# Detach the Cap

—Locking system

Concept One

interlock

This piece inside the cap created the retractable anchor points.

When push down the bottom, the 'hook' will retract due to the elastic presure is overcomed by your finger.

When release the button, the elastic presure at the hook will come back up and back to its normal position.

rubber seal ring

rubber grip

The reason That I have to use presse locking points is that the drink opening have to aling with the hand grip in order to have a reasonable design.

The most common way to detach the cap is by a screw system. This is a good system but snot suitable for my design. As the drink opening of my design have to aling with the grip, the cap will have to be in the same place, which is impossible for this screw system to do.

Screw in Cap

Concept 2

—Smoke detector style locking system

Smoke Detector

Two claws

fitting hole

Idea 1

Then I though about the way the smoke detector attach to the base. It have two claws and will slide into the fitting hole which make it fit into the same position each time they attatch. This is a great idea for my cap, It is easy to fit and will aling the hand grip everytime.

rubber seal ring

This edge will be thinner so the drink opening is very close to the lock.

The seal ring is outside of the lock system, so the lock system will stay clean.

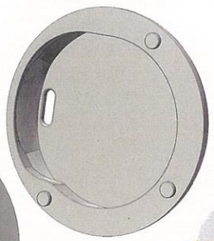
Using 3 locks can ensure the cap well and minimize leaks.

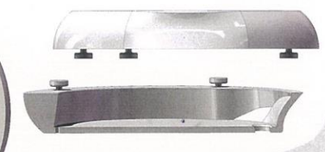
Locking System

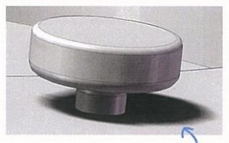
Idea 2

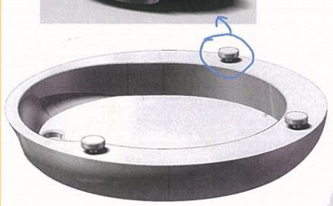
## Detach (Locking) System -Cap

Using Cocnept2
Idea 2

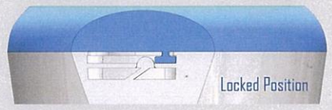


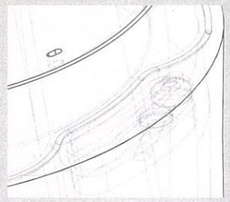


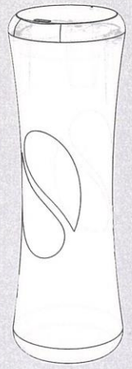


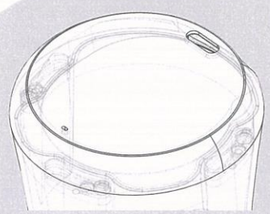


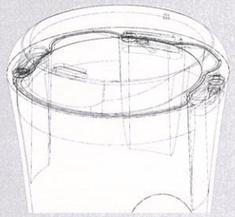
Seal ring



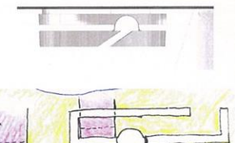


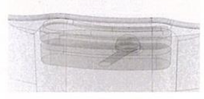


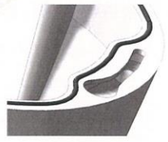
## Final Assembly

## Detach (Locking) System -Main Body

Using Cocnept2
Idea 2

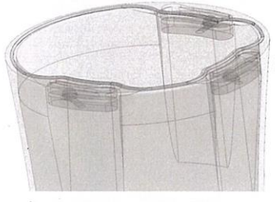




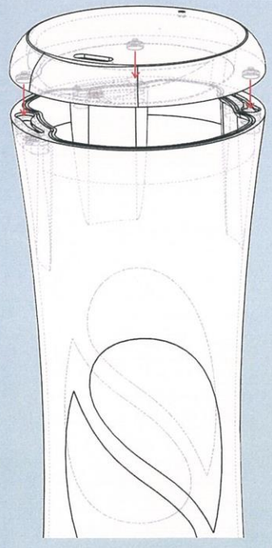


This rubber ring seals the space between the cap and the main body. I placed it outside of the locking system so it minimized the chance of water get into it.

