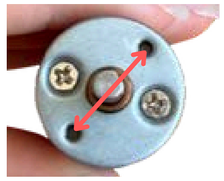
11 week

Internal Components



17mm

26mm

45mm

48mm

4mm

8.8mm

43mm

56mm

21mm

46mm

15mm

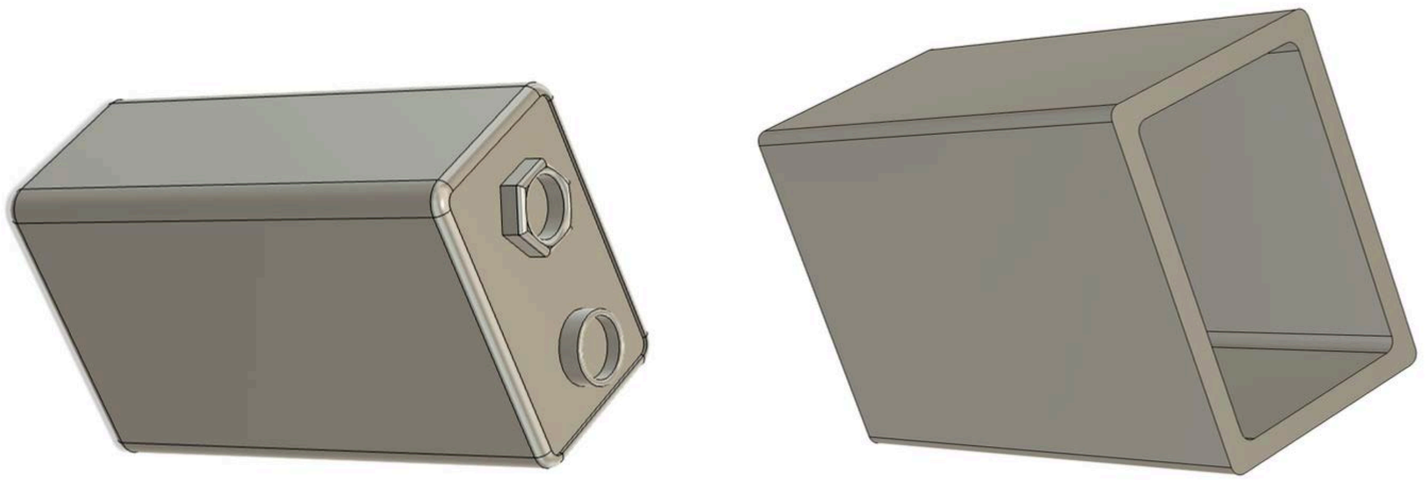
22mm

55mm

62mm

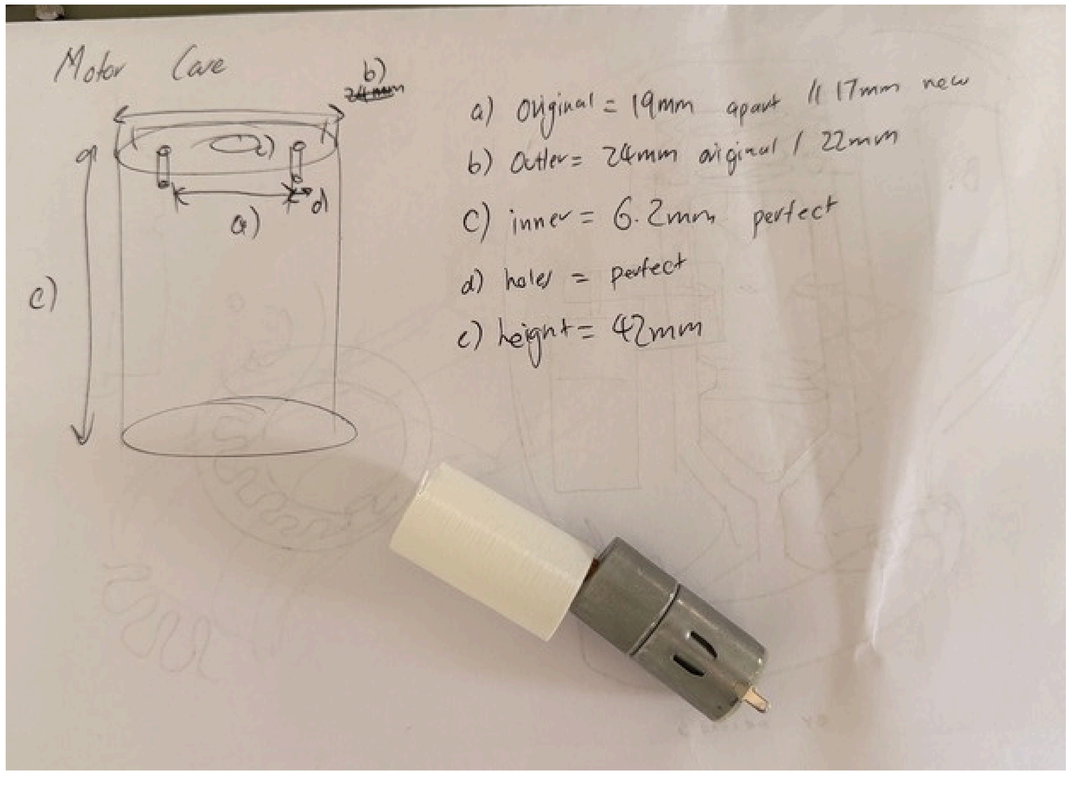
22mm

Battery & Battery Jig

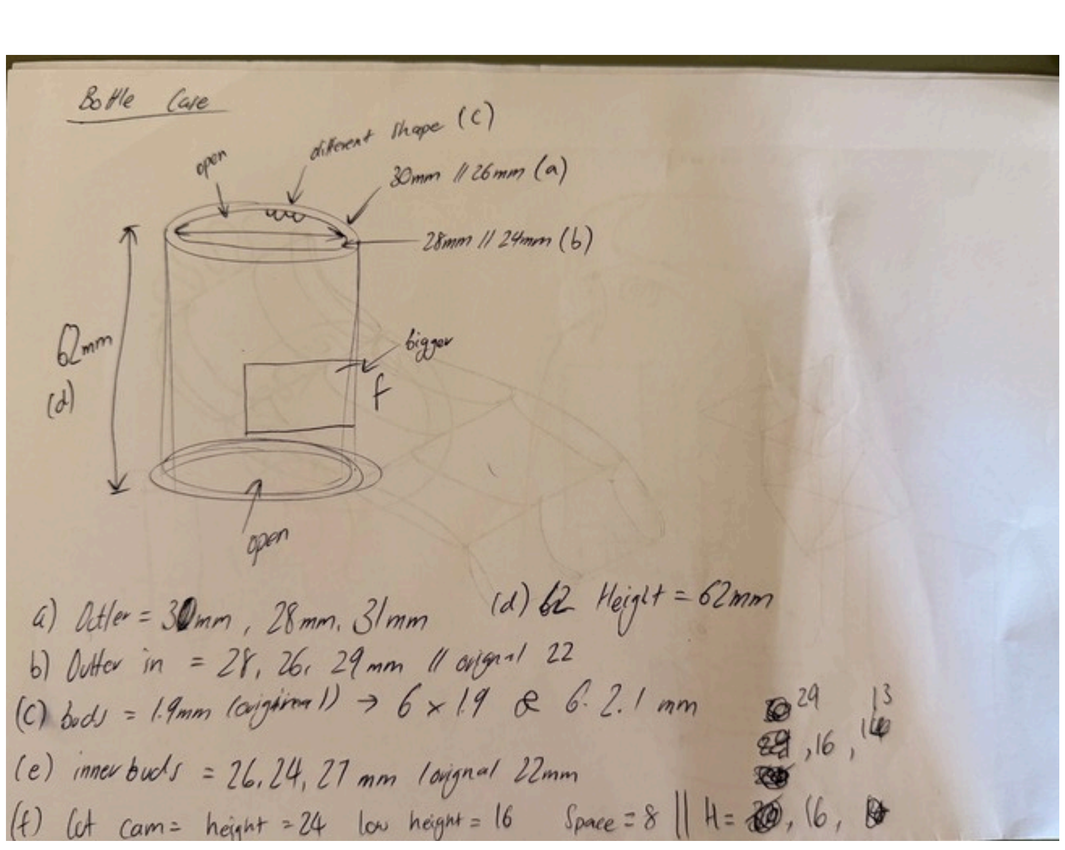


Eye drop bottle & Gear Motor - Internal

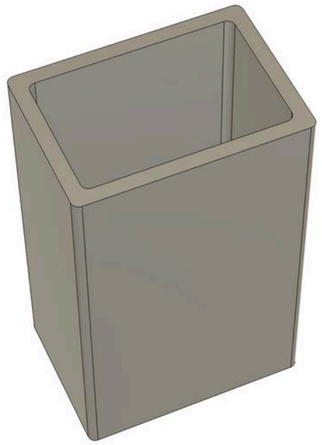
Gear Motor Jig - Internal

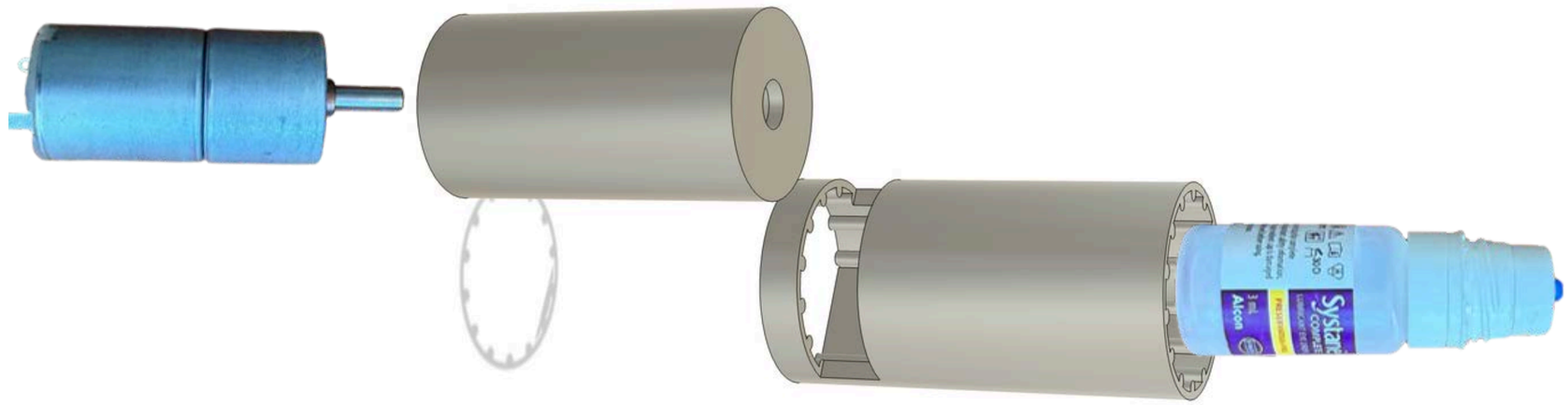


Eye drop bottle Jig - Internal

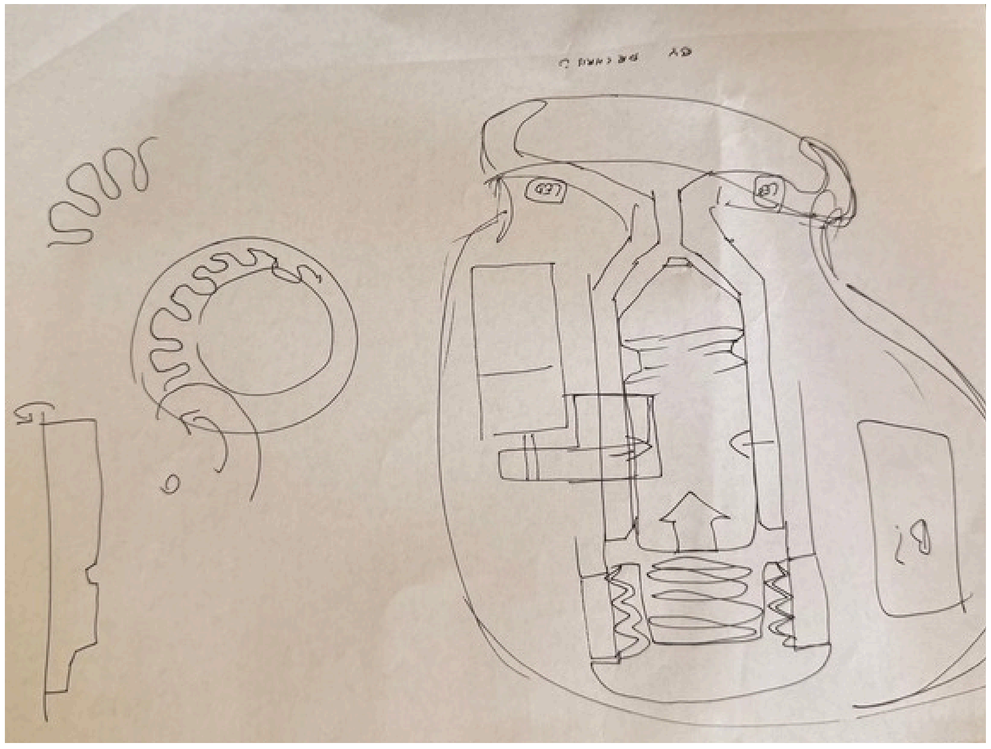


Gear Motor Jig - Internal





could maybe not add cut out - just in TPU so it can go against the case of eye drop bottle



Dr Chris sketch

CAD planning

1. **CAD internal components**
    a. Jig for the eye drop bottle
    b. Jig for battery
    c. Jig for motor
    d. eye drop bottle
    e. battery
    f. cam - motion studies check!
    g. geared motor
    h. wires / buttons etc
        i. insert planes of these components - easier to assemble later

2. Model handle shape that is best and measure everything

- Consider different shape forms
- sketch it out to make it easier to model
- Measure everything

3. Sketch underlay

- insert into doc (week 2)

4. CAD form and tips from Advance CAD (week 2)

- you will most likely have 3 bodies - so the goggle eye, eye drop bottle housing and handle (if you addd one)
- Then add the ribs later

5. Assembly (week 3)

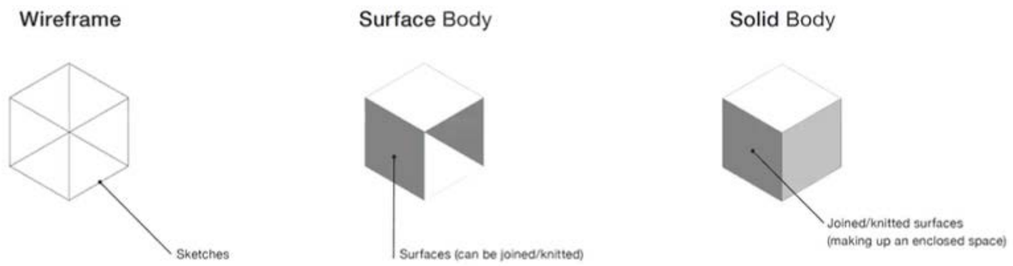
- parts
- assembly mates
- top-down assembly

6. Analysis (week 4)

- stimulating motion - how durable your part is

7. Surface modelling (week 5)

- ..



