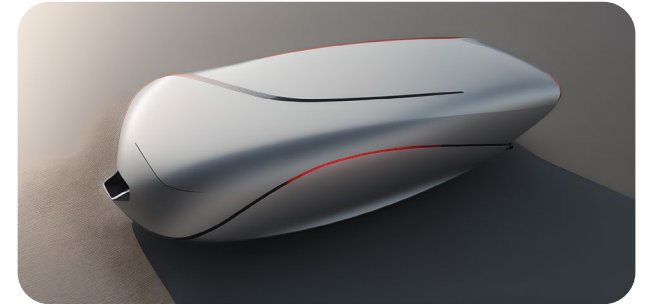
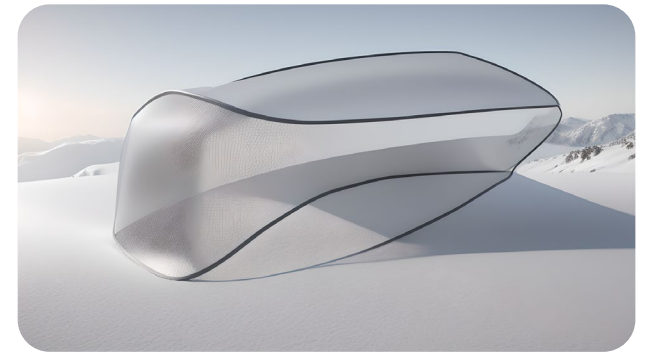
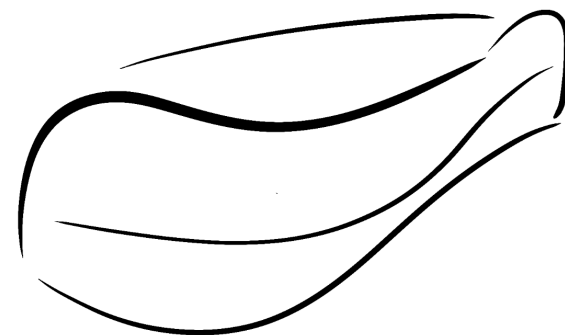
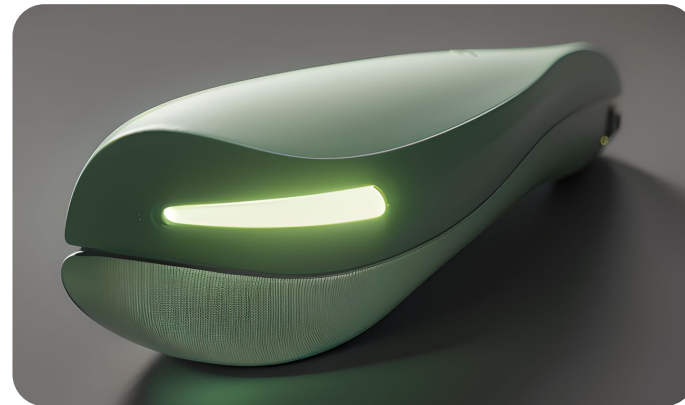
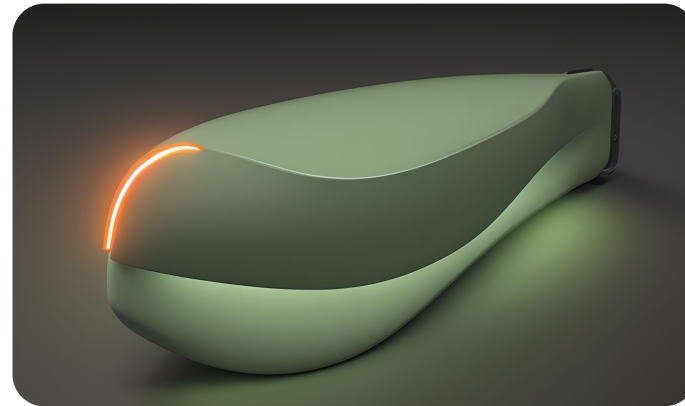
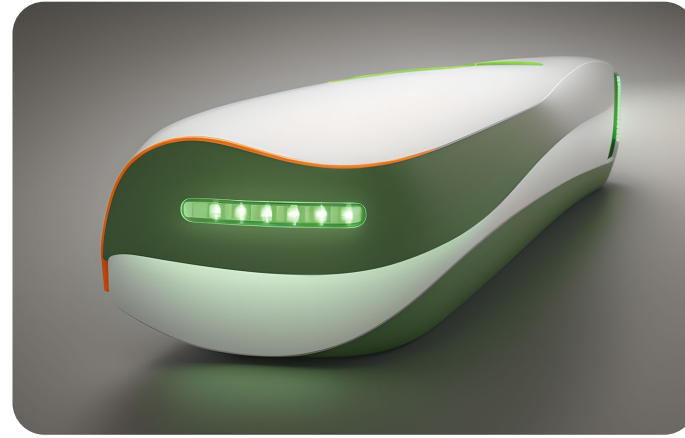
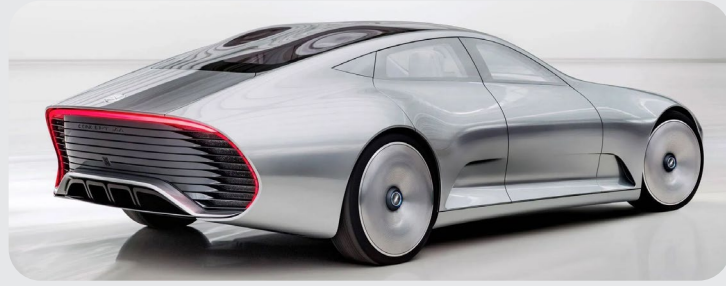
Opportunity exists in **easily installed** guards that **encompass the hand more** than current bike offerings

- 1. RockBros Round Mitt \$20
- 2. Rockbros Mitt \$23
- 3. Acerbis X-Ultimate \$40
- 4. BarkBuster Aero \$50
- 5. BarkBusters Storm \$55
- 6. Nock MTB \$68
- 7. G2 XC1 \$70
- 8. **Opportunity \$75**
- 9. BarkBusters Carbon \$90
- 10. Givi BMW \$95
- 11. Acerbis Tri Fit \$100
- 12. Acerbis Rally Pro \$105
- 13. G2 Full Wrap \$115
- 14. G2 Fork Mounted \$120