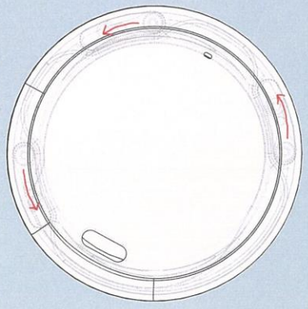
Rubber seal ring

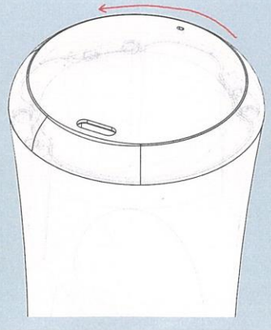


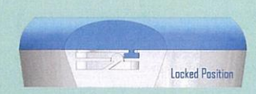
## Step 1 -Align the entry hole

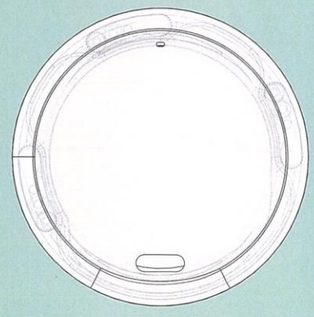


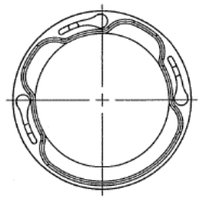
## Step 2 -Twist and lock (unlock)









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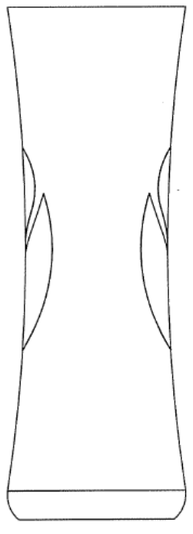
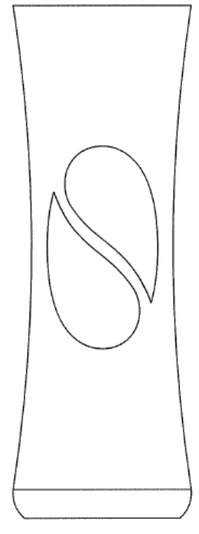
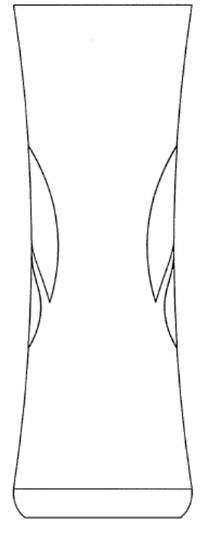


