CILO
An OXO brand inspired electric hand mixer
Task Analysis

User 1
- Removes the mixer from its case
- Inserts whisks
- Turns on the mixer
- Holds mixer + bowl
- Shifts grip slightly
- Elevates arm
- Bends entire body
- Moves mixer aside + dough drips
- Searches for trigger

User 2
- “I store the whisks apart from the case for convenience, but I like the cord storage”
- Ulnar deviation
- Accidentally turns on
- “I think it takes a lot of force to press”
- Presses level buttons + watches screen
- Changes grip entirely for “wrist comfort”
- Reaches across counter, eyes off bowl
- Cord swivels in a semicircle
- Changes grip
- Presses level buttons
- Whisks rest over bowl

Discomfort
Confusion
Strain
Messiness
Design Goals

- **COMFORT**
  Let the hand stay in a natural position for the entire process

- **CLARITY**
  Communicate function through intuitive visual feedback

- **PERFORMANCE**
  Use arm strength and wrist position to lessen work load

- **CLEANLINESS**
  Enable quick and satisfactory cleaning with minimal effort
Kitchen Brand Analysis

Bella
Affordable
Fashion conscious
Specialty

Black + Decker
Average
Customizable
Industry

Breville
Very Expensive
Strong, high quality
Luxury

Cuisinart
Average
For regular needs
Household

Cuisipro
Average
Specialized
Nonessential

Hamilton Beach
Affordable
Household/industry
Popular

Kitchen Aid
Expensive
Long lasting
Leading brand

OVO
Moderately priced
Strong, high quality
User friendly

Philips
Very Expensive
High precision
Professional

Smeg
Very Expensive
Heavily branded
Luxury

Simple UI

Deep Feature UI
Hand Mixer Internals

- Switch
- Capacitor bracket
- End bracket
- Commutator
- Field magnet
- Carbon brush
- Armature coil
- Cord placer
- Capacitor bracket
- Switch selector
- Eject mechanism
- Gear compression springs
- Worm gear
- Fan
- Worm wheel gear
- Gear shaft
Form Exploration

- Speedforms are unaligned with brand
- Too large cross-section
- Pinky anchor unnecessary
- Anchors index finger
- Rearranging internal part configuration

Concept A

Concept B

Concept C Development

3D printed

Milled

Machined
Final Assembly

Plastic
Polished Chrome
Silicone Rubber
Stainless Steel
Metalized Plastic

2.85 in
3.15 in
6.5 in
Design Features

- **Attachment fit clarity**
- **Optimal wrist positioning**
- **Hygienic fan cover**
- **Versatile grip**

- Comfort
- Clarity
- Performance
- Cleanliness