↑  
-  
Cost  
↓  
+







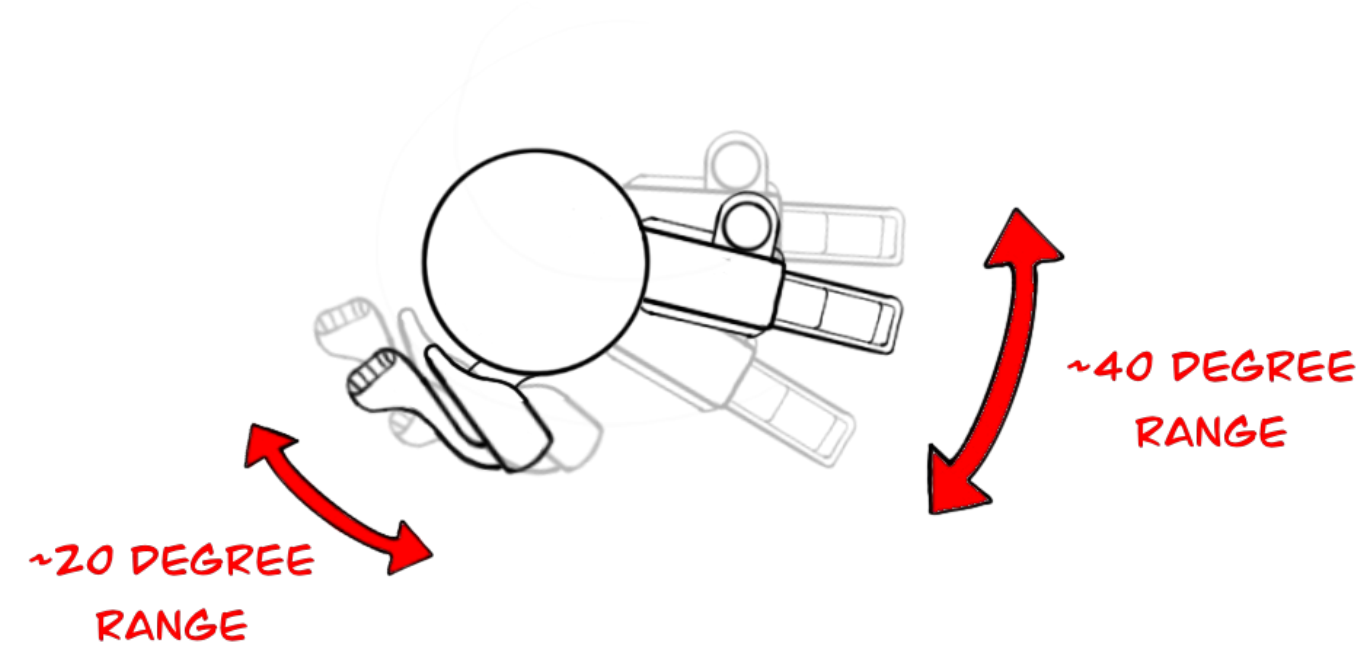
Vizcom AI Renders



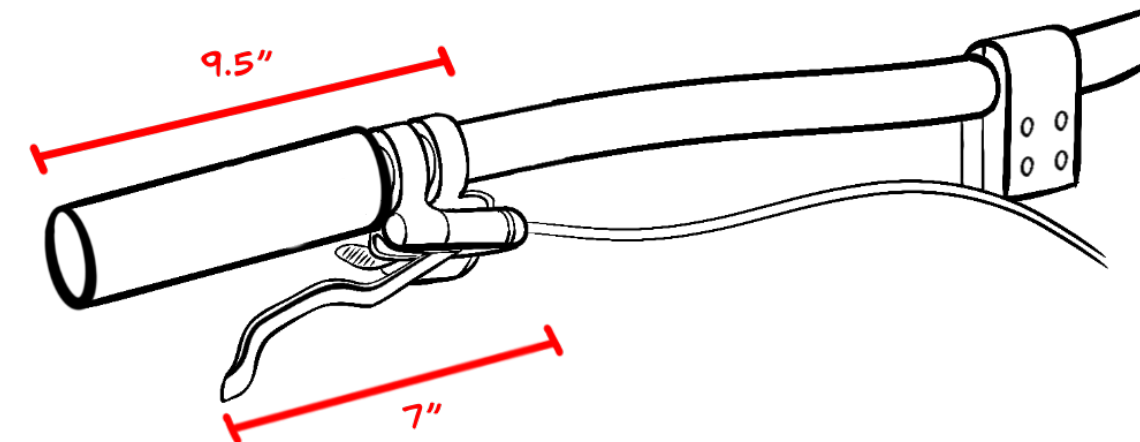
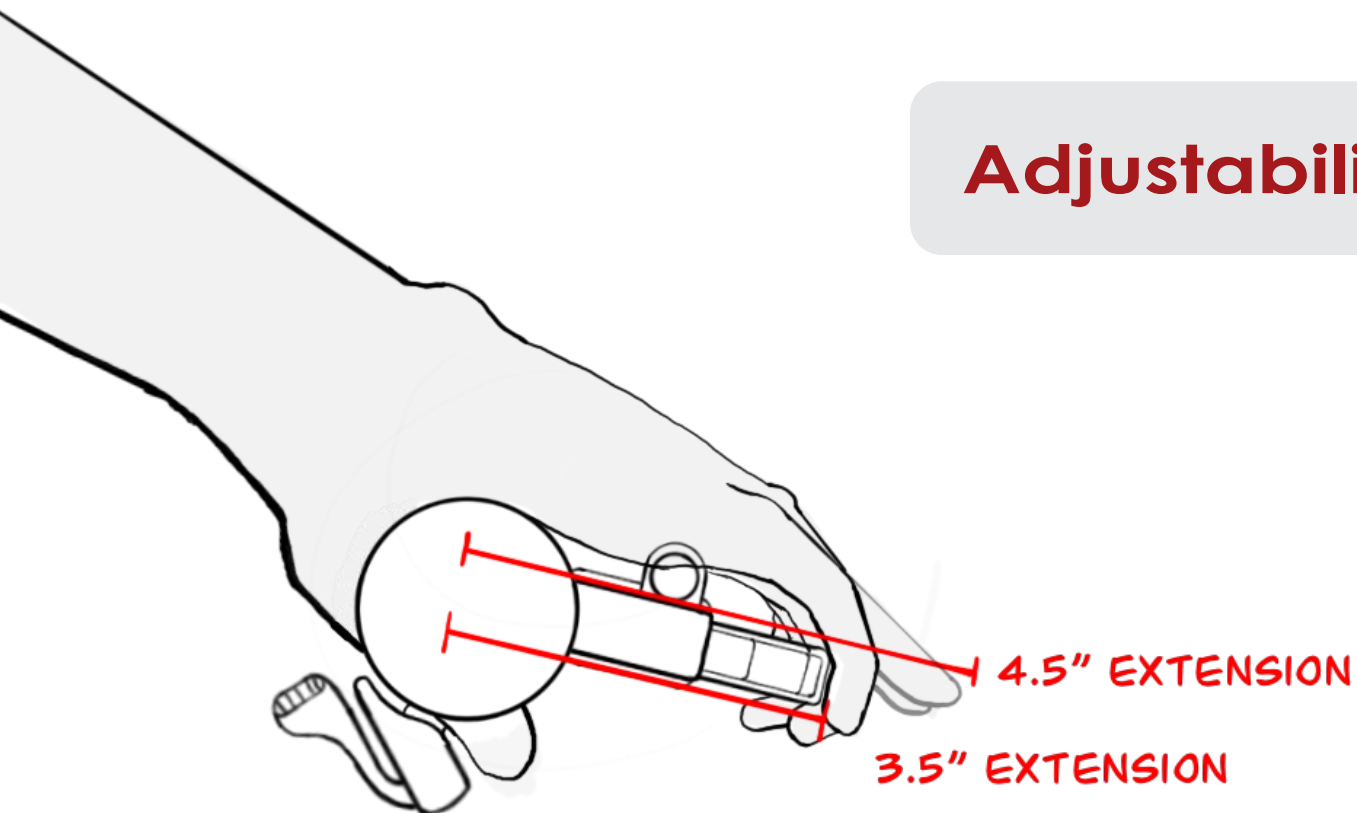
## Human - Handlebar Interaction