CAD planning

Planning / learning

- finish off Chris's vids on surface modelling
- watch solidworks linked-in learning vids // follow along and know how to loft

Solidworks assembly

- make an assembly of all internal components and move them around to see what works and what form is best

Sketch

- sketch on paper the size of everything how everything will fit in the most compressed way - know the internal size/ measurements and how it fits - consider using two batteries and fitting them in against the eye drop bottle and the gear motor
- insert this sketch into doc and can go from there

Sectioning

- you can probably loft it and section product into three different sections - you can snap fit etc - with the end part being openable so that that battery can be interchanged. one being the google

Internal housing

- cover all internal components with a housing

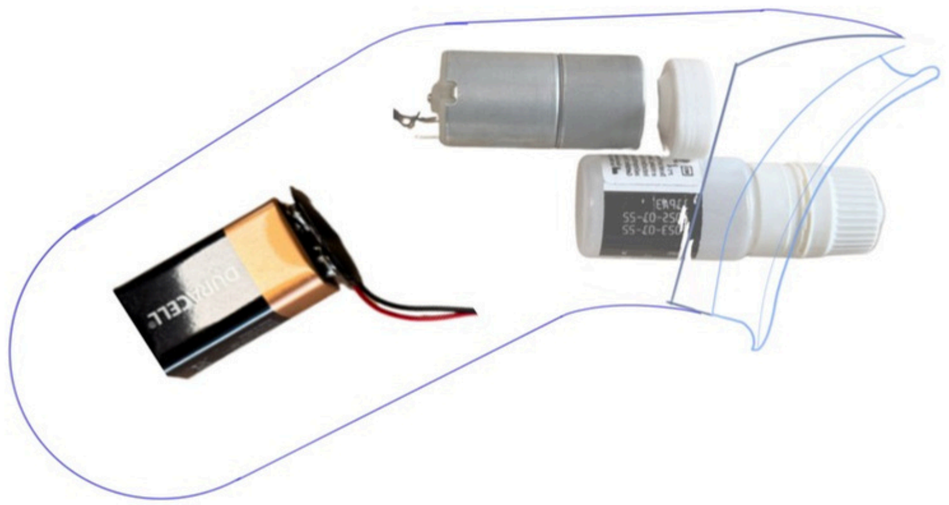
Surface modeling

- surface model the goggle - and match the size of the goggle to the rest of the body - so it looks organic and ergonomic

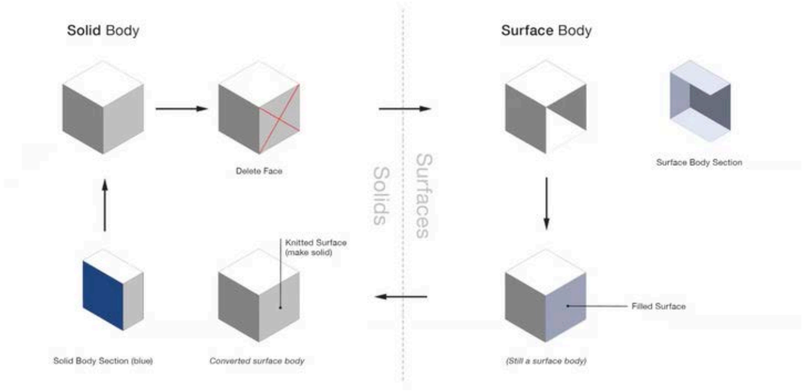
External housing

- loft external housing

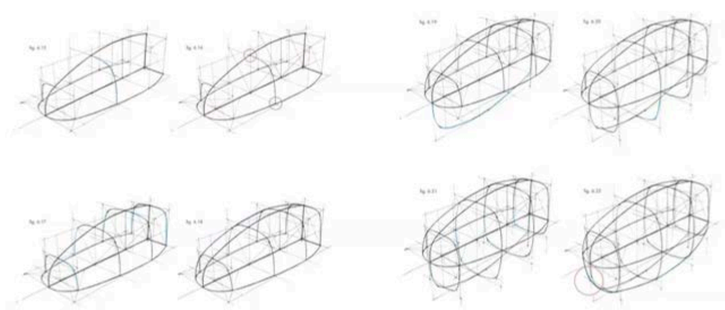
Kit Form



Solid vs Surface



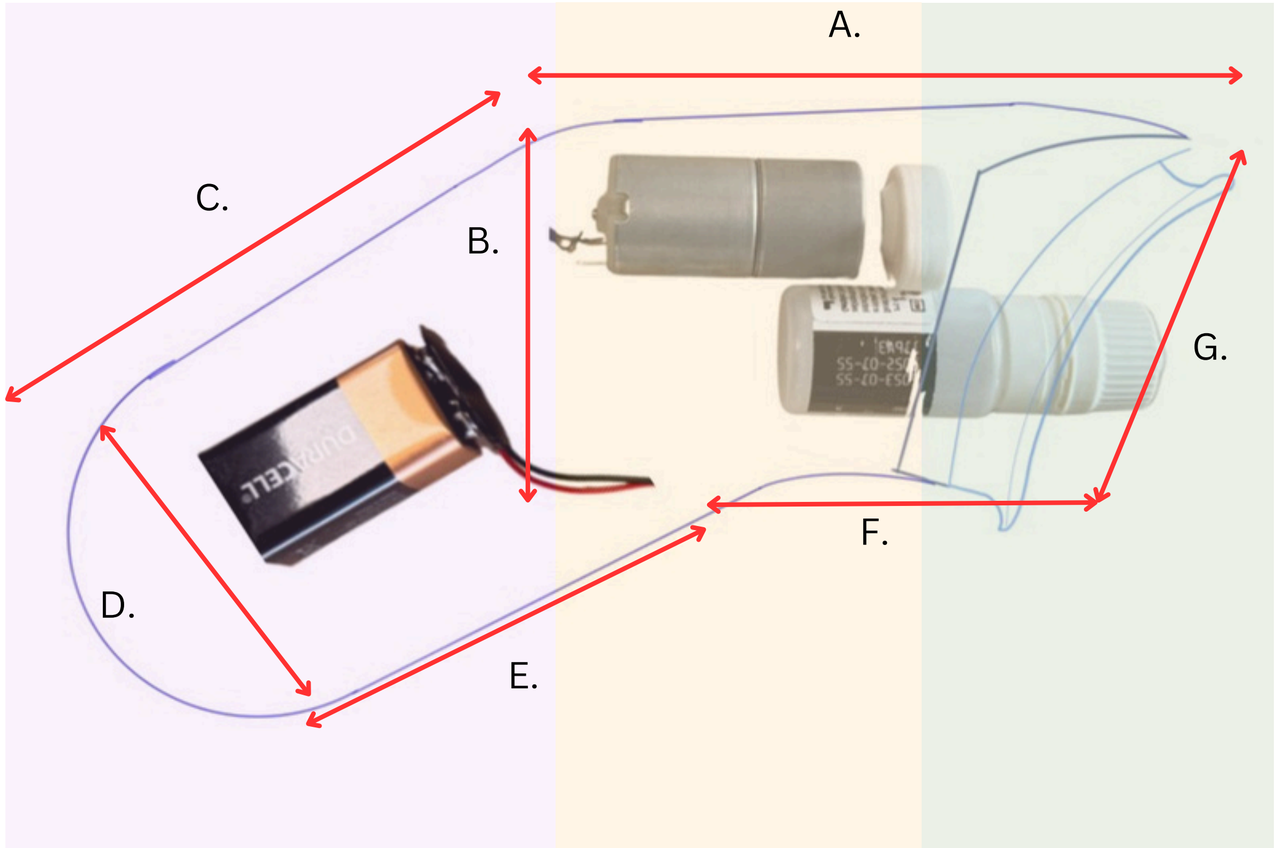
Surface Modelling



The Six Steps of Modeling

1. Select a face or plane.
2. Start a new sketch.
3. Draw the geometry.
4. Tie the geometry to the origin.
5. Add relations/dimensions.
6. Create the feature.

External Body



A.		100mm	Lenght of motor, cam, and eye drop bottle
B.		52mm	width of motor and eye drop bottle
C.			
D.			
E.			
F.			
G.			

Kit Form

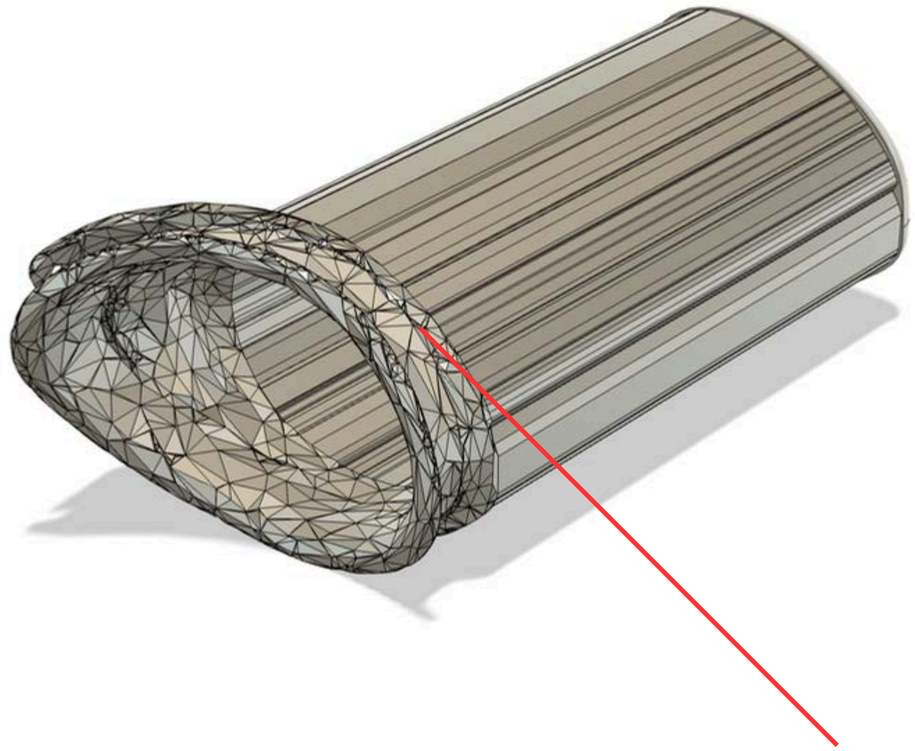
screen interface for reminding and sending positive messages of eye drop completion

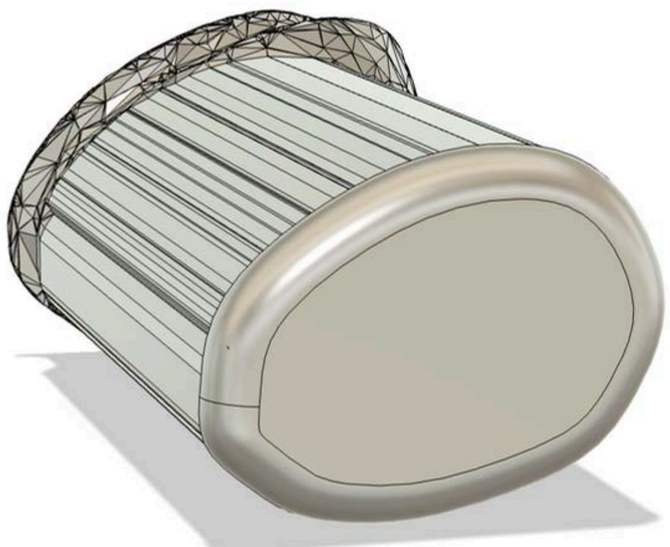
Kit Form

angled handles do not confirm to familiarity of experience when administering eye drops

Kit Form

nice transition from the curved goggle eye shape to the handle

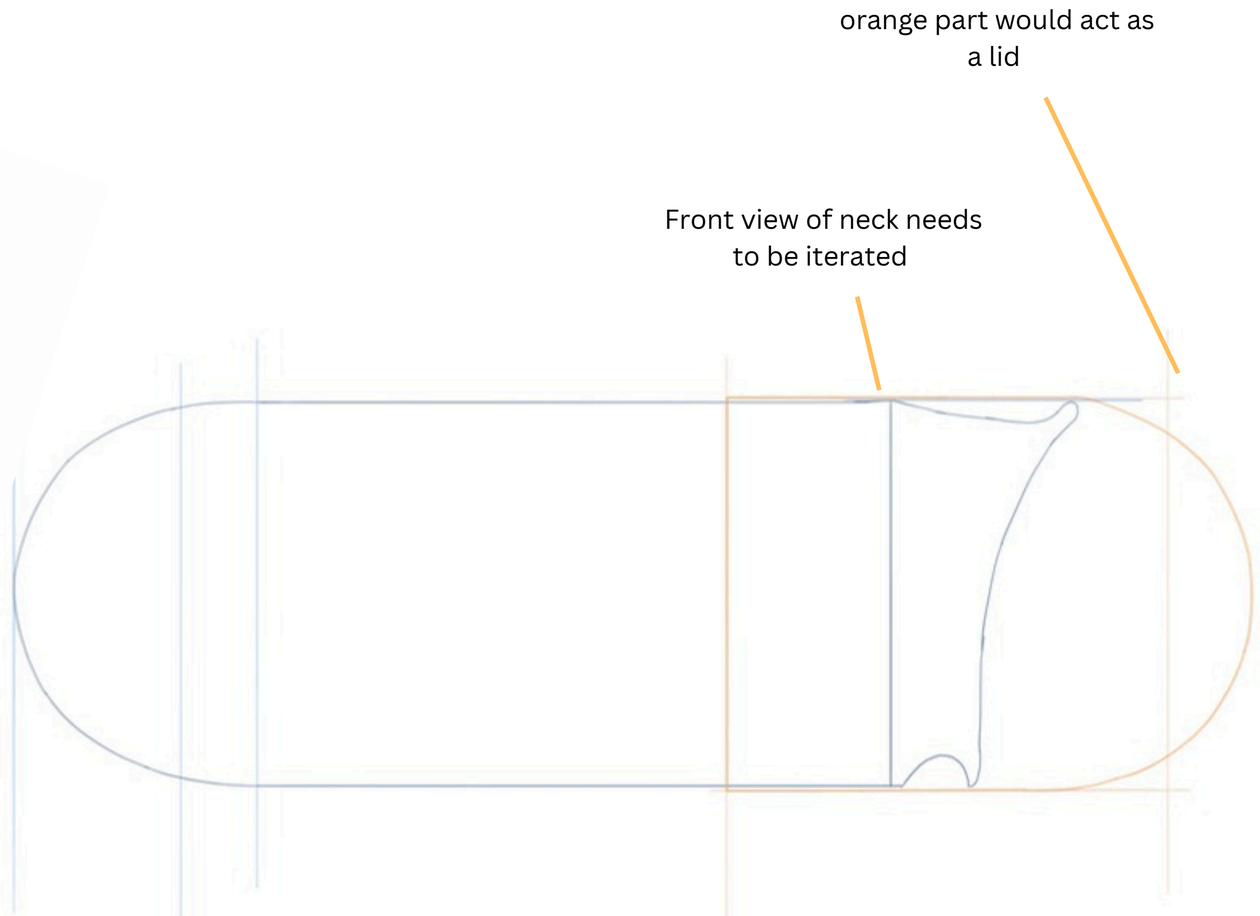




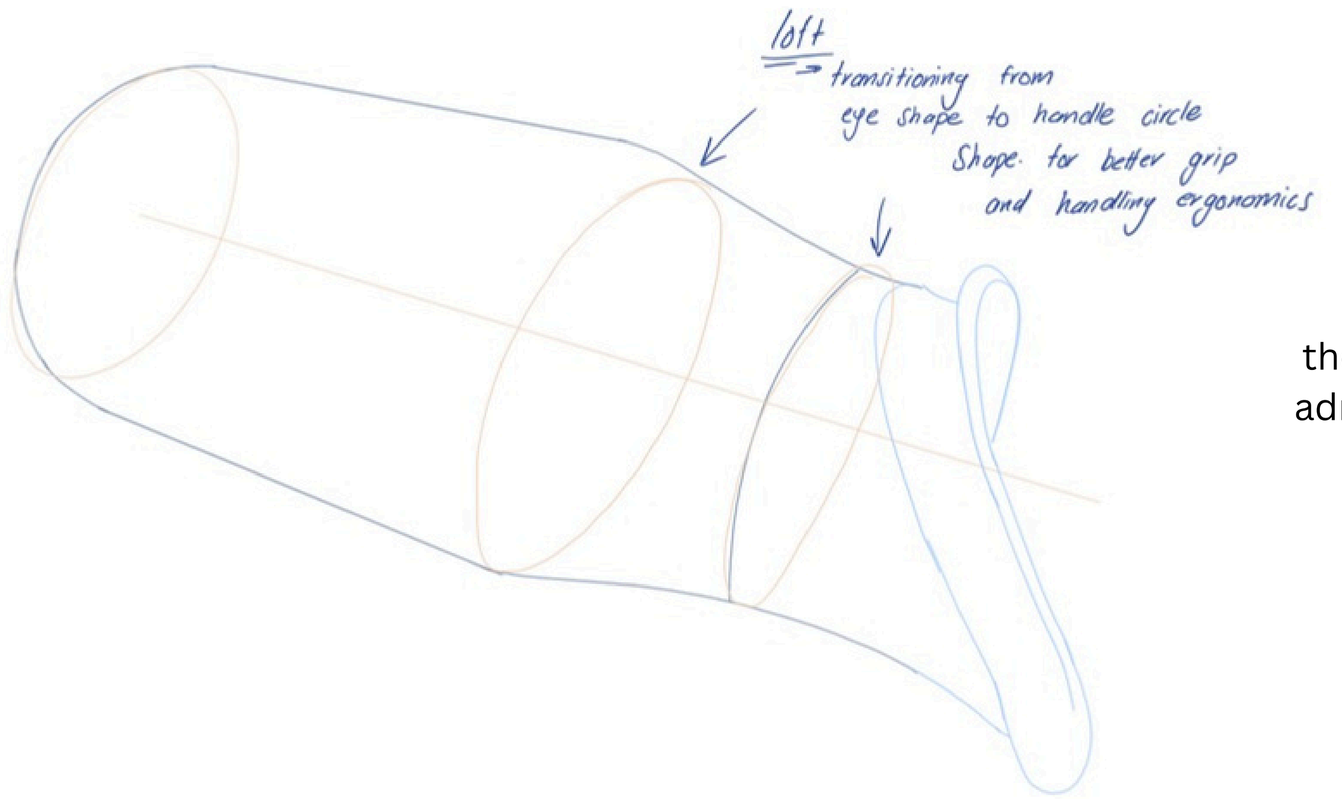
the eye shape is not ergonimically suitable when administering eye drops