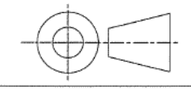
LEFT ELEVATION

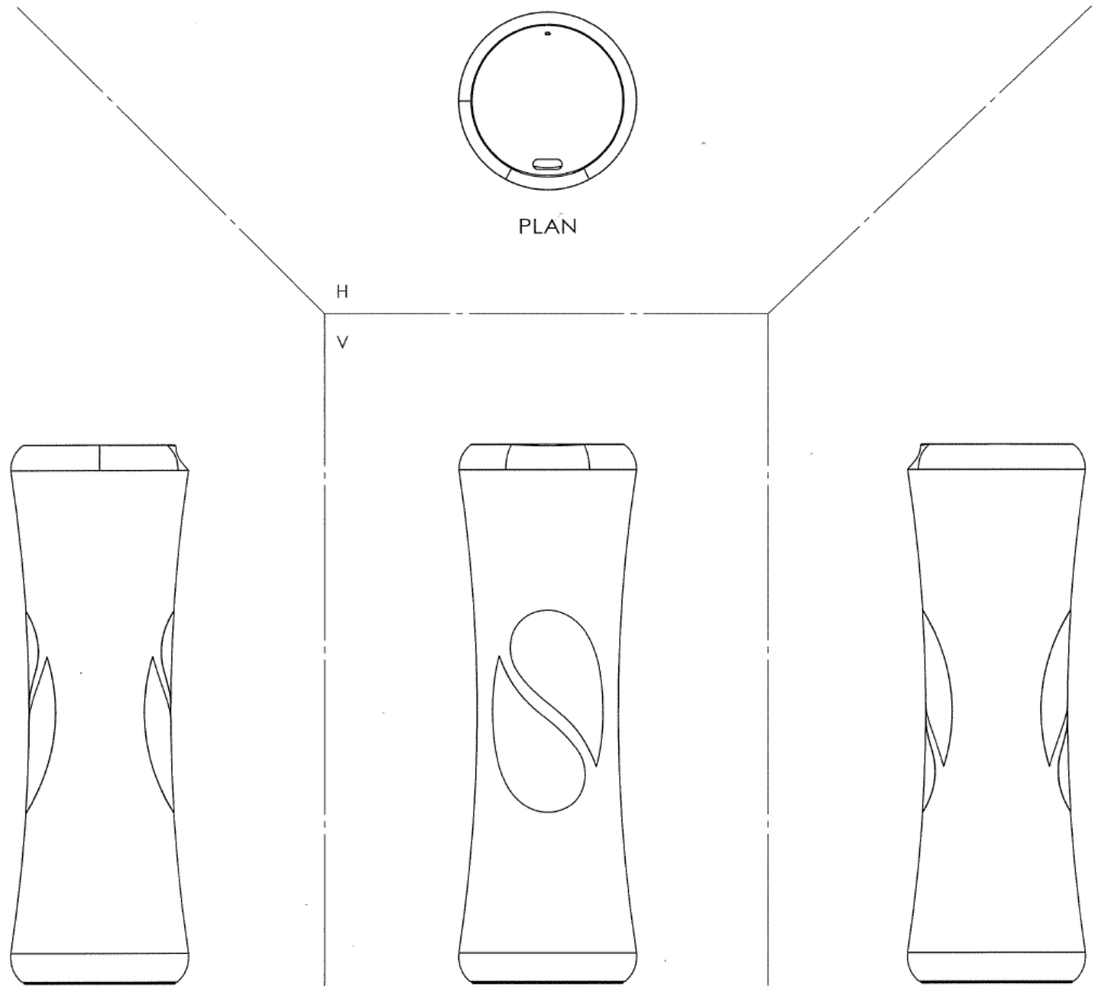


MAIN ELEVATION



RIGHT ELEVATION

| | | | | | |
|---|---|---|---|---|---|
| | 18/10/2017 | BOTTLE MAIN BODY |  | SCALE 1:2 | DRAWING 1 |



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LEFT ELEVATION

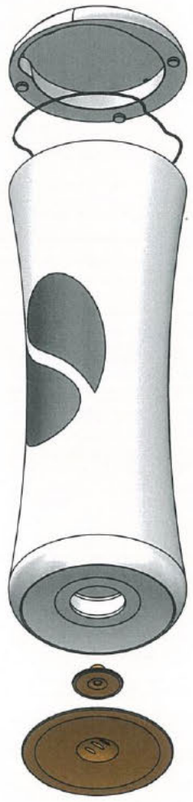
MAIN ELEVATION

RIGHT ELEVATION

| | | | | | |
|---|---|---|---|---|---|
| | 18/10/2017 | BOTTLE ASSEMBLY | | SCALE 1:2 | DRAWING 1 |