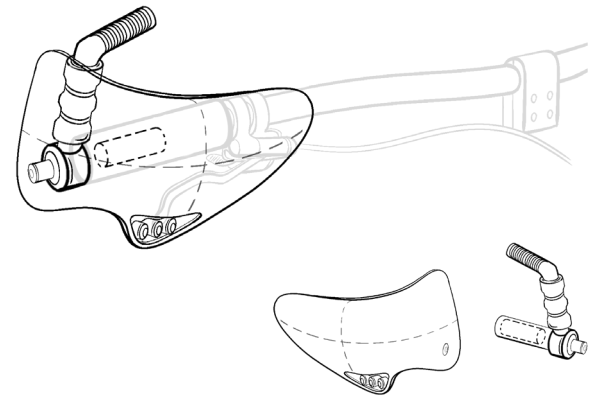
**Wrist angles vary** depending on the bike and user

Going over rough terrain or entering the **climbing position** can change wrist angles

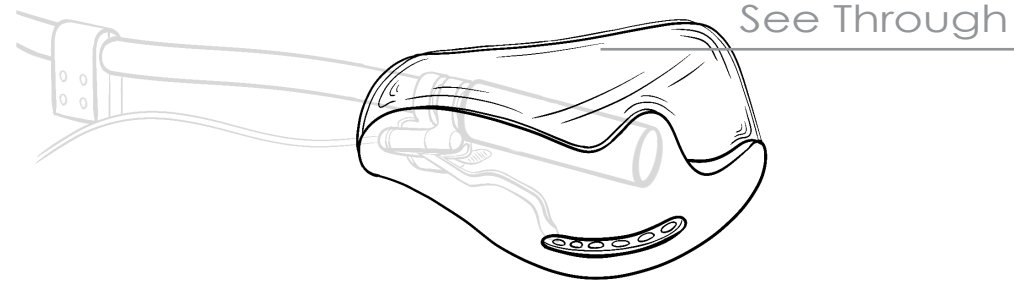


**Adjustability is Key**

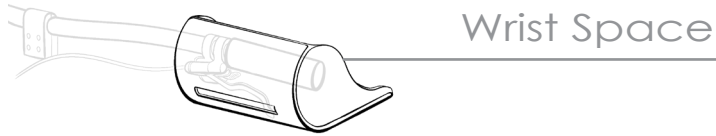
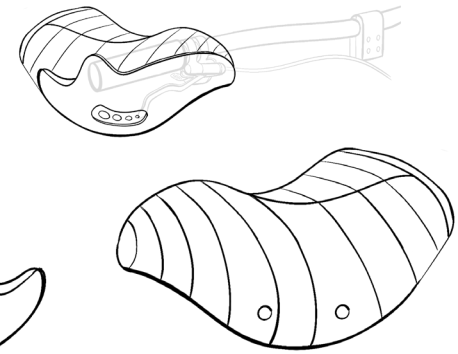




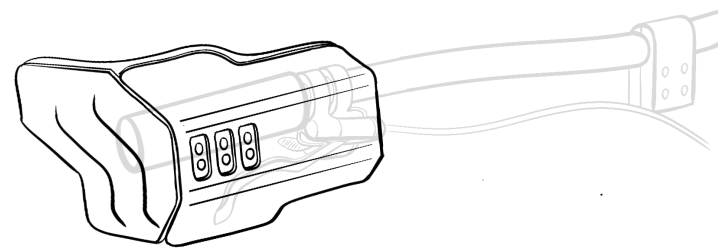
Heated Grip



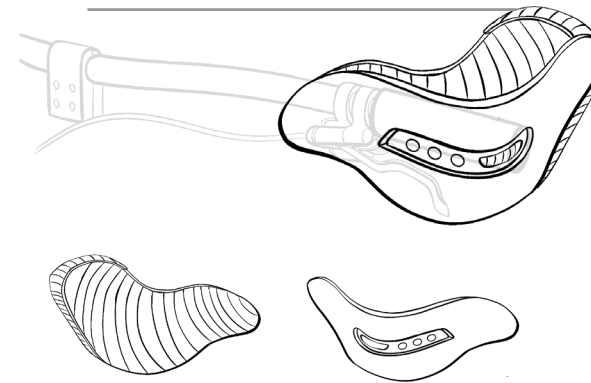
See Through



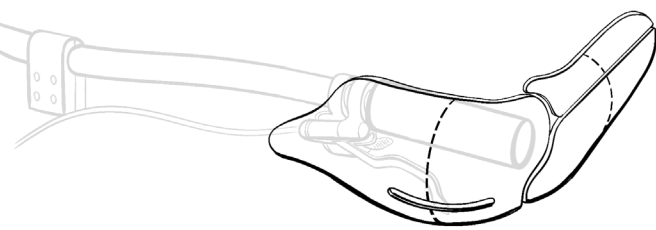
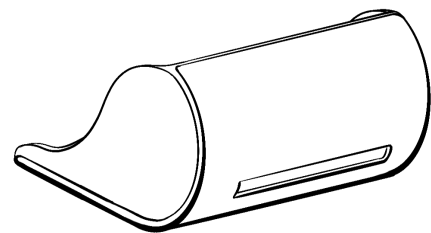
Wrist Space



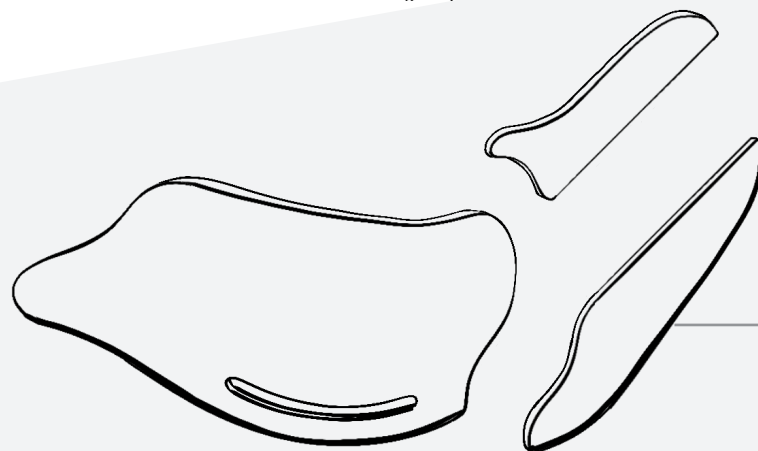
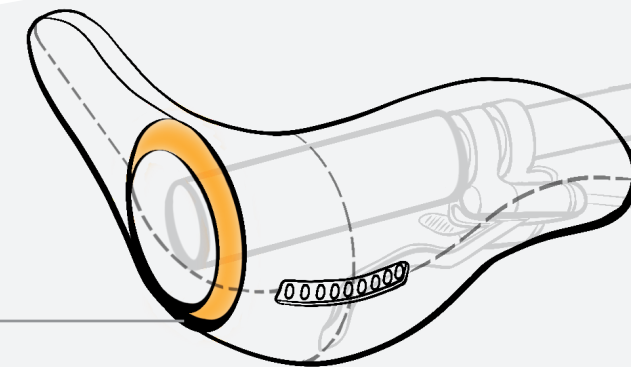
Warm Sleeve