neck shape and transition from the goggle part to the handle is needed

Kit Form

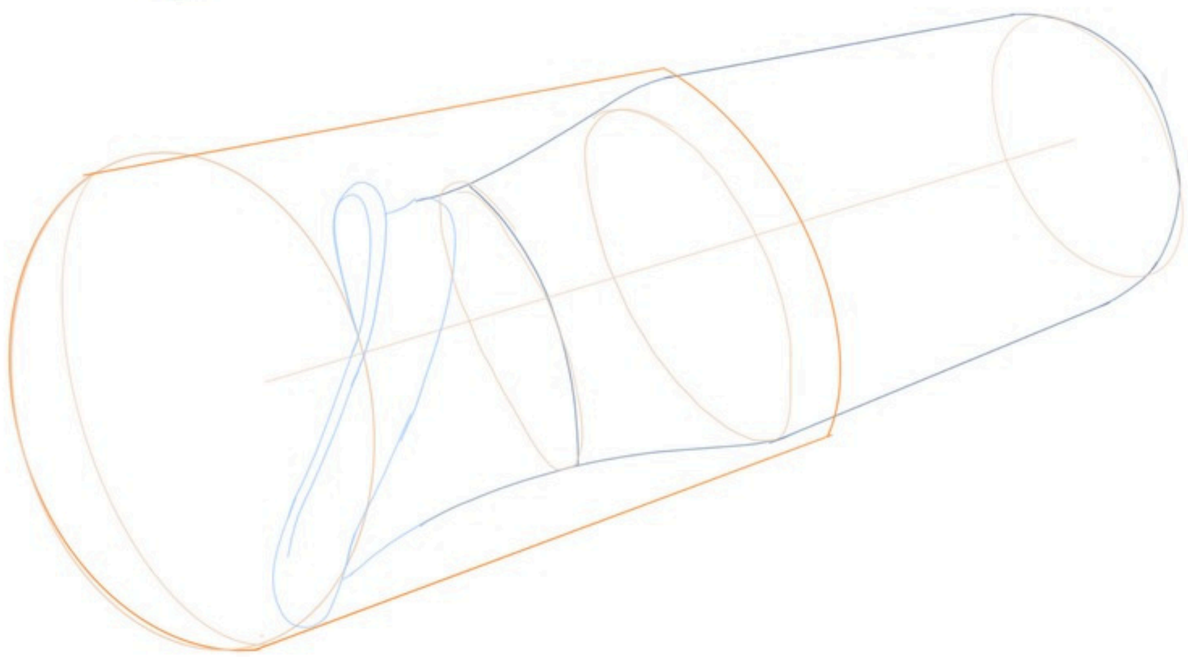

orange part would act as
a lid
Front view of neck needs
to be iterated

Handle Form



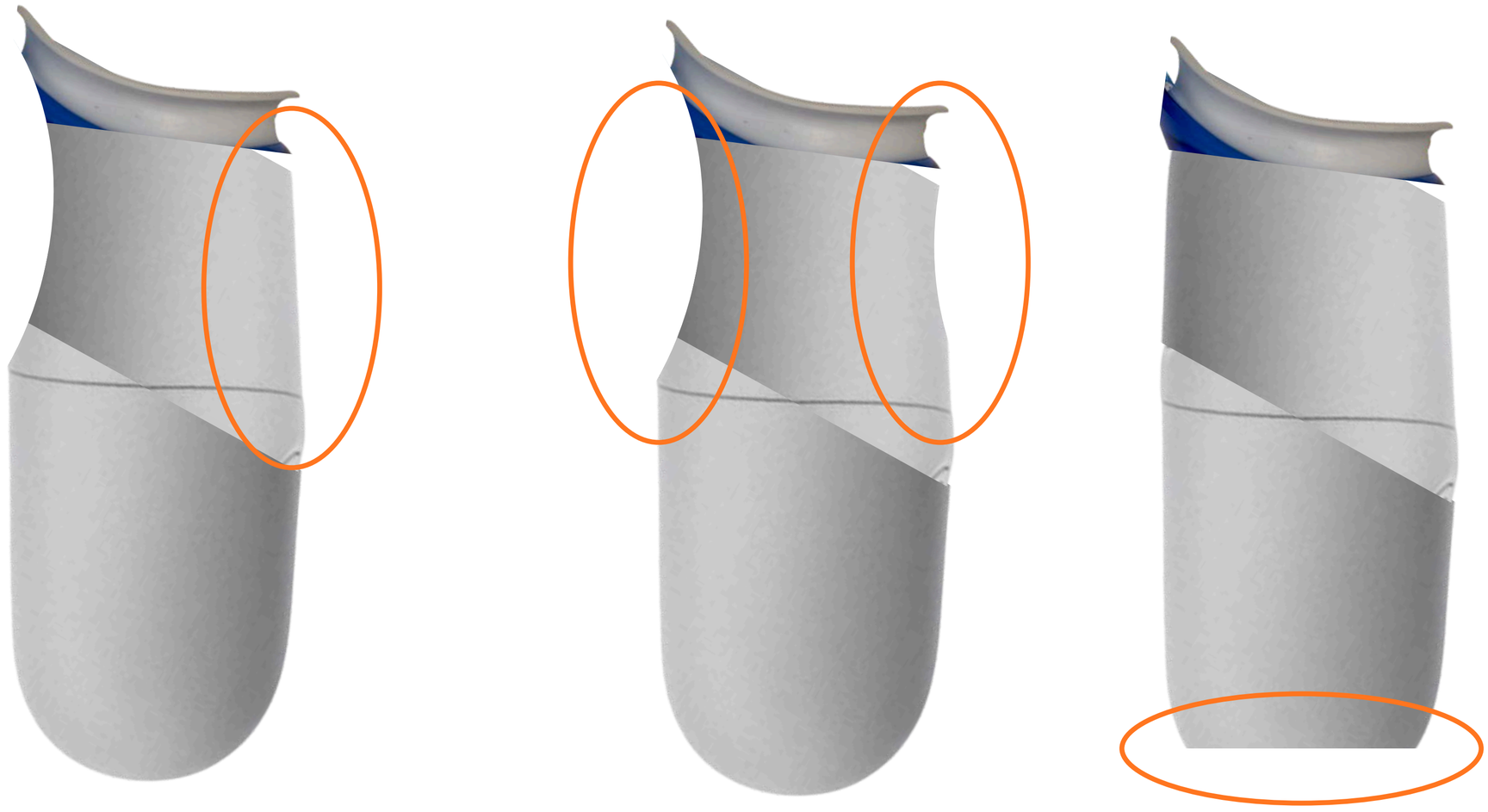
the handle straight to allow the user to percieve the administration process as 'familiar', alike if they were administering a normal eye drop bottle.

Click on lid



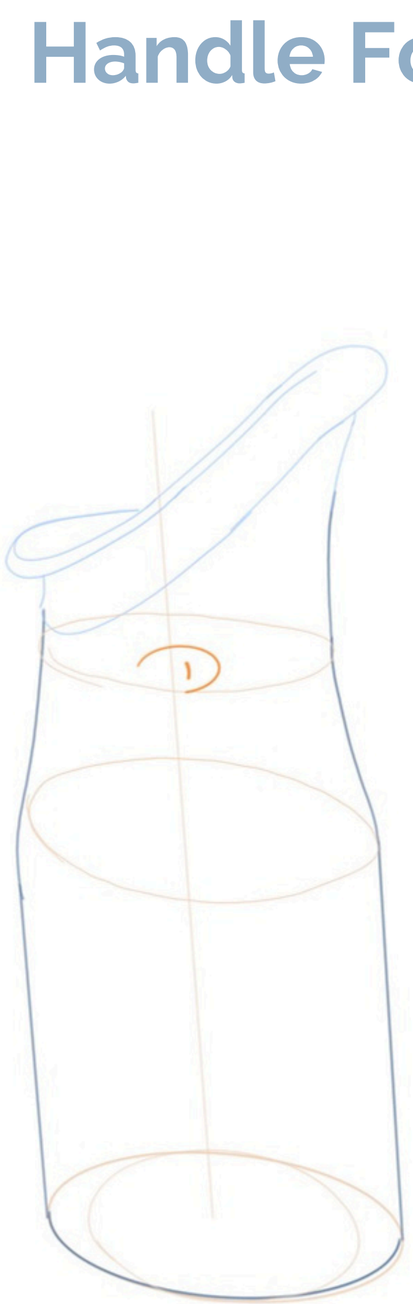
a transparent lid that can click on so the user is able to travel with the device