RENDERED EXPLODED
MAIN ELEVATION

RENDERED EXPLODED
ISOMETRIC

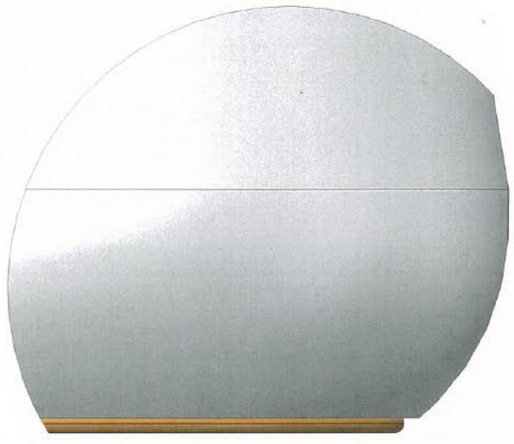


RENDERED EXPLODED
ISOMETRIC VIEW

| | | | | |
|---|---|---|---|---|
| | 18/10/2017 | BOTTLE ASSEMBLY | SCALE 1:2 | DRAWING 3 |


RENDERED MAIN ELEVATION
SCALE 1:1


RENDERED RIGHT ELEVATION
SCALE 1:1



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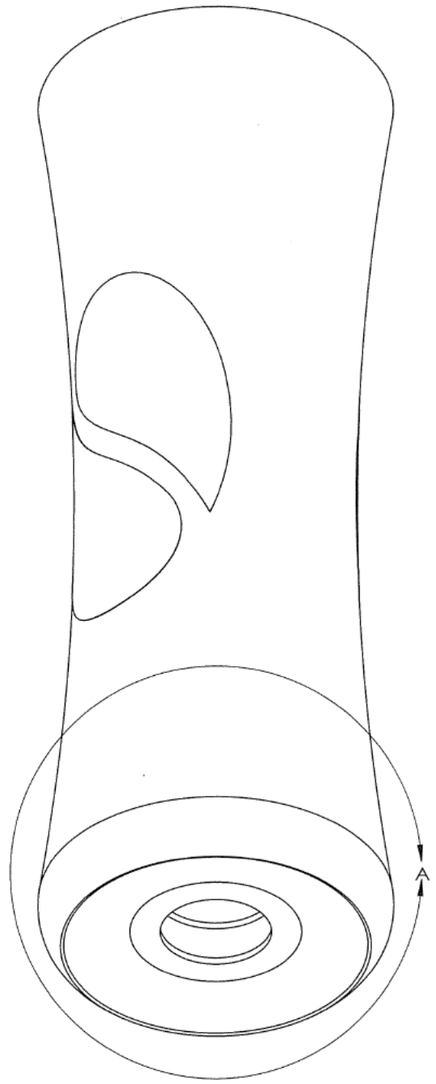
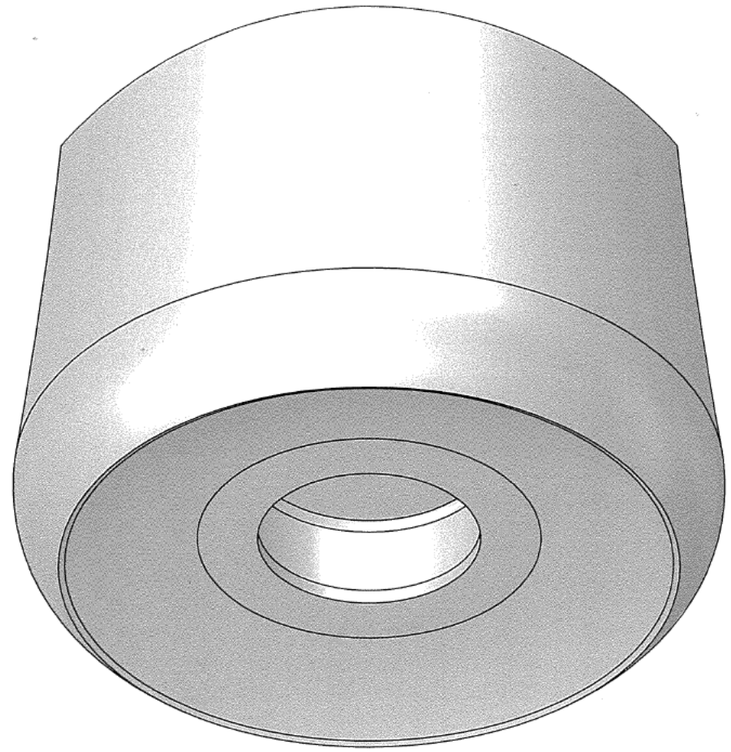
RENDERED BASE DETAIL