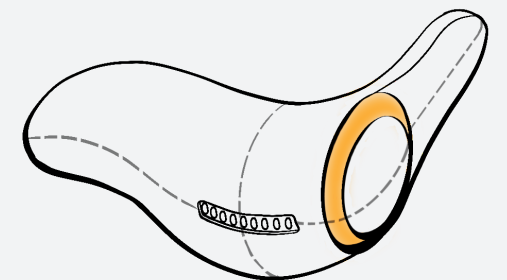
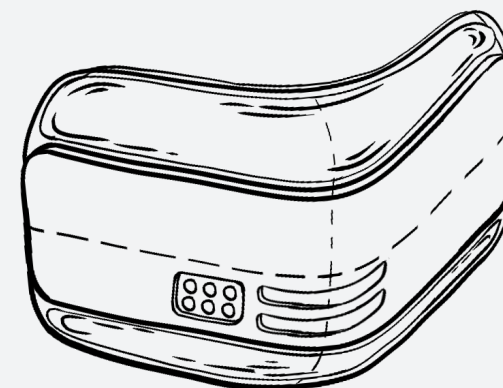
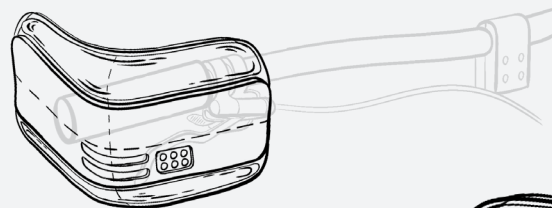
**LED integration**, turn signals, removable components and warm neoprene sleeves were all explored during this phase