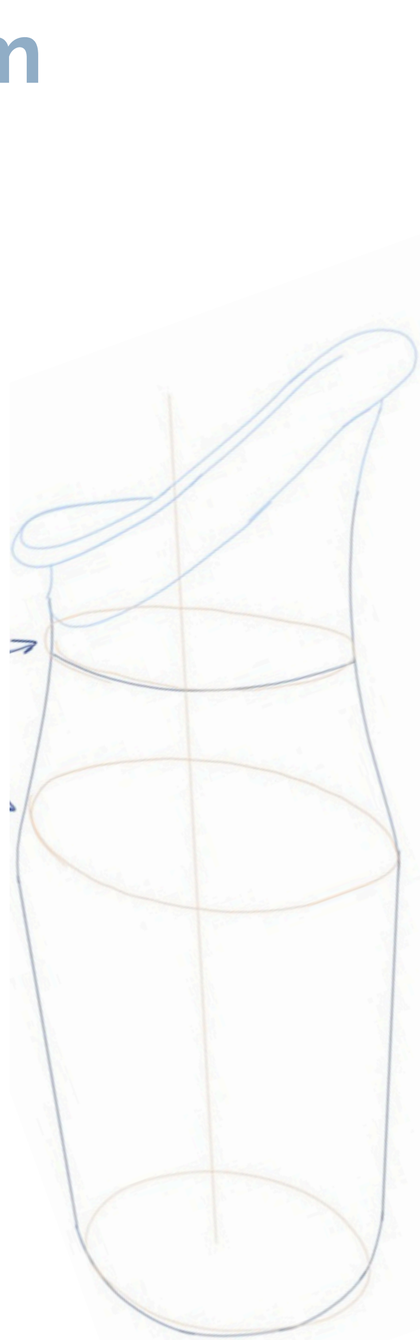
Handle Form

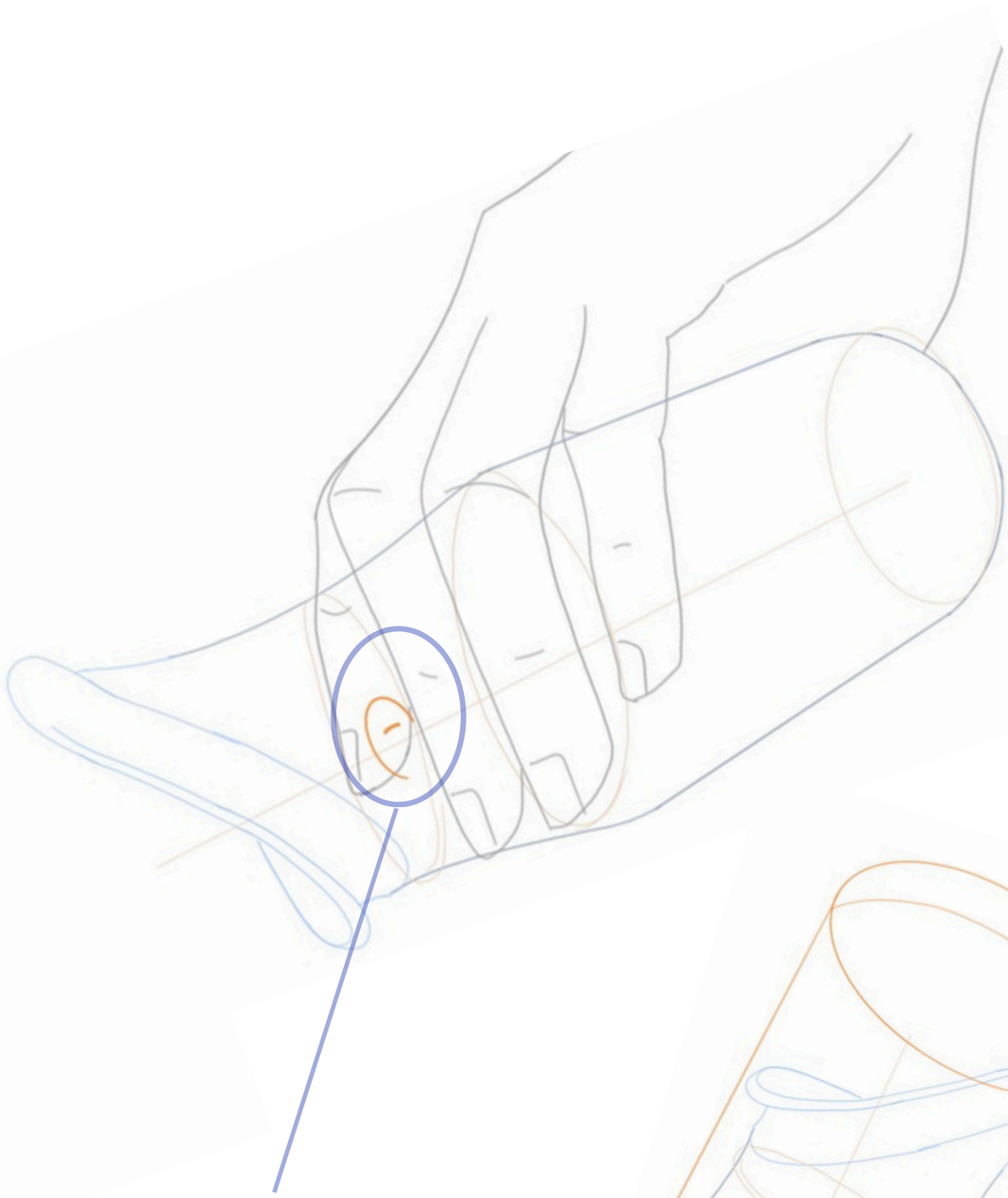


flat so it can stand

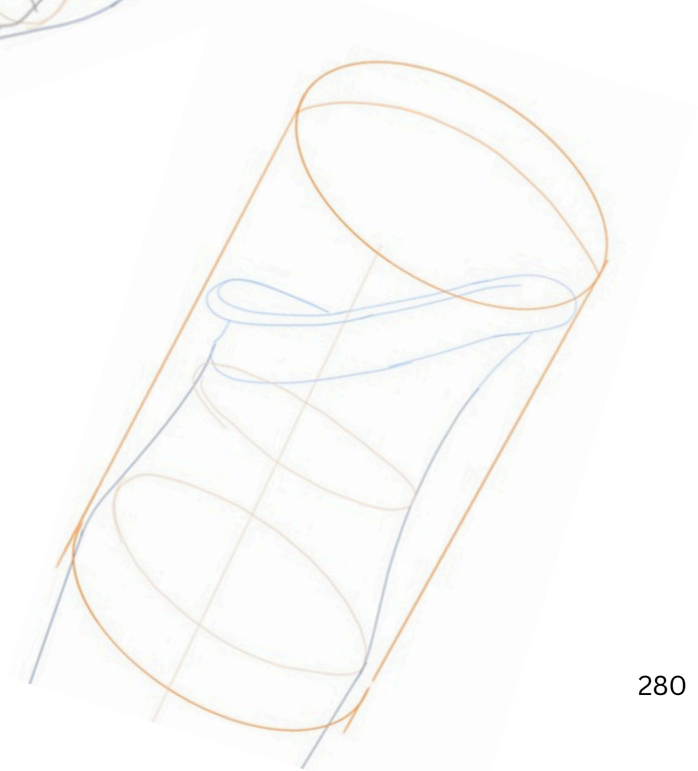
Handle Form







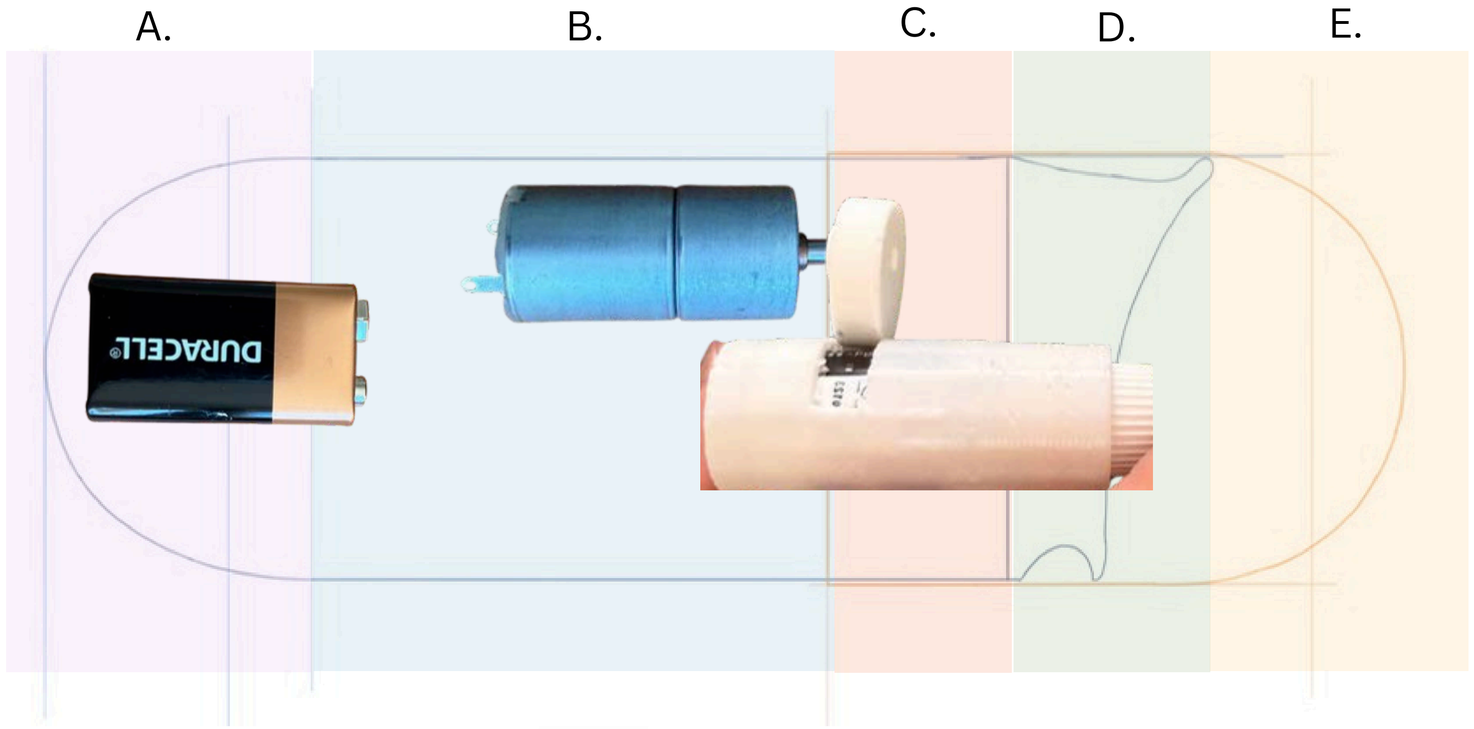
Two buttons - one on either side



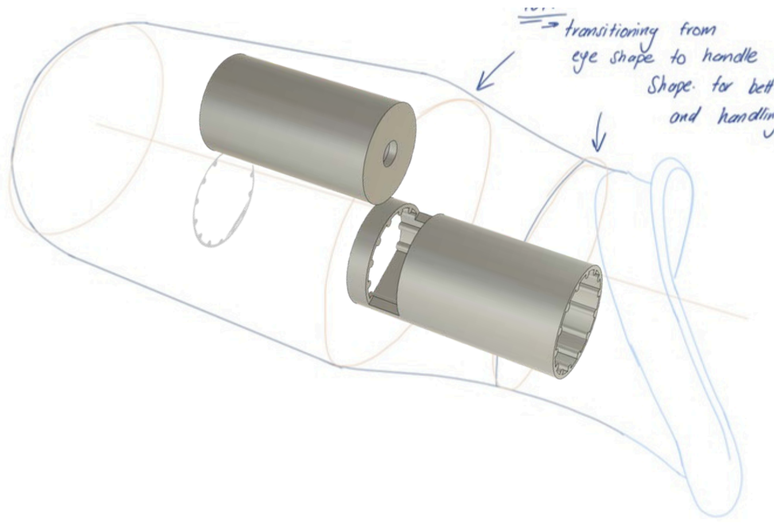
Lid

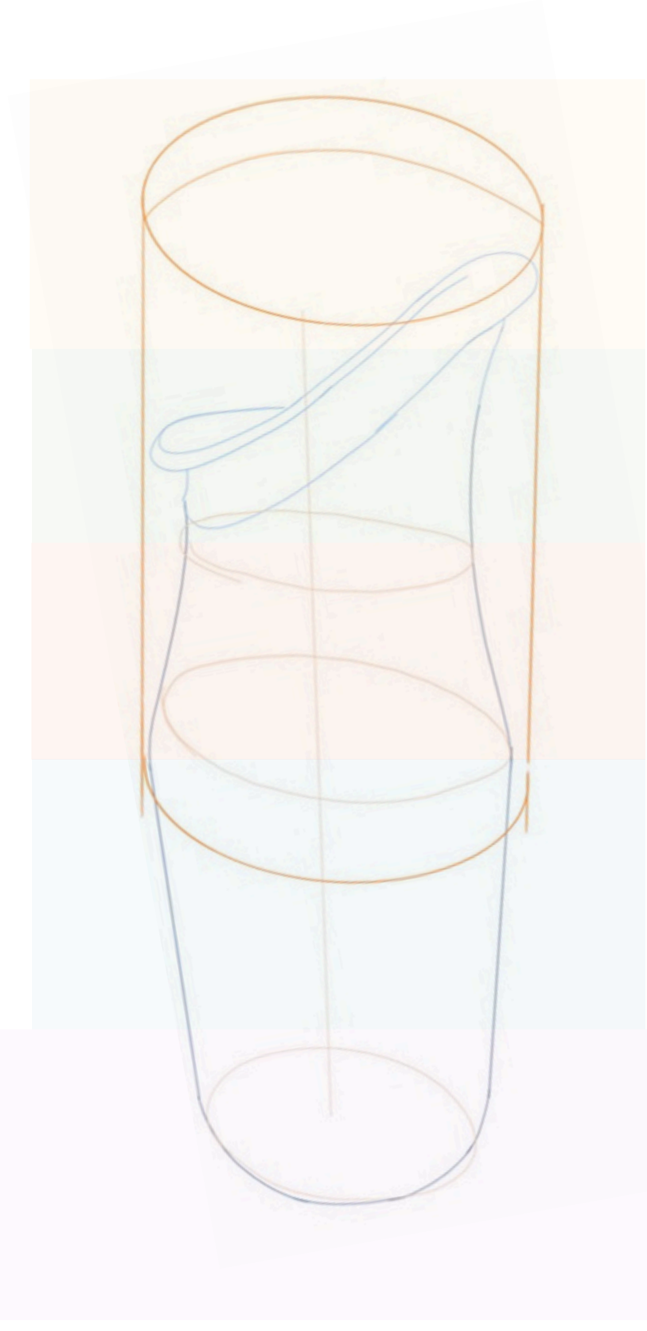
try to incoporate familiarity but looks ugly, cheap and too novel

Kit Form



A.	Battery replacement
B.	Main body
C.	Neck
D.	Eye position
E.	Lid

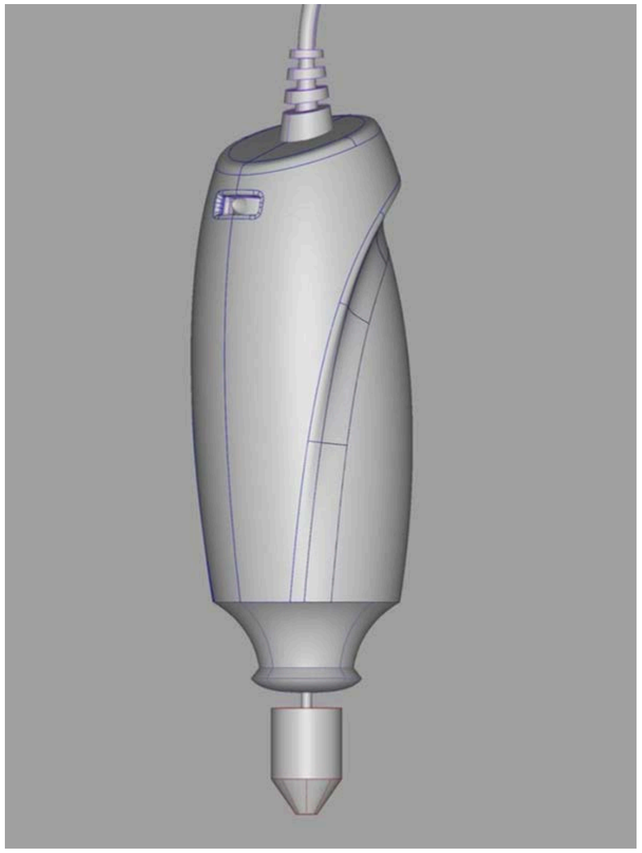




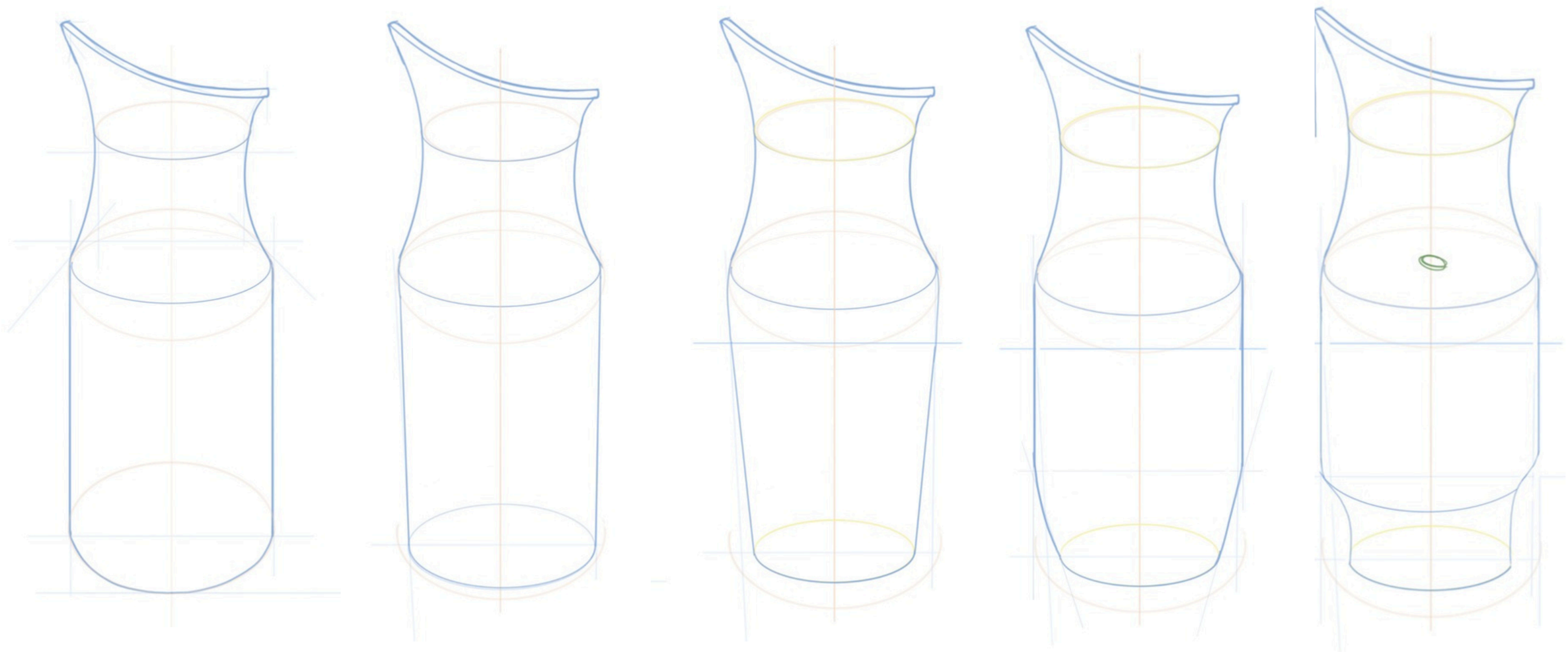
12 week

Ergonomic Handle Shapes

Important handle shapes for best gripping position

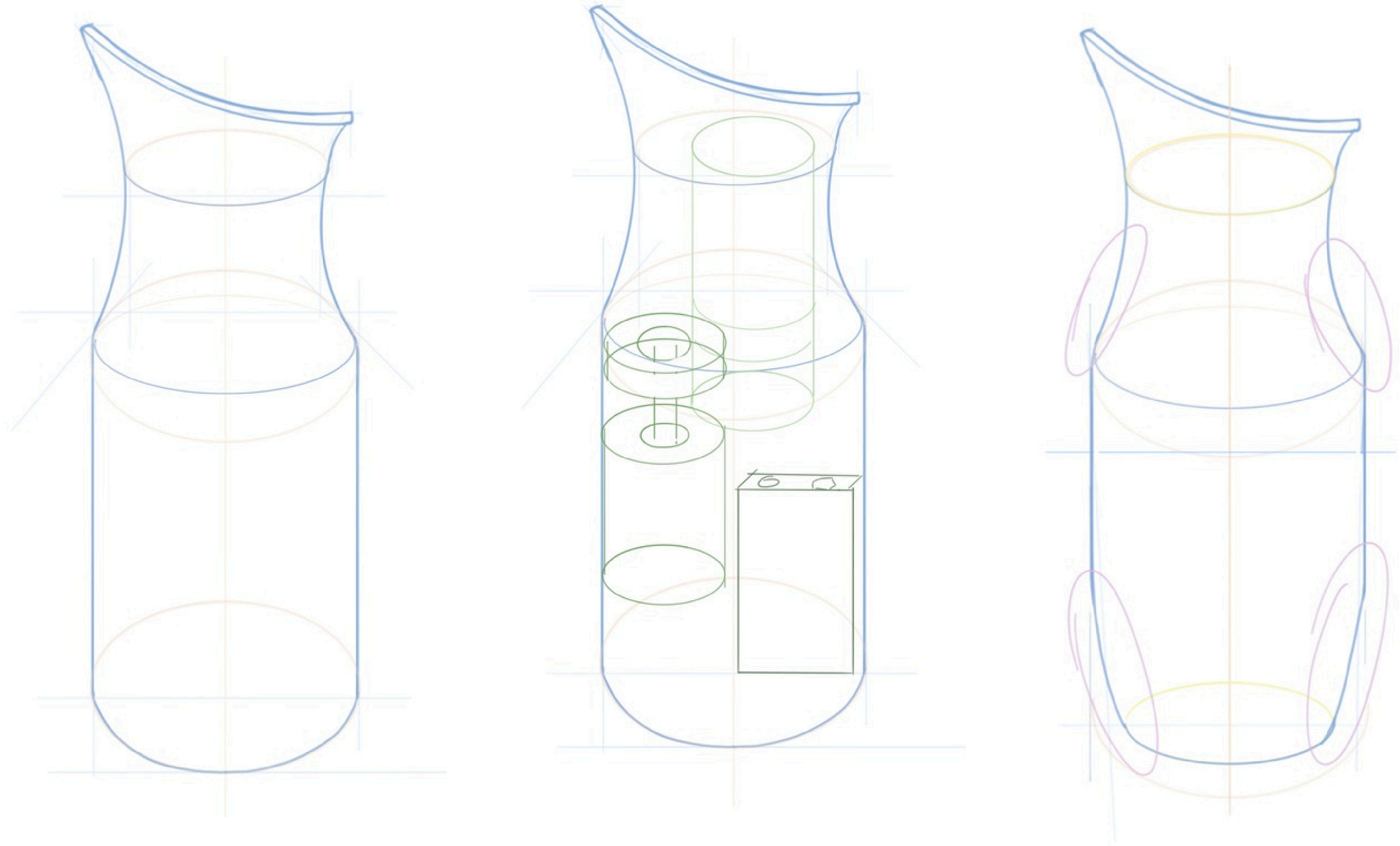


Side view

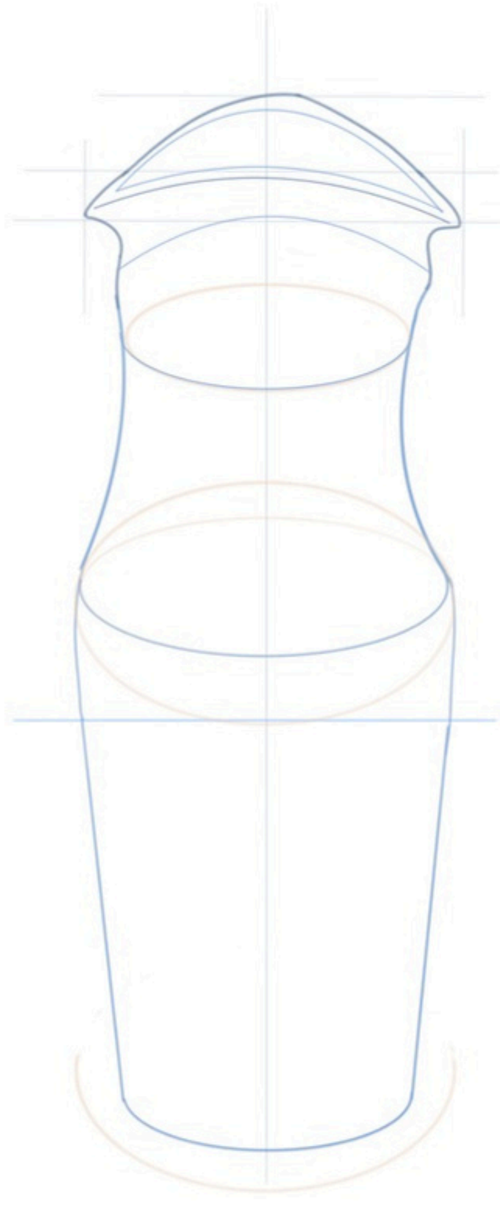


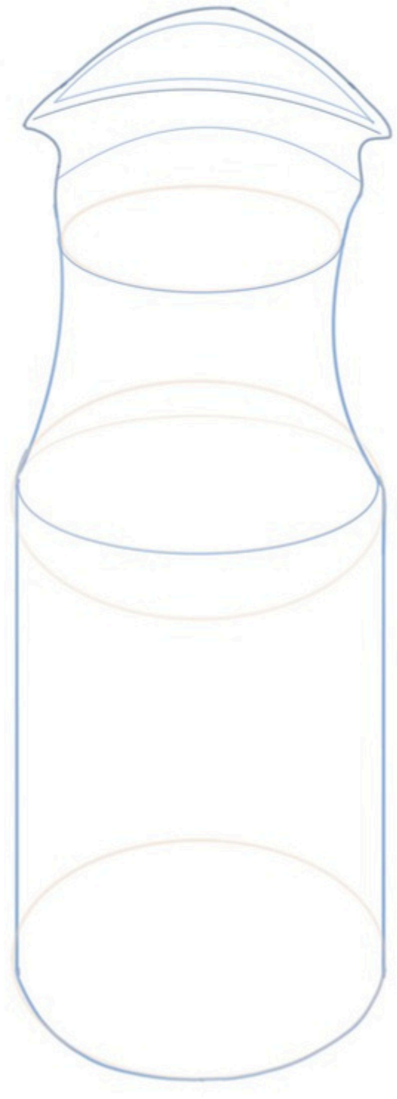
Prototype 2 - Ergonomics

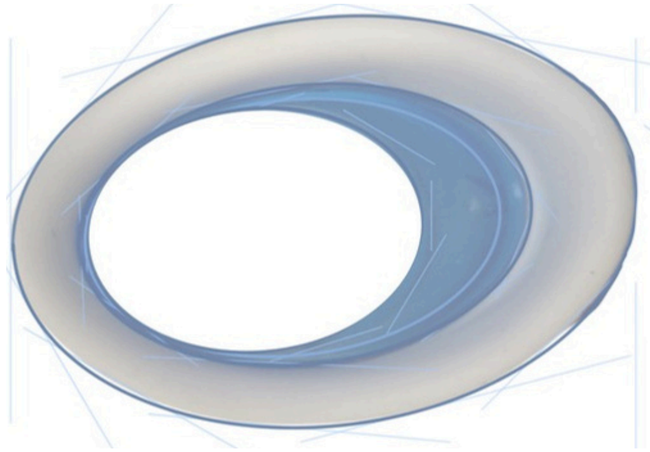
Side view



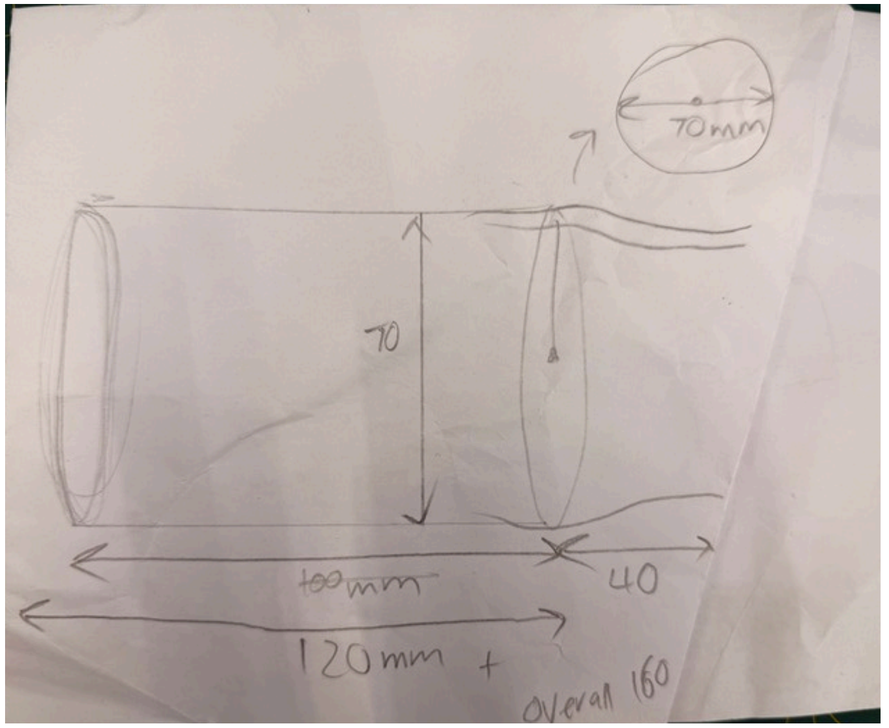
Side/ Front view & Top View





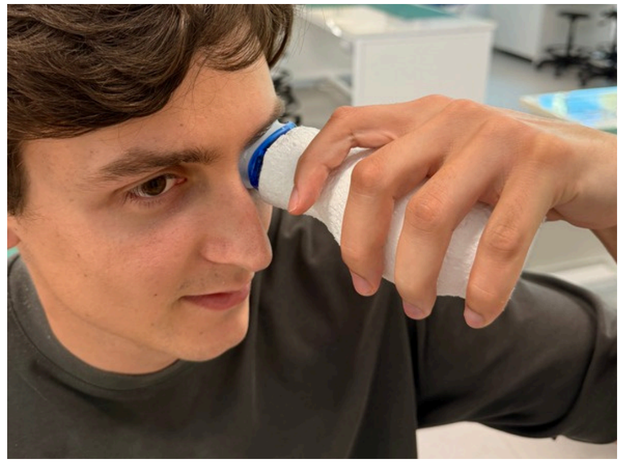


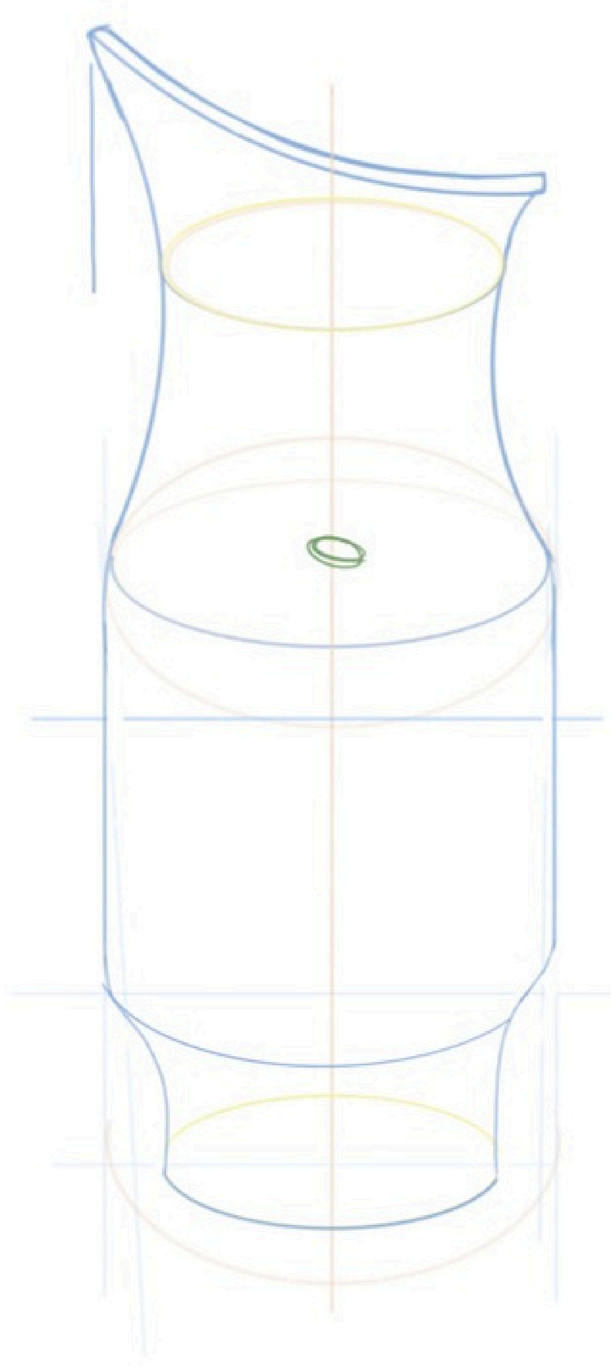
Prototype 1 - Ergonomics



Prototype 2 - Ergonomics

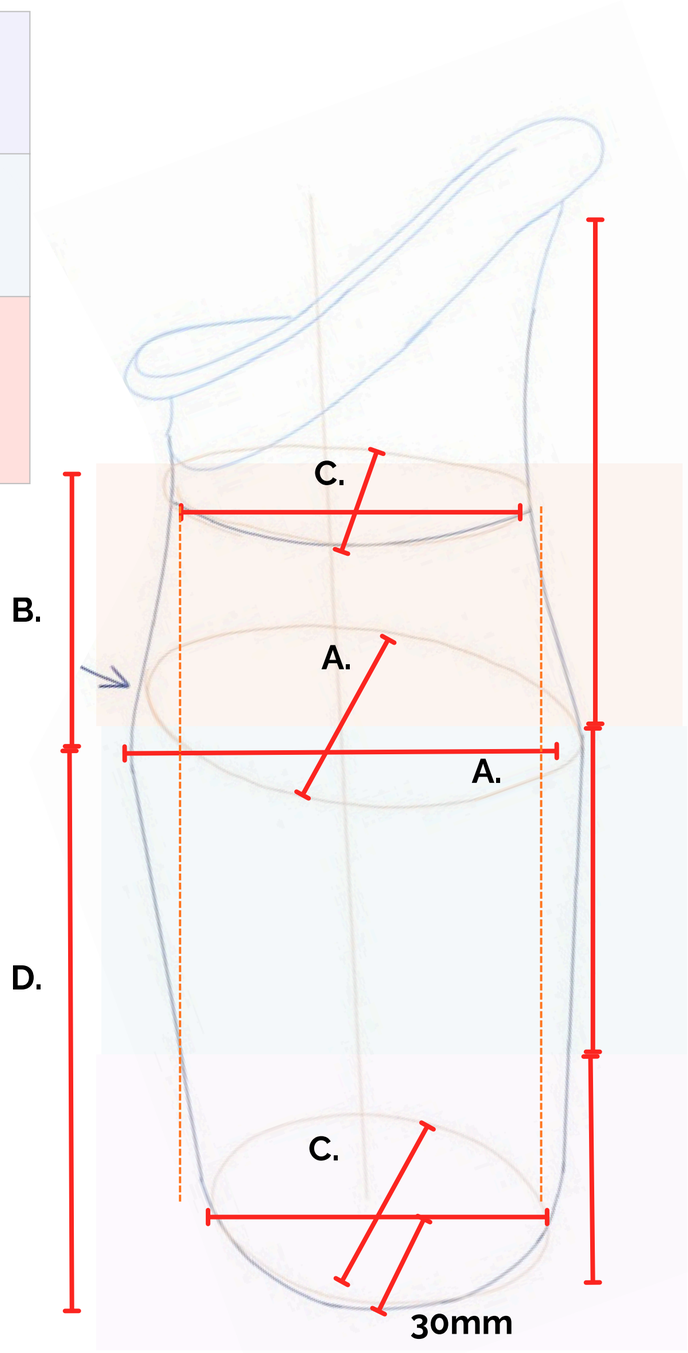
Prototype 2 - Ergonomics



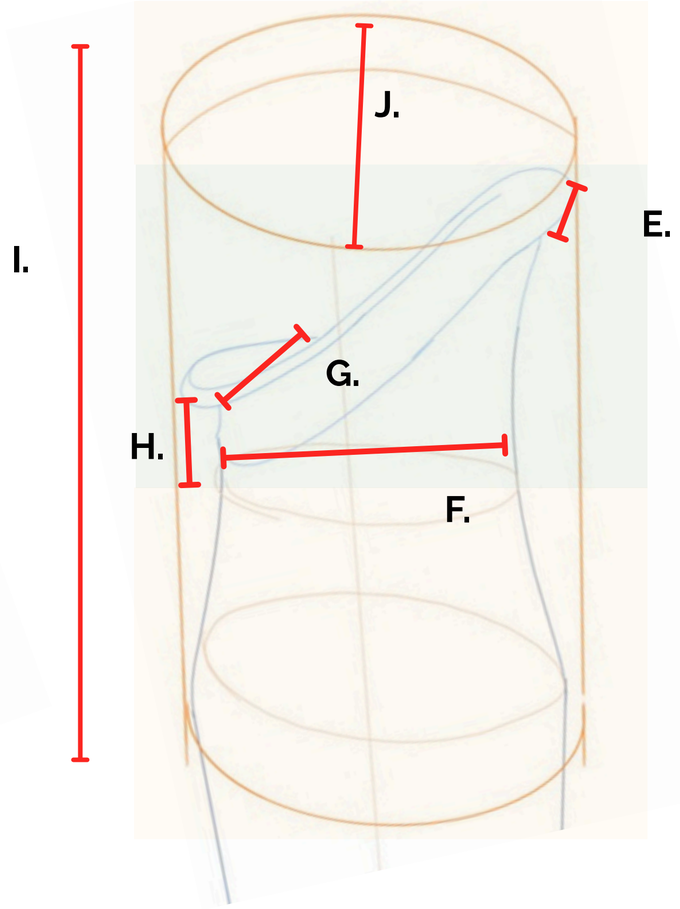


Measurement

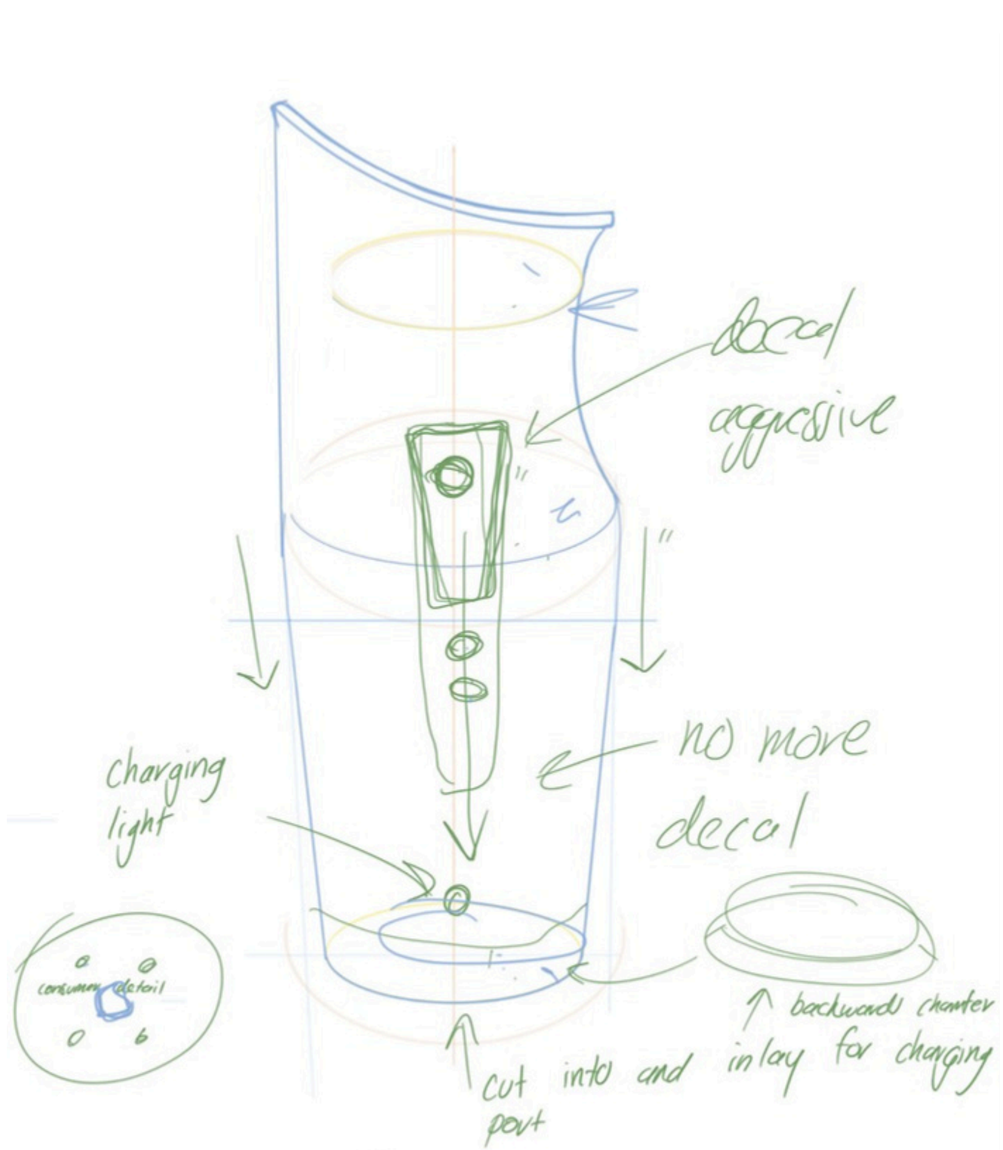
A.	Battery replacement	C. = 60mm
B.	Main body	A. = 70mm D. = 120mm
C.	Neck	A. = 70mm B. = 40mm C. = 60mm