Turn Signal



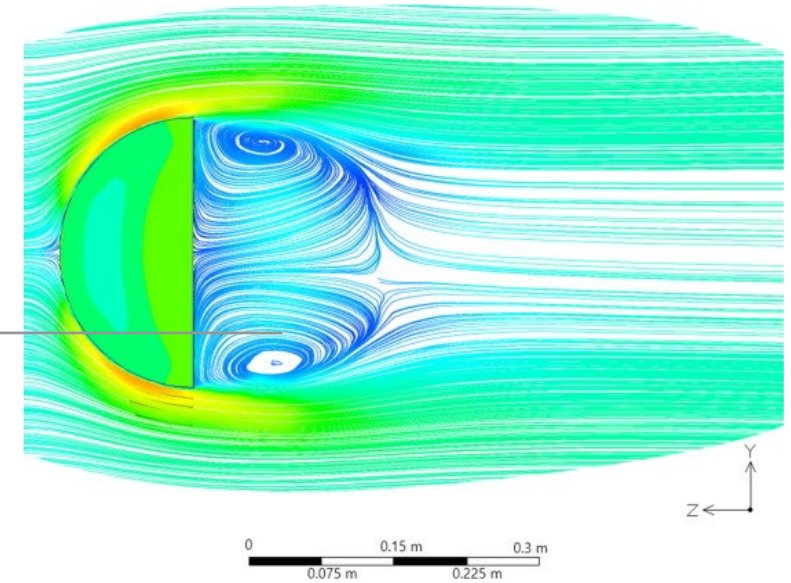
Removable Pieces







**Vortexes** created along trailing edges



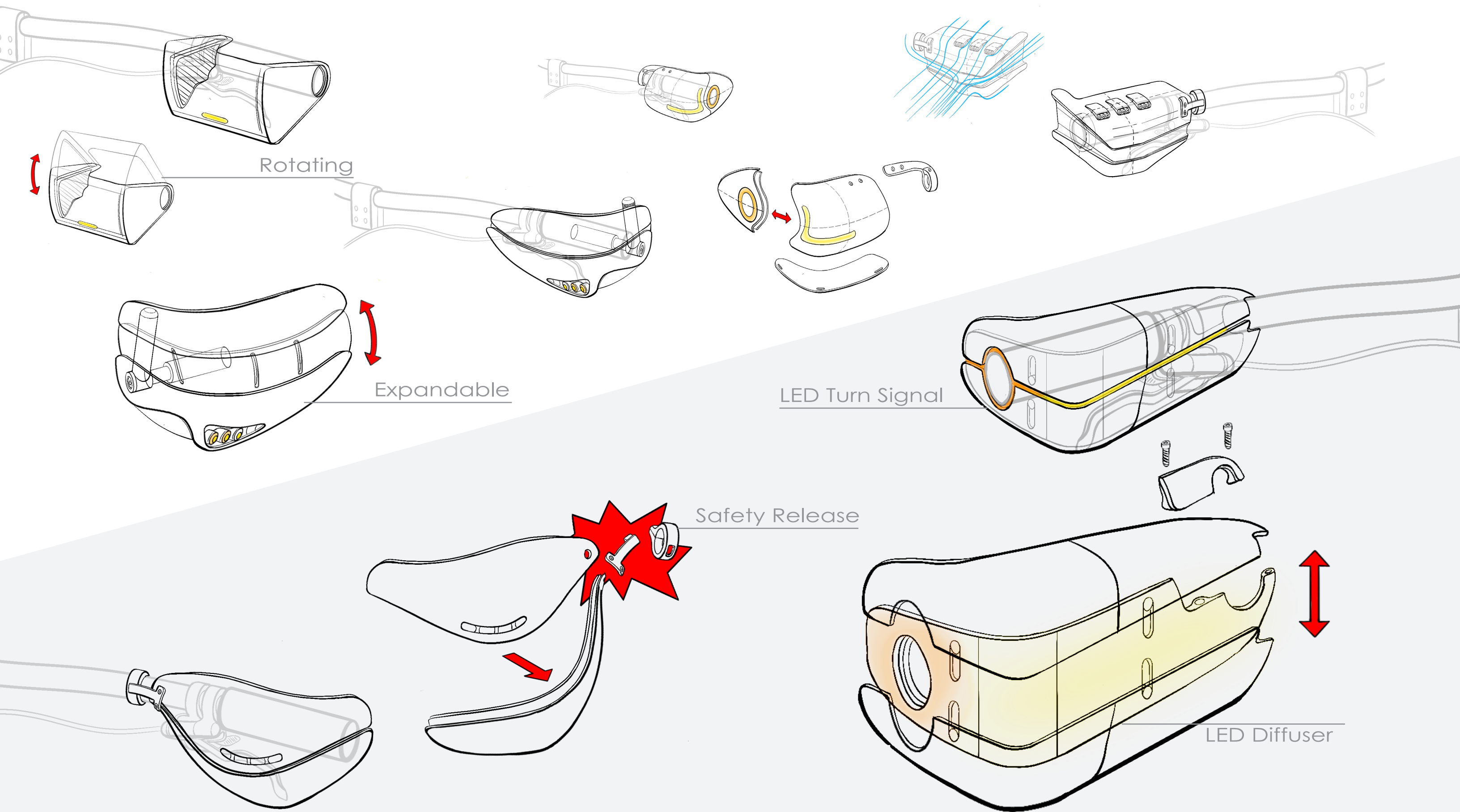
Maintain Undisturbed Air Pocket

**Wrist Most Vulnerable**  
To Wind

Air Diverting







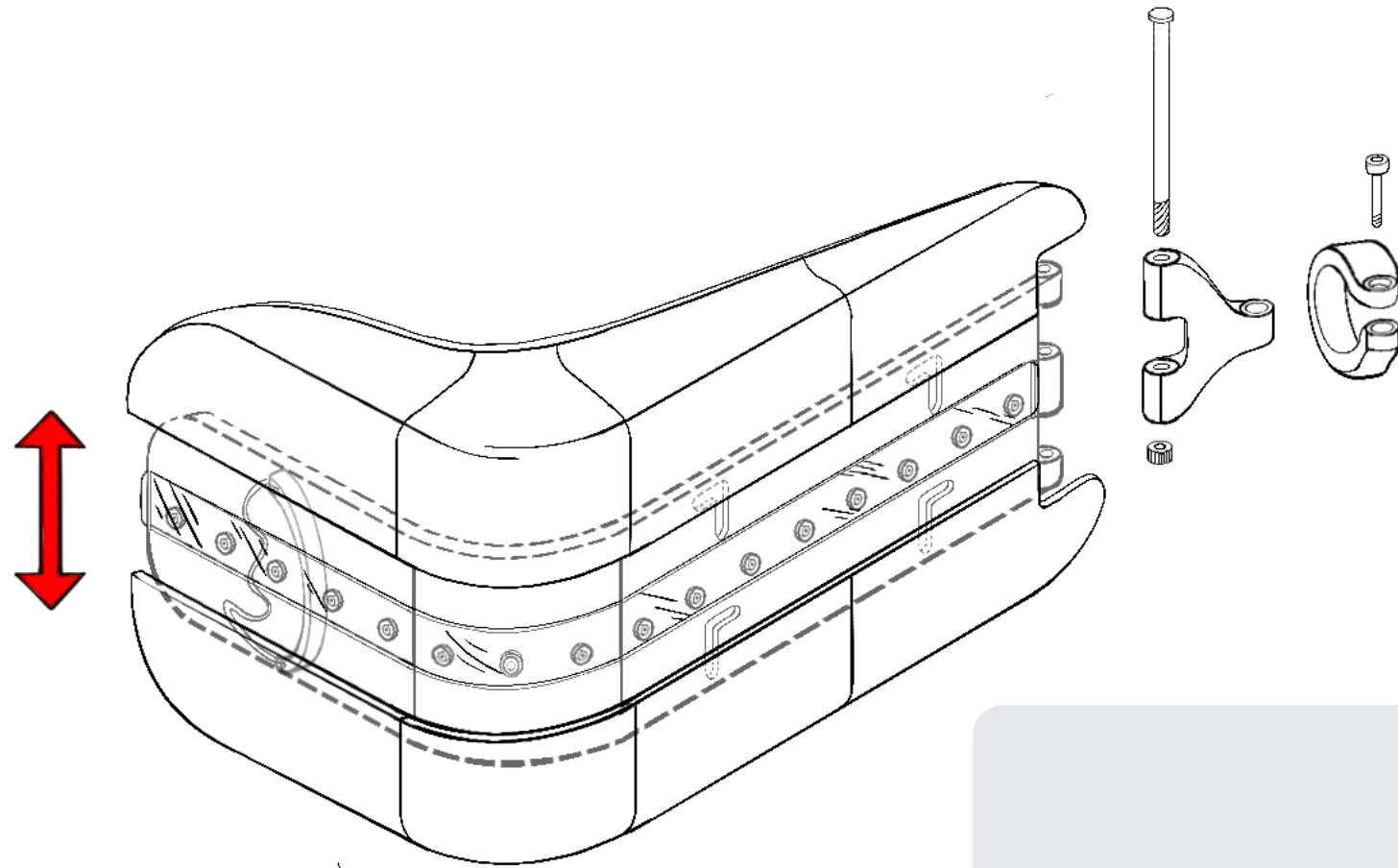
Rotating

Expandable