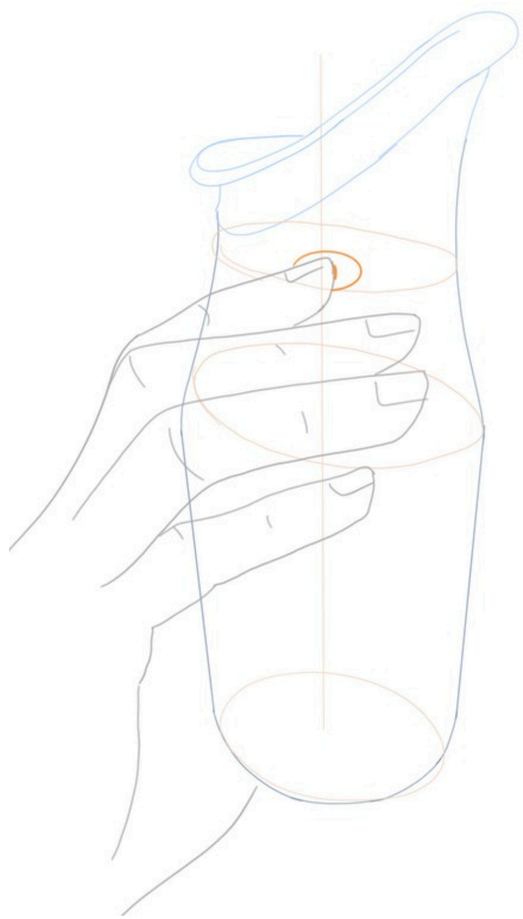


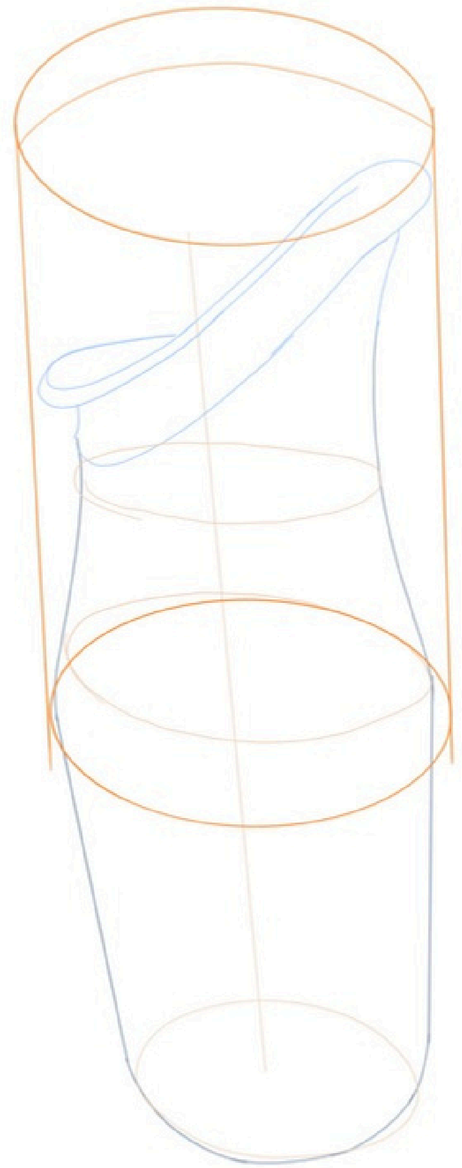
D.	Eye position	E. = 2mm F. = 60mm G. = 42mm H. = 5.5mm
E.	Lid	I. = j. =



Eye Cup Shape and Size







Charging Doc

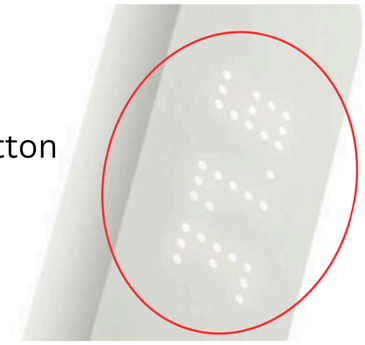
recharagle battery - USCB chargable

Detailing

Rubber grip

Decal indent

- power button/ adminster button



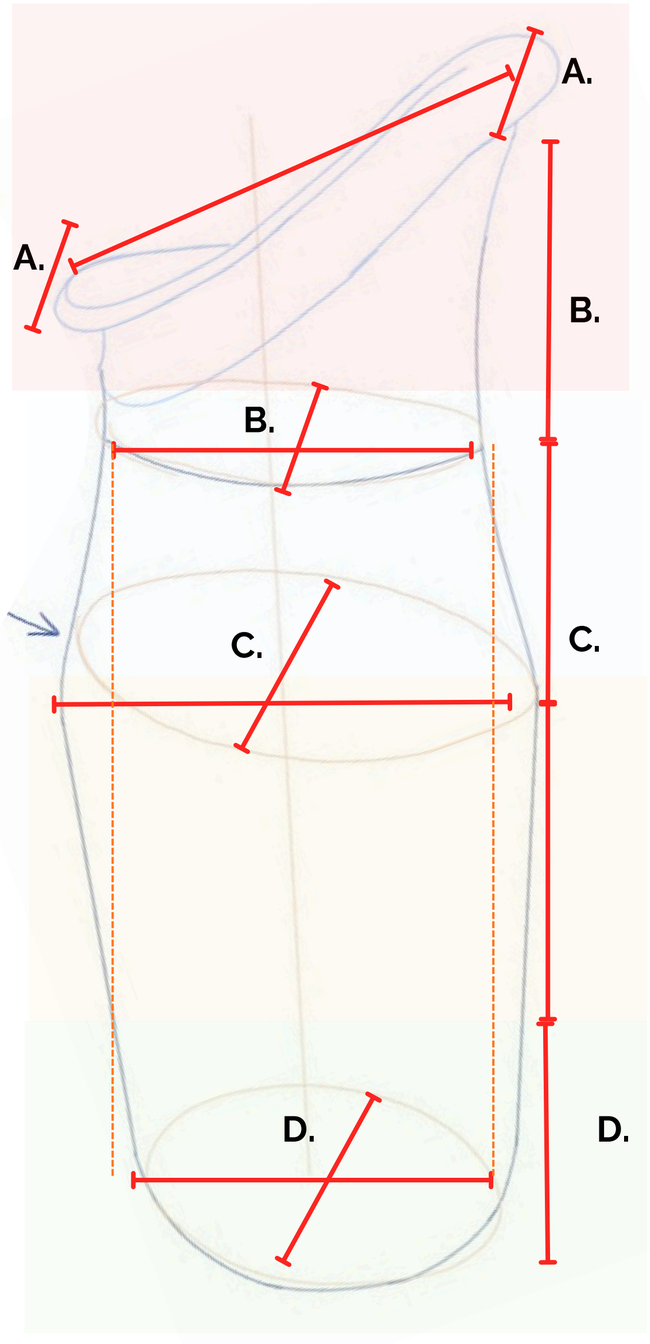
Light reminder

- this aesthetic

- Decal indent
- Green light function

- Charging
- consumer information

CAD to do



A.	Eye cup	Surface model • planes from half, quarter, sides etc • sweep - projected curve
B.	Neck	1. Neck • Loft 2. On/ off button • extrude cut / fillet 3. Decal • line including on / off button, green and red light
C.	Main Body	1. you can guided curve loft 2. revolve if symmetrical - main body and battery closing can be revolved
D.	Battery closing	1. sketch - cut bottom so you can do

refer to chris resources

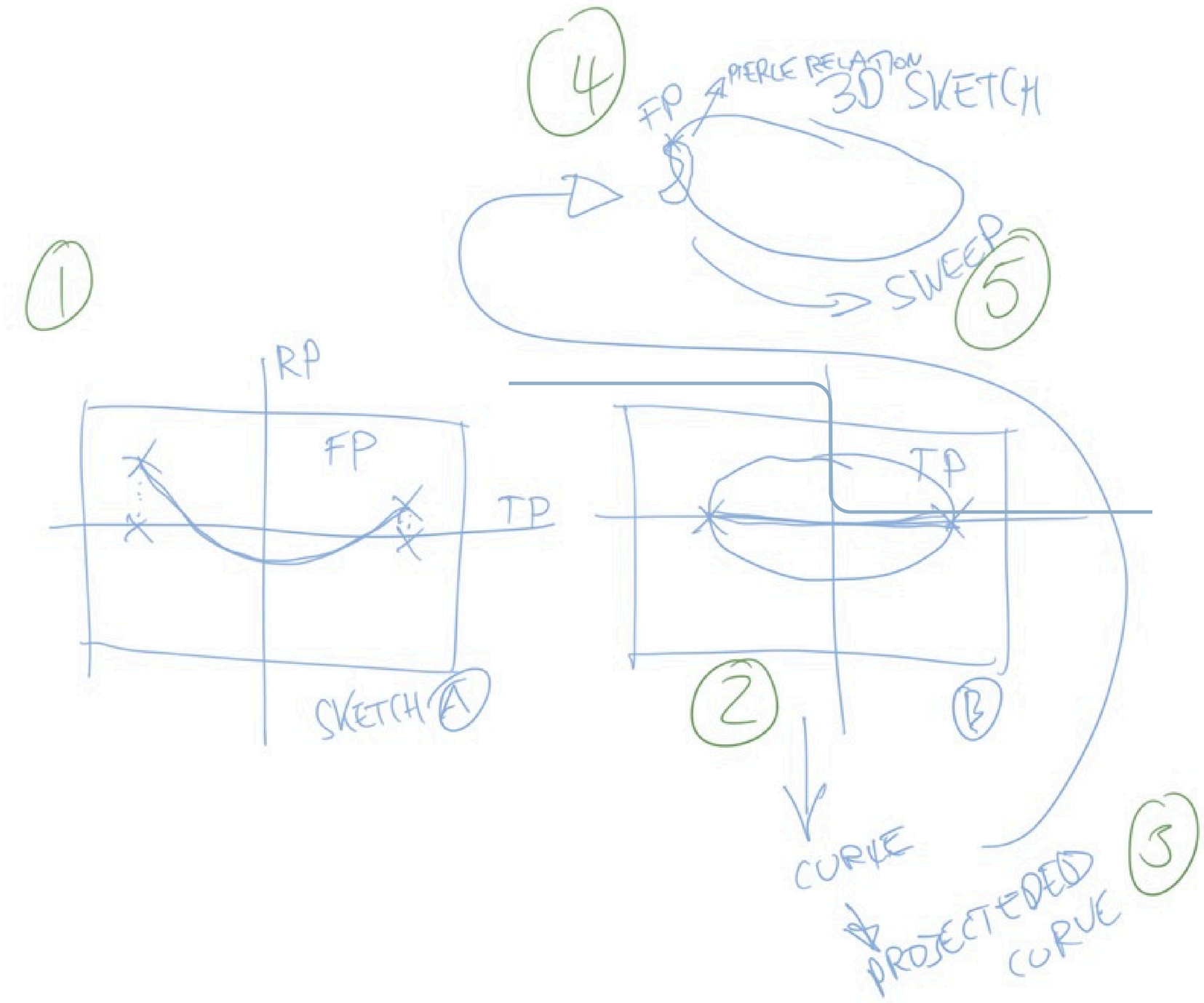
- spline
- plastic bottle video

Guided curve loft solidworks

Prototype 2

Prototype 3

Eye Cup To do list -



Dr Chris sketch

1. Front plane **sketch the curve shape** of goggle --> insert picture if goggle curve so you can match the curve angle

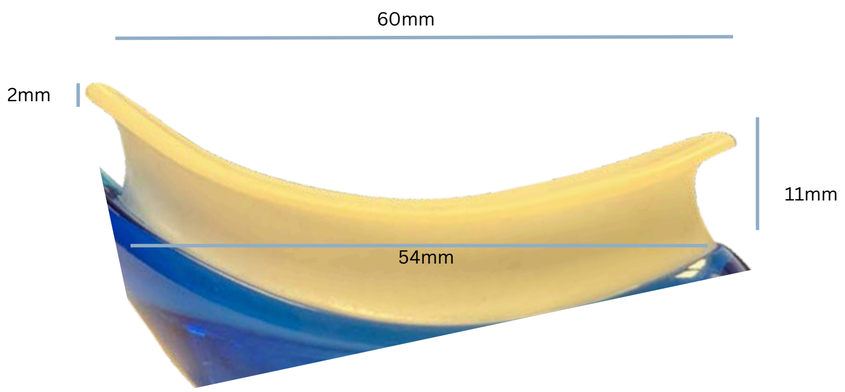
2. Top plane sketch the round ‘openess’ of the goggle
3. this is called a ‘**curve’ then ‘projected curve’** - you might be able to define both end points of the elipse (maybe)

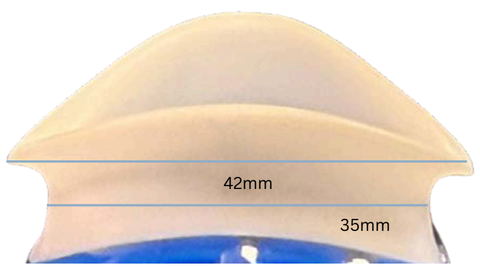
4. go to the front plane and make a **pierce relation** with a 3d sketch