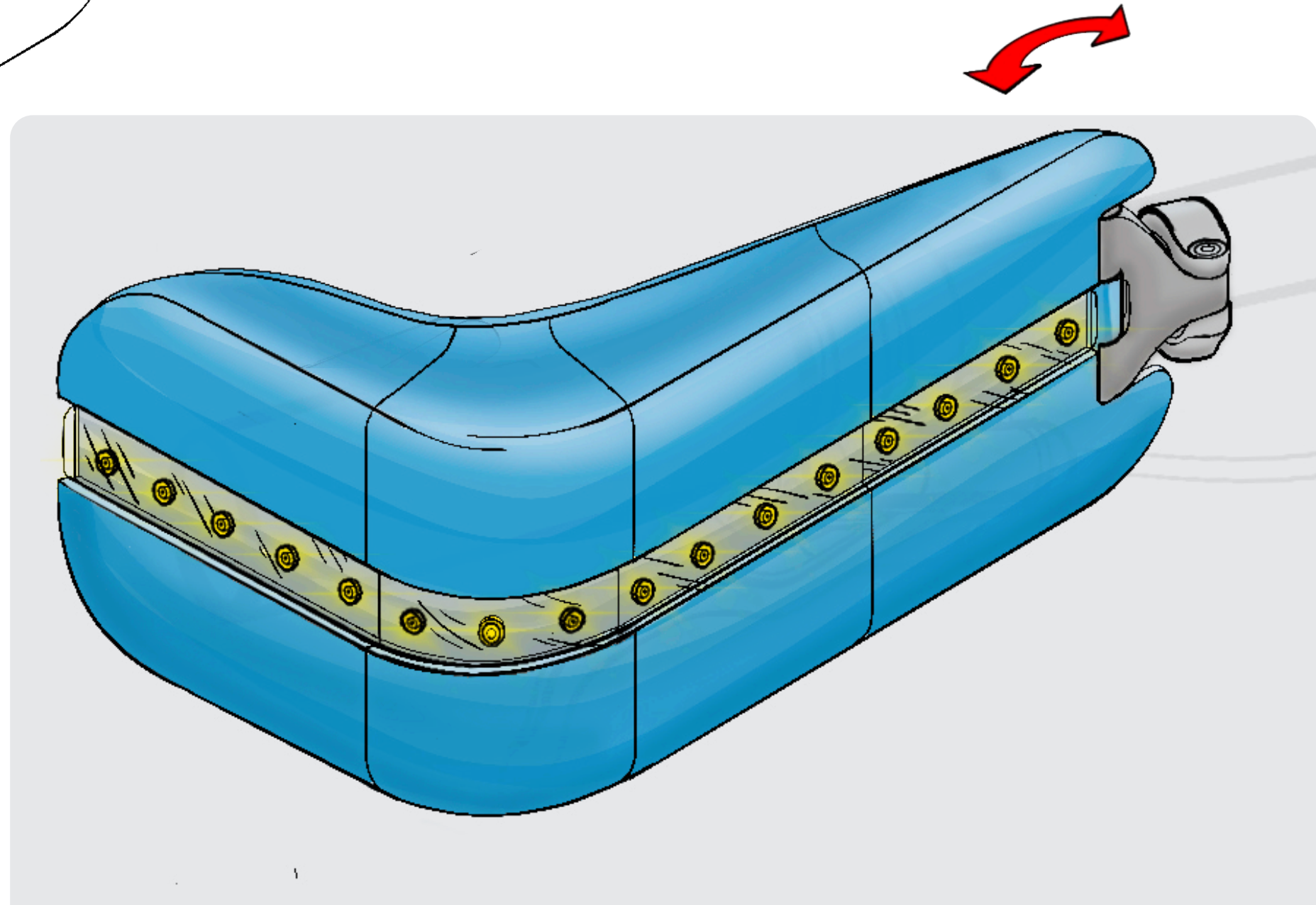
Safety Release

LED Turn Signal

LED Diffuser



**Expandable** for different user needs, Zephyr prioritizes safety with its **break away feature** while keeping your hands warm and protected





# Zephyr

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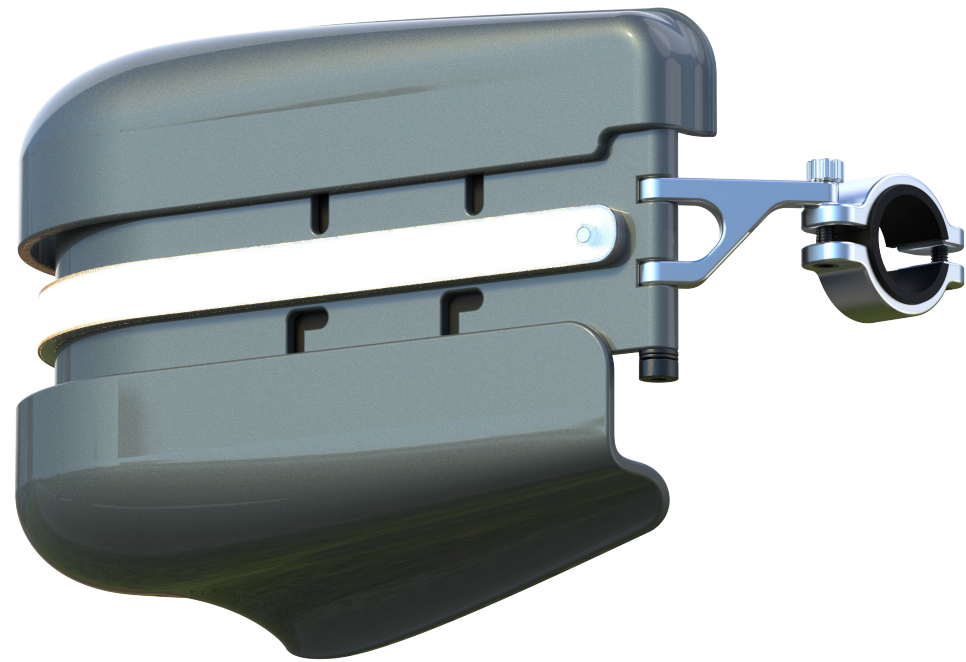




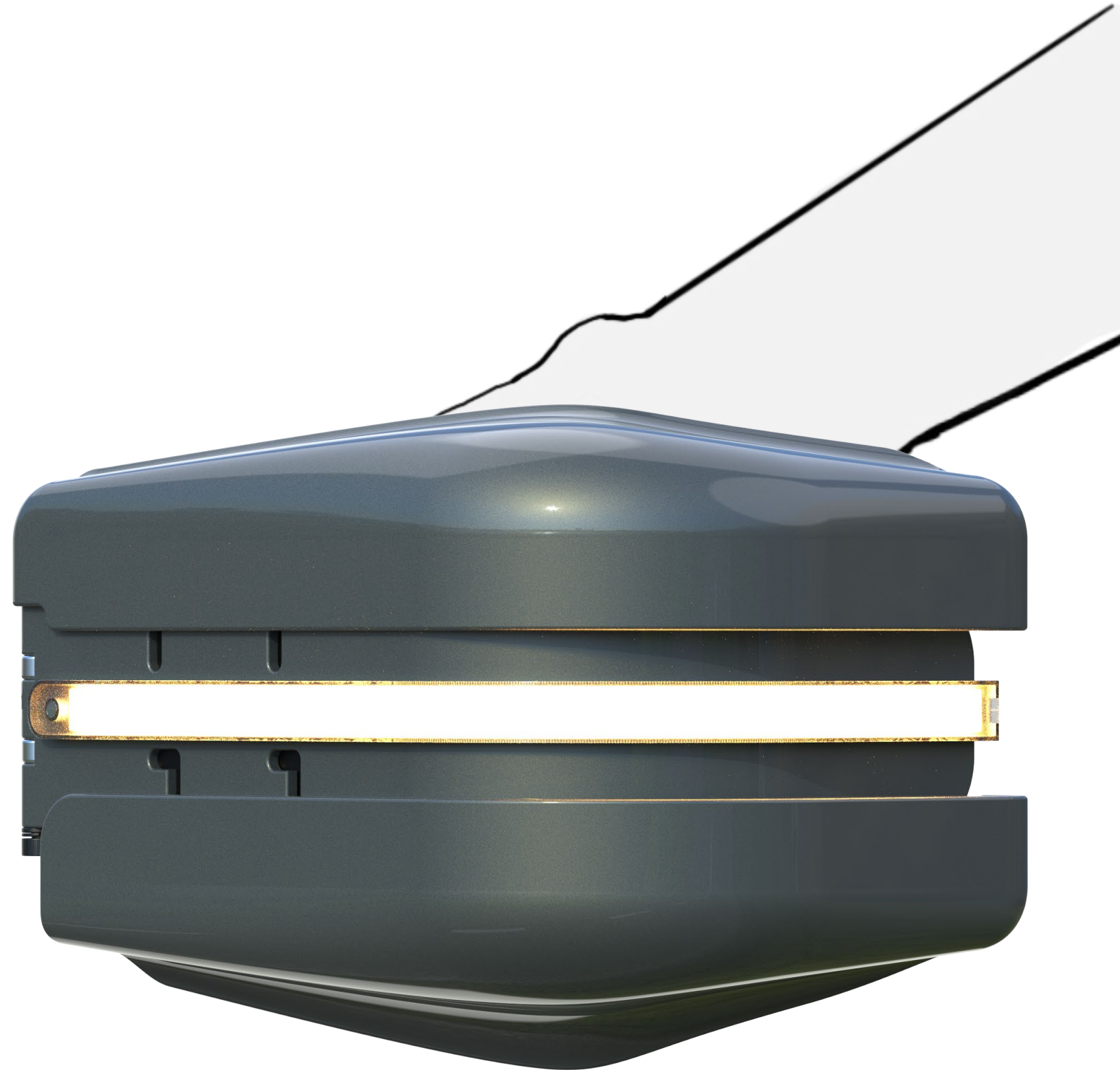


Model confirmed accurate dimensions,  
scale, and function

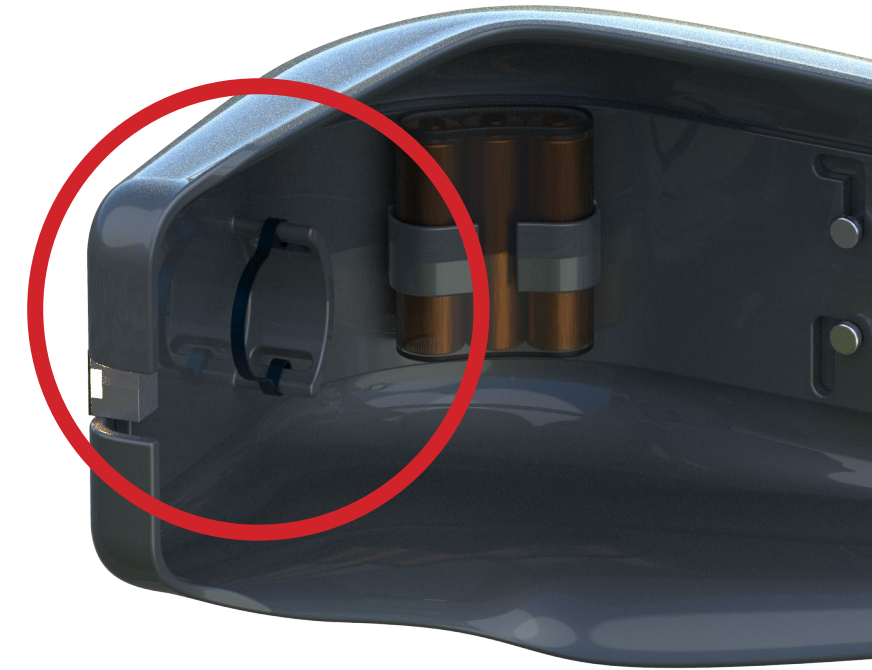
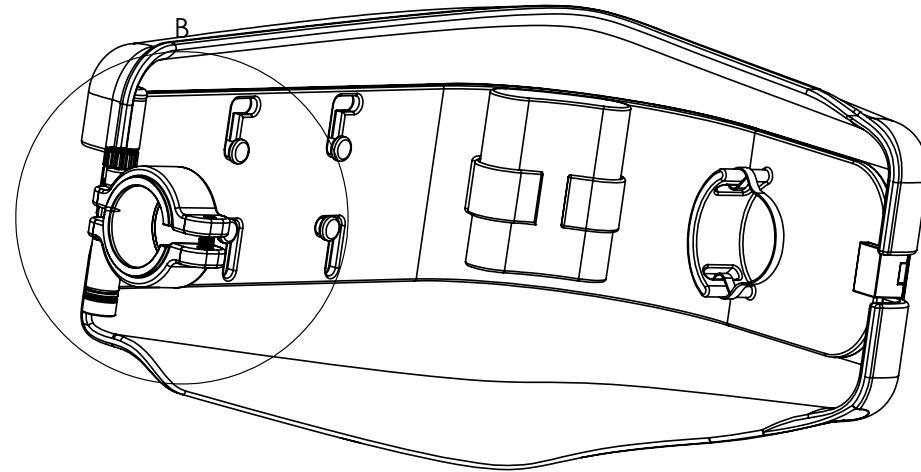
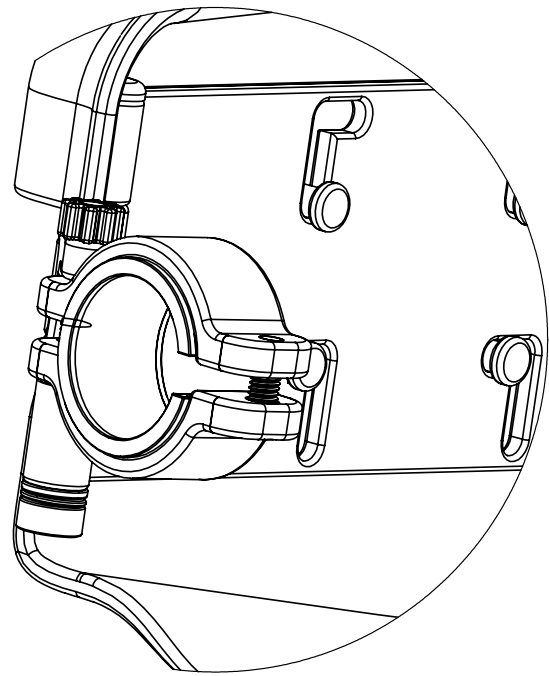




Accommodating different handlebar setups and styles, Zephyr is **ideal for most commuting bikes** including mountain, hybrid, electric and street.