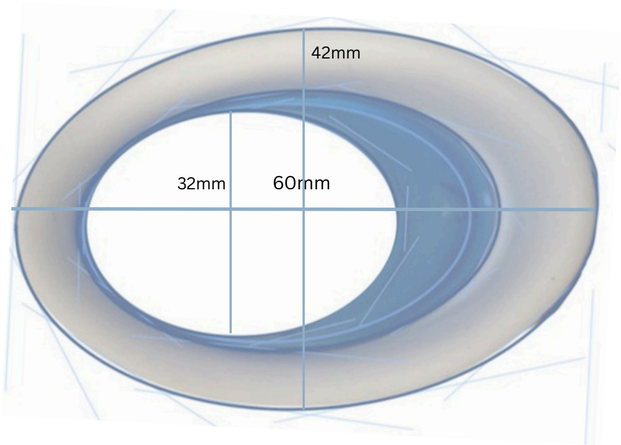
5. **Sweep** that sketch all around

Eye Cup Shape and Size

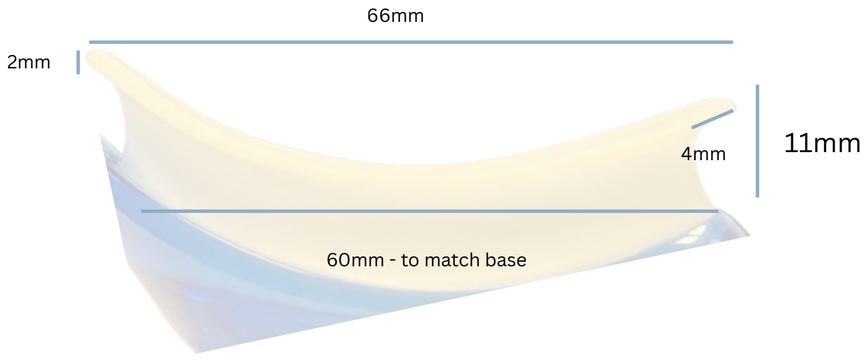
Orignal

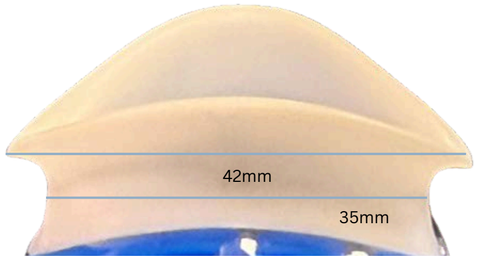


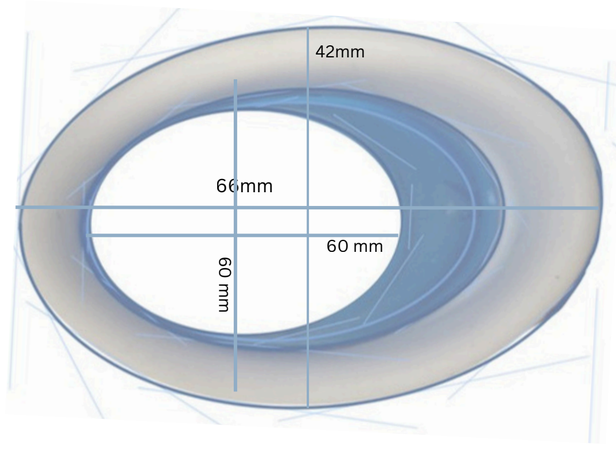




New





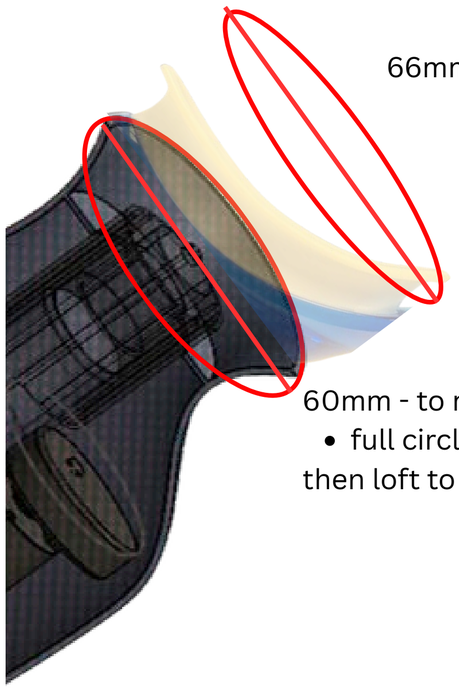


45+ 30 = 75

- the eye cup needs to be smaller than the handle for lid to fit

Eye Cup Shape and Size

60mm - to match base



66mm - to match base

60mm - to match base

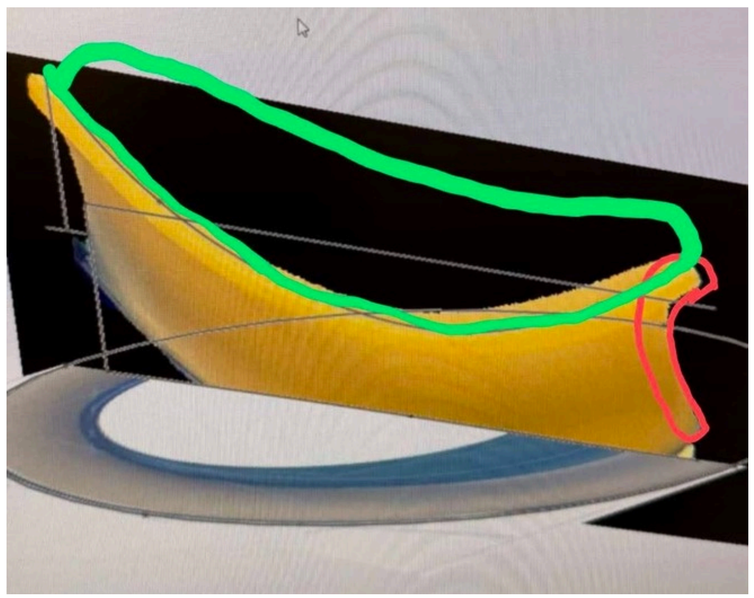
- full circle all the way around

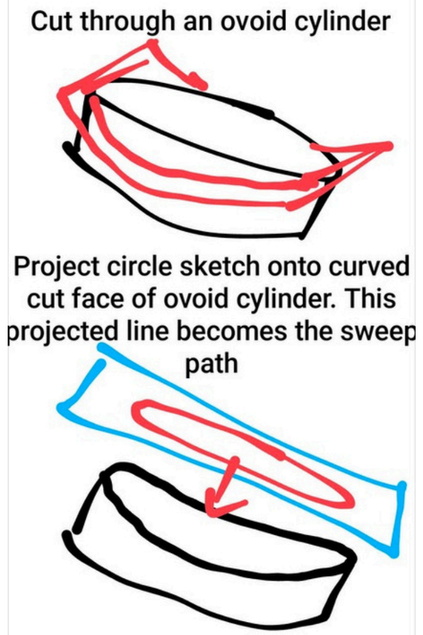
then loft to the top in different shape

Distance across is 4.7 - from side of bottle to external

- the ring light can be 2mm

bottle is 29 mm - so inner diameter is 30 and outter is 32





I extrude the cylinder shape, and the shape is going to be the same as the outer edge of goggle. And then split the cylinder as per the curve I want it. And then Project a plane / circle sketch onto the cutted extruded body (which acts as the sweep path) and then draw the red part / extruded cut the shape and when sweep it around the path'

Eye Cup To do list -

Things to do:

- eye cup

- snap fit the two shells together to attach
- draft the bottom of the ribs so they are wider nearest to the body - so this can be injection moulded
- Open / split the bottom opening (circle) (so the battery can be taken out)
- insert charging port (cut bottom) as if a USBC cord can go in
  - add grey light to the external to show user that the device is charging
- mate the battery casing to the bottom where it will open
- make all internals mate

- insert (green and red) lights - make these droplet shape so it signifies that the eye drop was successful or not - google photos examples and ask chat how the internals of that light looks - what light did they use? LED?
- add internal circuit board which is attached to the..
  - internal spiral button that is attached internally to the
  - external button
  - decide if you want to add screen too in replacement of red/ green light

- add internal ring light around eye drop bottle - make the pre-existing rib around the eye drop bottle (the top view) transparent - so when the ring light is put behind it the light can shine through - the rib is transparent to act like a light diffuser

- make transparent lid on top - maybe blue or orange

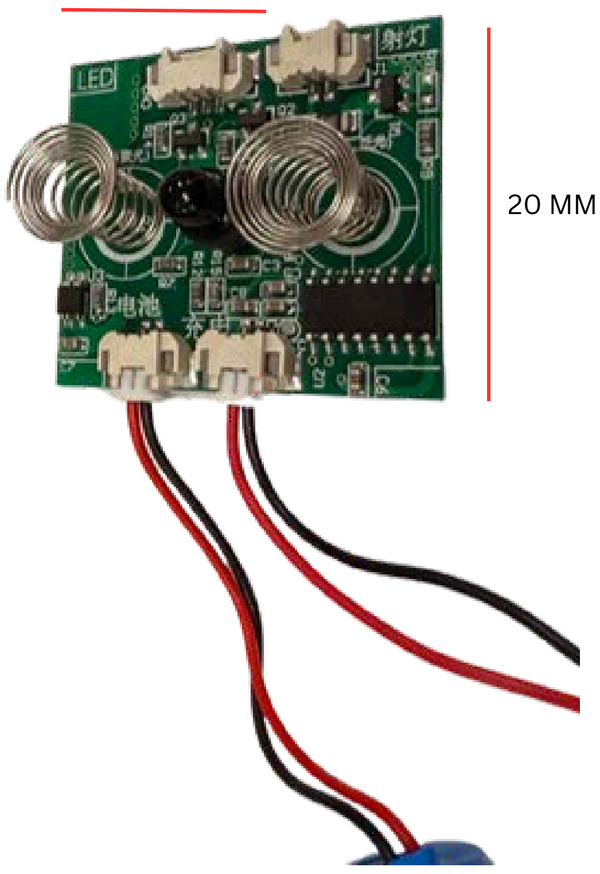
Eye Cup To do list -

Rubber texture

30 MM

45MM

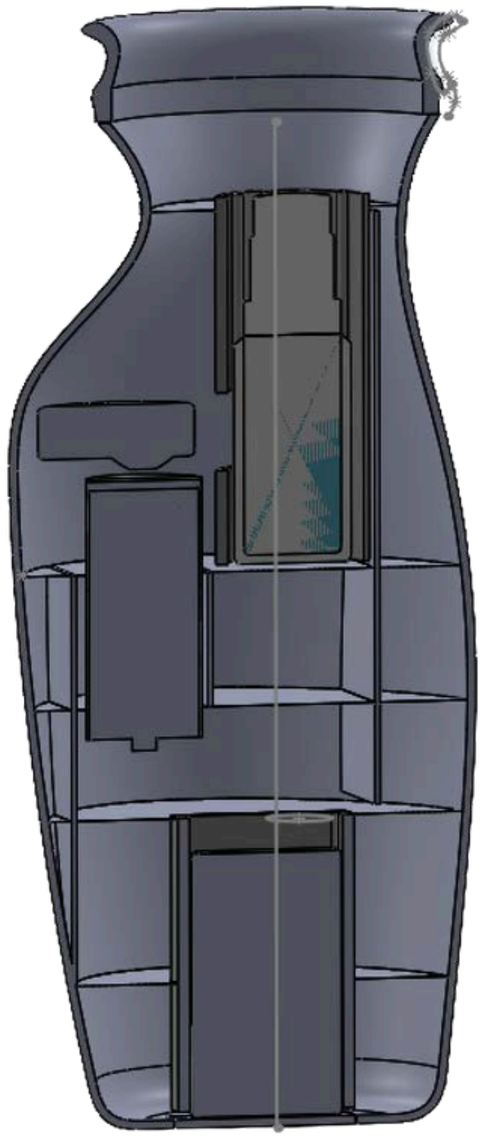
20 MM

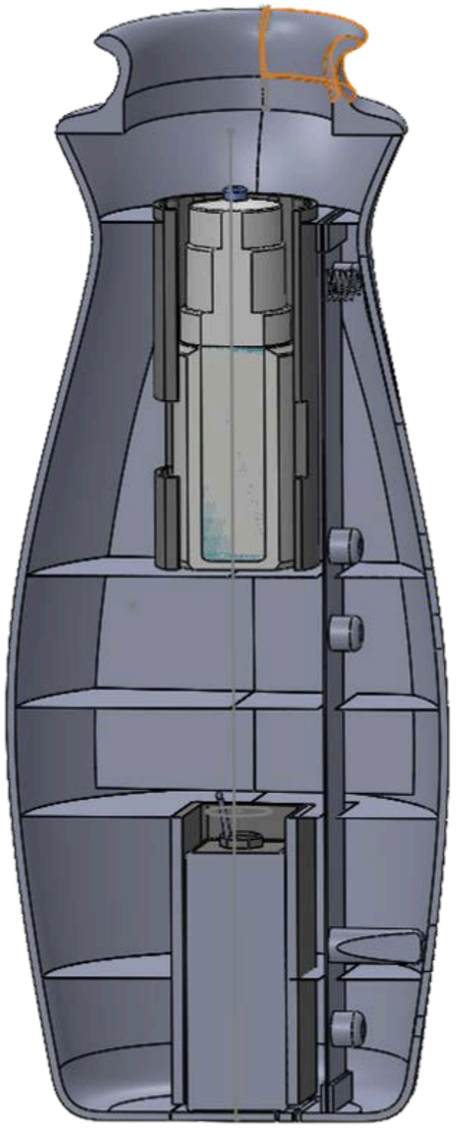


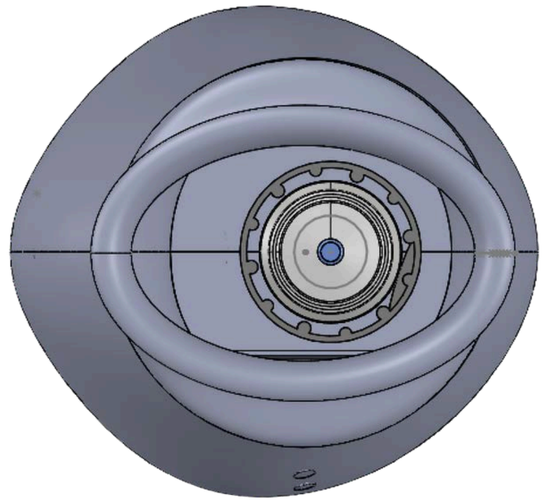
20 MM

Assembly Solidworks

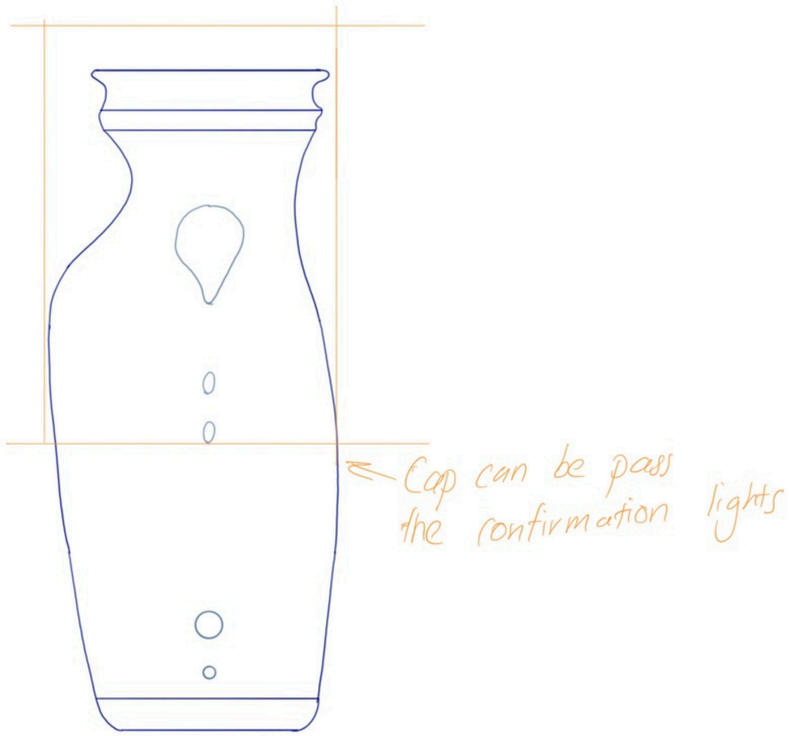
Assembly Solidworks

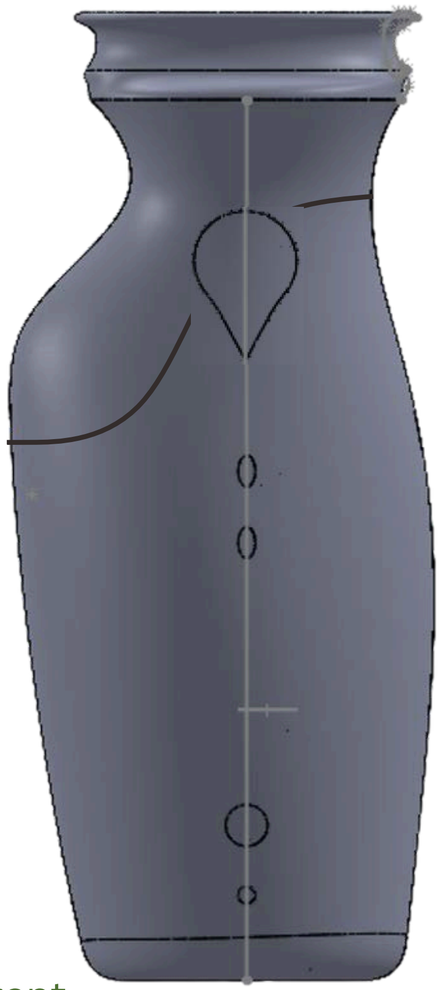






Assembly Solidworks





- Curve split would be sutitable to have a different material texture for better grippability

3D Print Prototype 1

- printed in PLA

- Make sure ribbing meets each other
- make lip and groove

Presentation / video

type of problems that i am innovating around – what is the heart of your problem

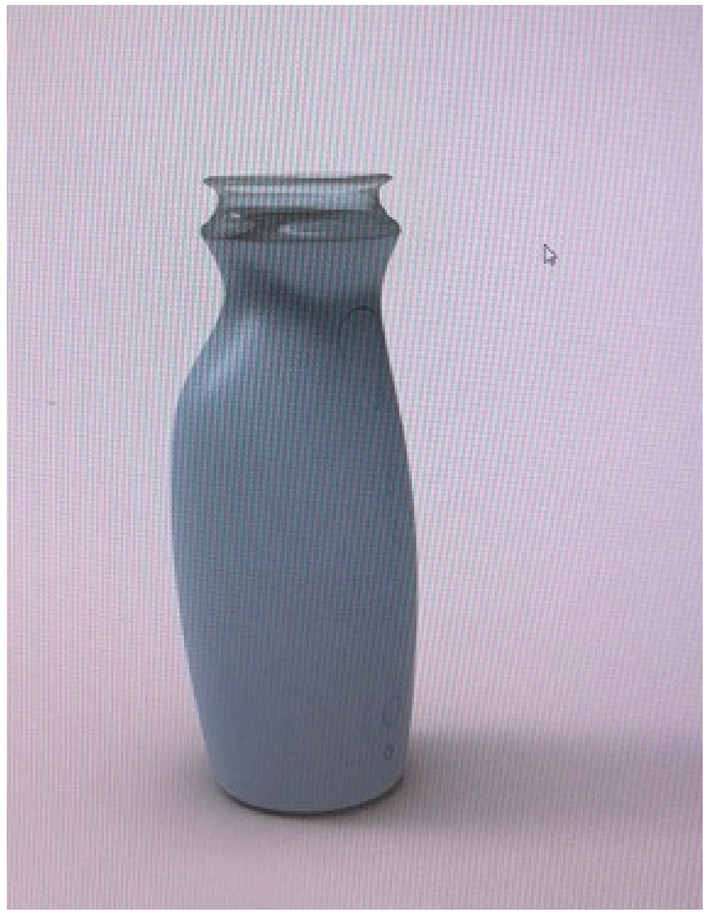
1. adhernece - and if not adhereed then gets worse → issue addressed
   - education of condition
   - if not administered