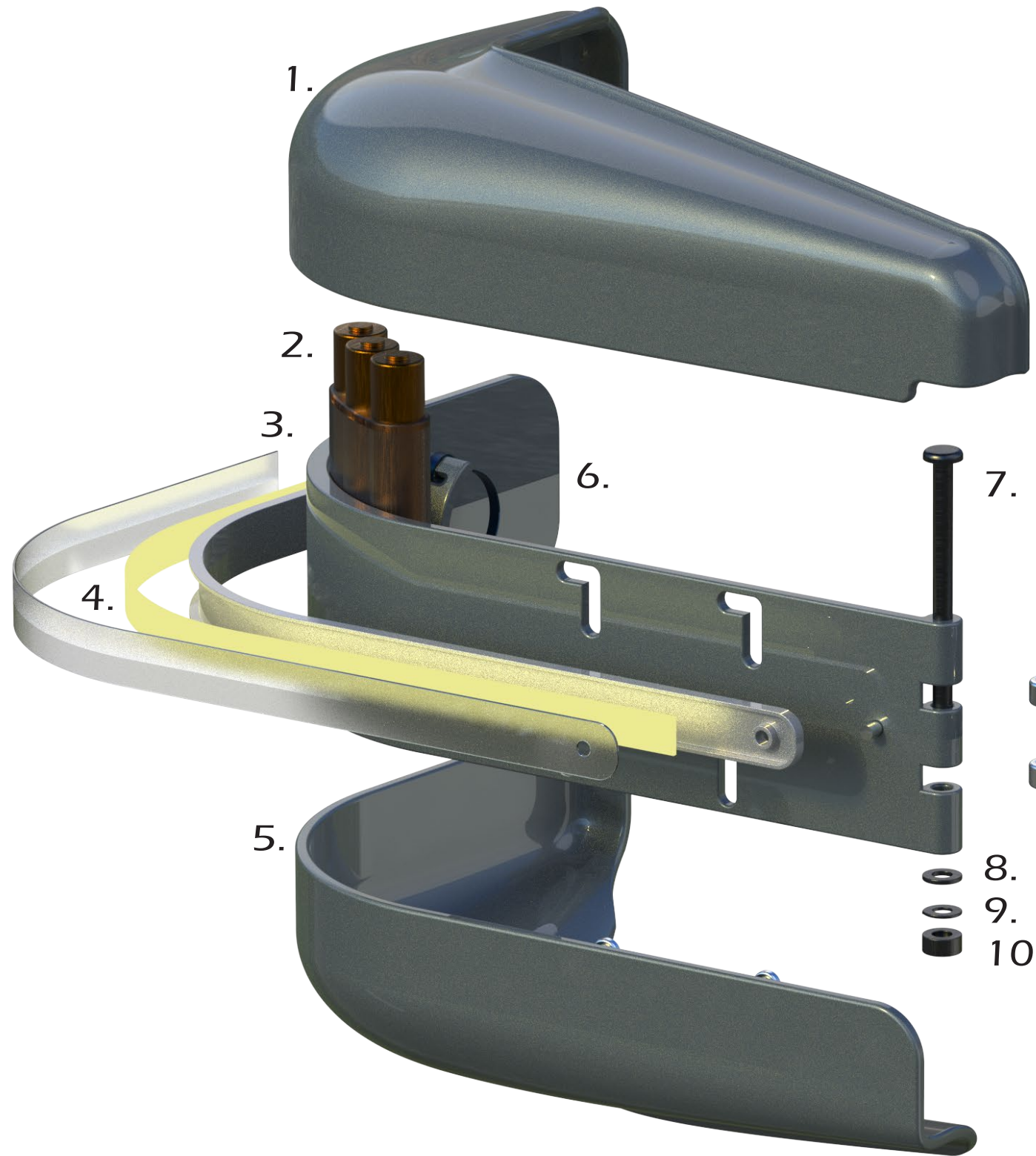






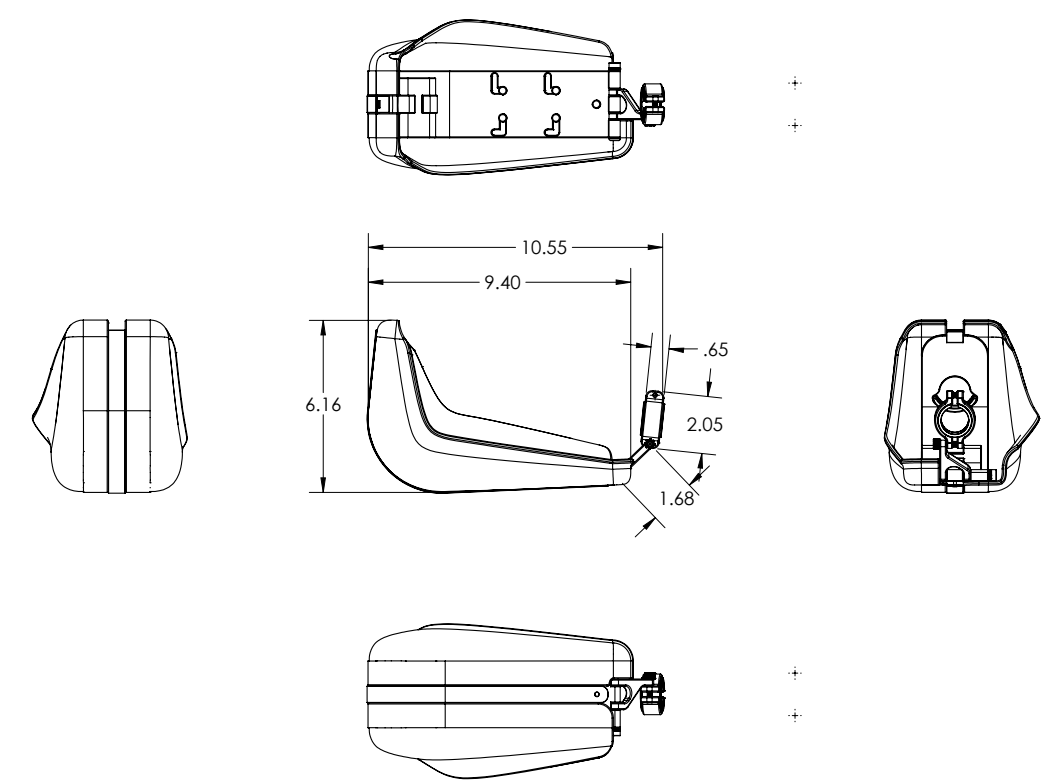
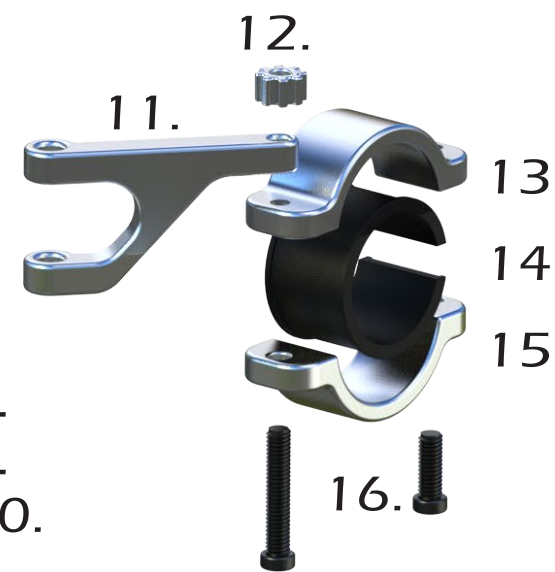
Zephyr **straps on** to the handlebars to make a firm connection against impacts but **breaks away and pivots** from handlebars forward in case of accidents





**Pieces:**

- |                               |                                |
|-------------------------------|--------------------------------|
| 1. Upper Polypropylene Guard  | 9. Stainless Steel Lock Washer |
| 2. AA Batteries 3x and Case   | 10. Stainless Steel Nut        |
| 3. Polycarbonate LED Case     | 11. Aluminum Control Arm       |
| 4. 12v LED Strip              | 12. Stainless Steel Knob       |
| 5. Lower Polypropylene Guard  | 13. Upper Aluminum Clamp       |
| 6. Center Polypropylene Guard | 14. Plastic Spacer             |
| 7. 6061 Aluminum Pivot Pin    | 15. Lower Aluminum Clamp       |
| 8. Stainless Steel Washer     | 16. Stainless Steel Bolt 2x    |





**Zephyr**