2. emotional, physical. –> sense of urgency
   - people who are anxious - dxercity - range of motion

3. consulting with health care professional
   - enhancing quality - the essence of video
   - have sens of independence – travel context , bathroom

13 week

Keyshot practicing



Colours inspired by Dictionary of Colour Combinations

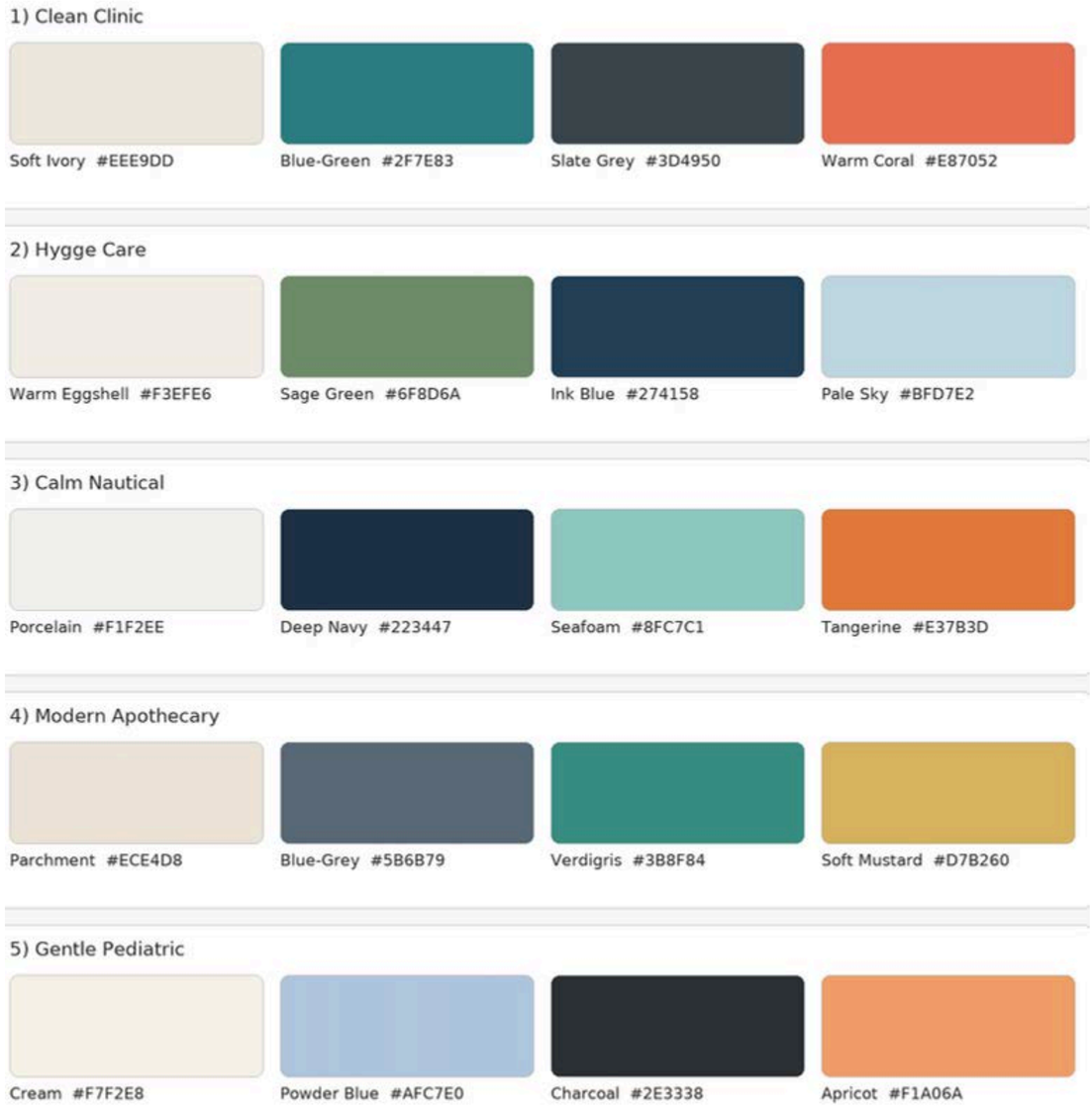
#3D4950
(61,73,80)

#2F7E83
(47,126,131)

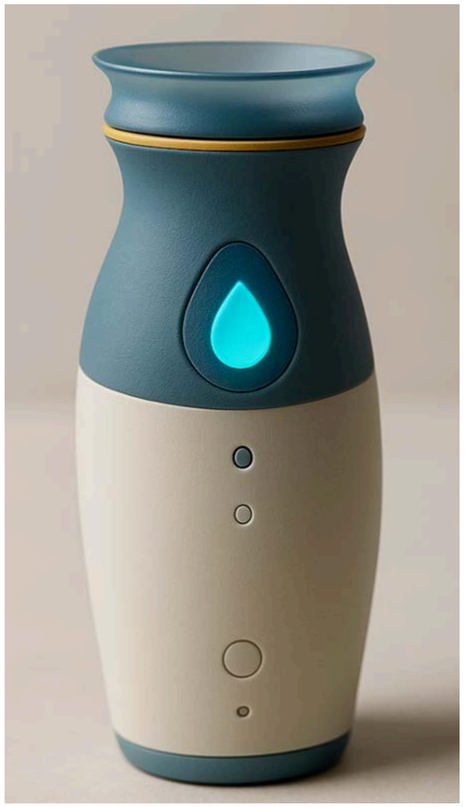
#E87052
(232,112,82)

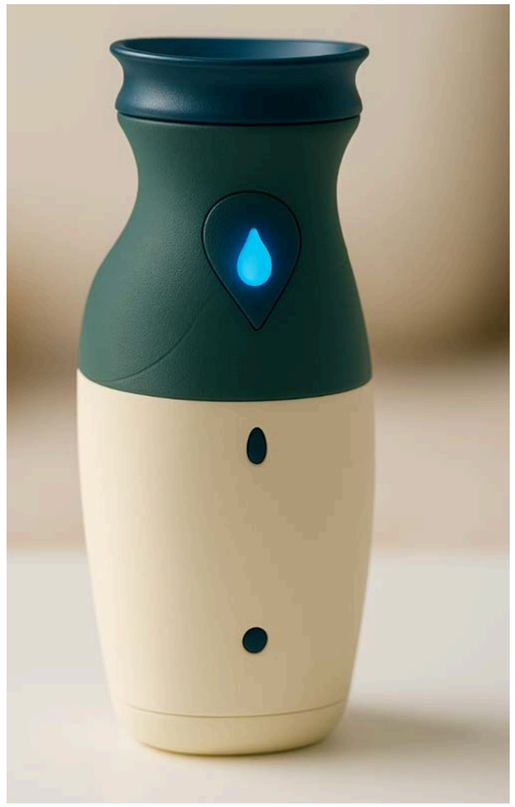
#EEE9DD
(238,233,221)

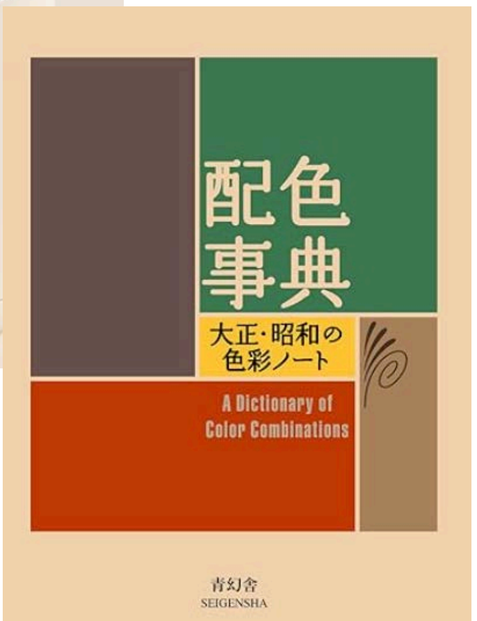
#6F8D6A
(111,141,106)



Colours inspired by Dictionary of Colour Combinations







Logo

e drop

b drop

b drop

bdrop

drop

bdrop

b drop

drop

bdrop

b drop

b-drop

b-drop

b-drop

drop

b-drop

Keyshot Rendering Practice

3D Print Prototype 2

printed in PLA

good indent of button

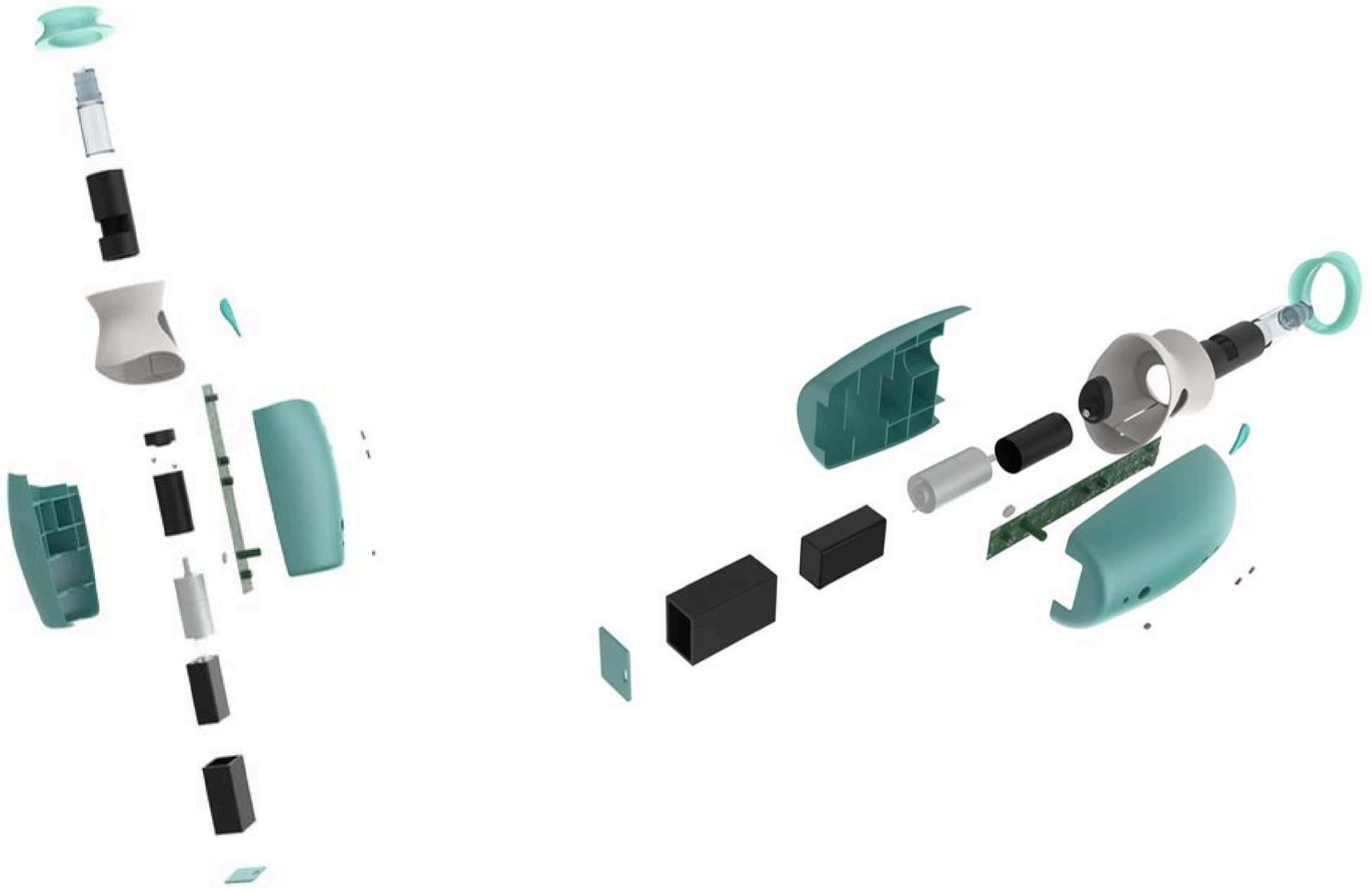
good handle size

Prototype 2 - Sprayed

Keyshot - Colour Combinations

Keyshot - Hero images

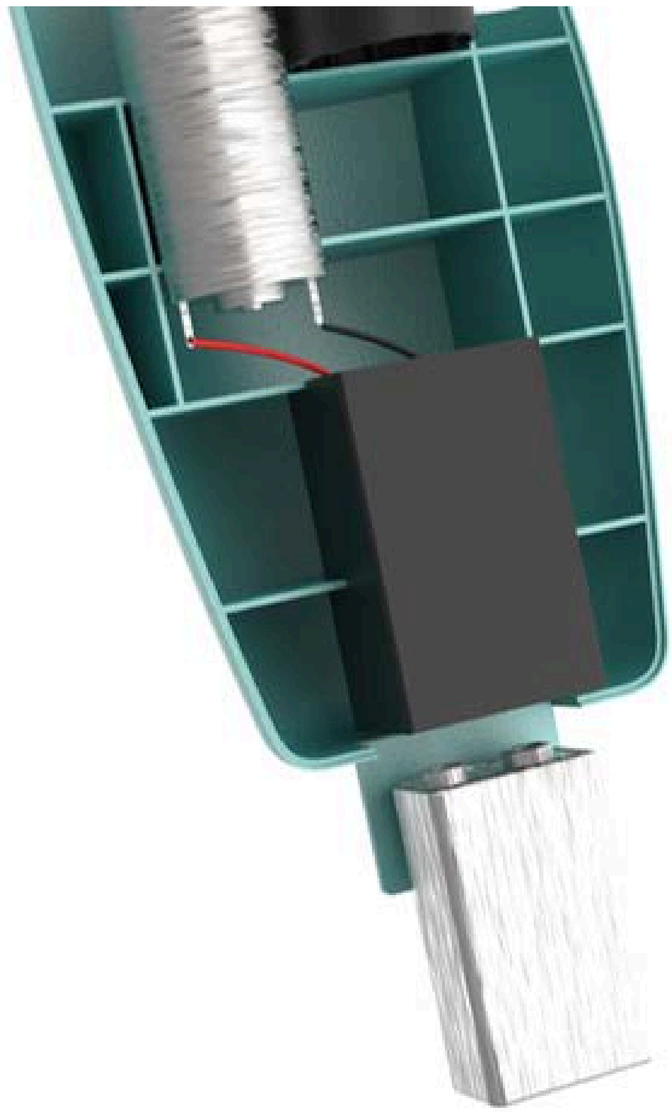
Keyshot - Exploded View

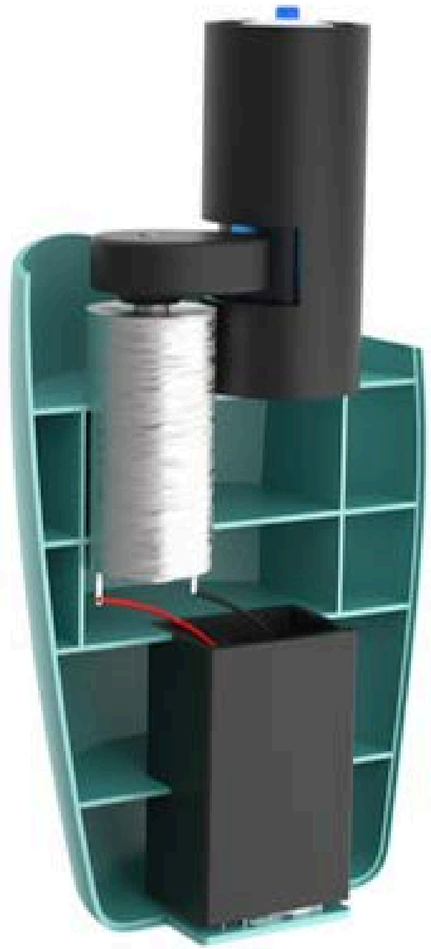


Keyshot - In context

Keyshot - Detailed view

Keyshot - Internal Mechanisms





Keyshot - logo

Final Prototype

THANK YOU