| | | | |
|---|---|---|---|
| | 18/10/2017 | BOTTLE ASSENBLY | DRAWING 2 |

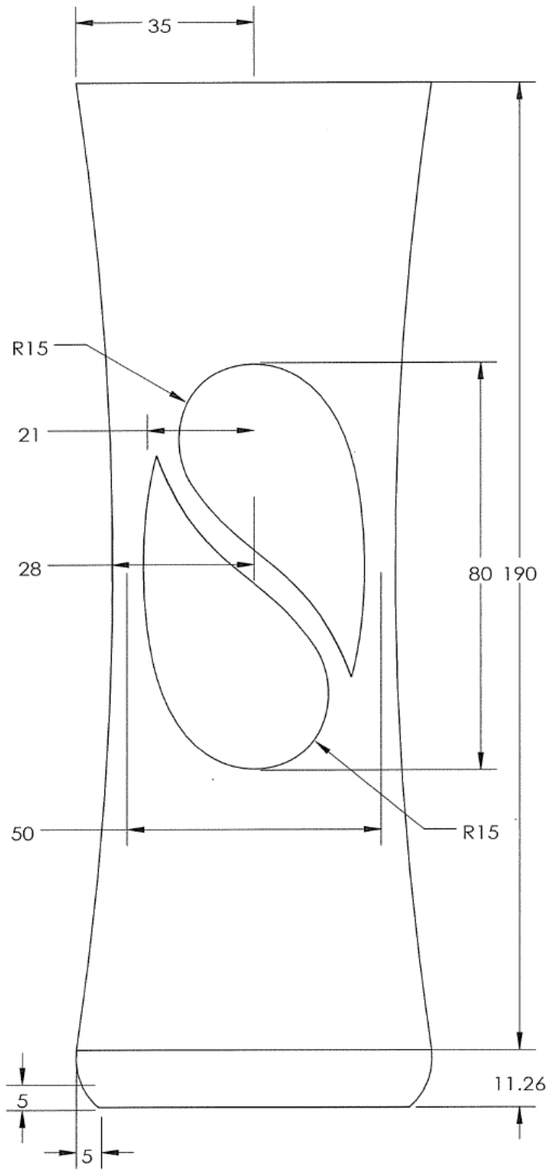


ISOMETRIC BOTTOM VIEW
SCALE 1:1

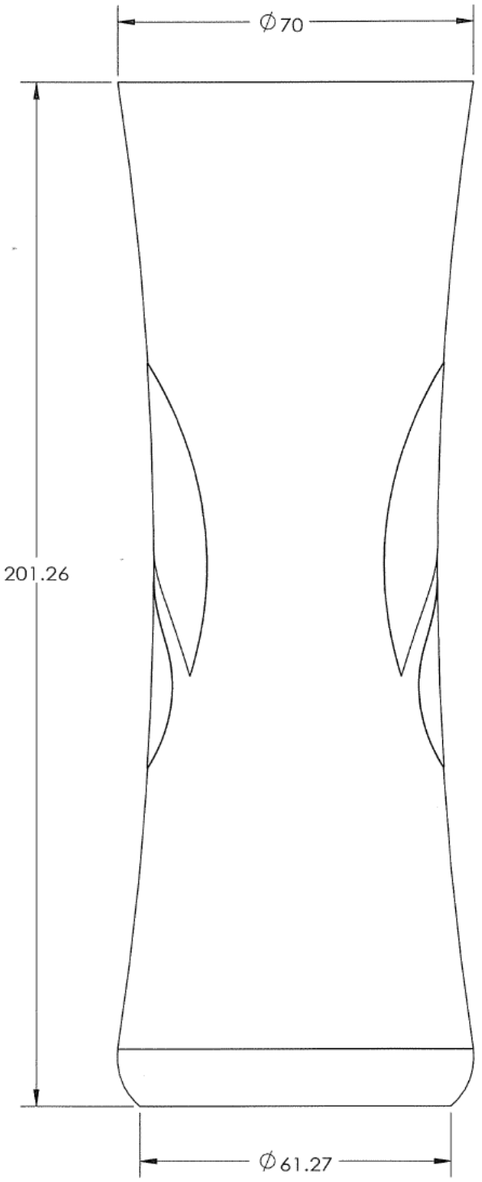


RENDERED DETAIL A
SCALE 2 : 1

| | | | |
|---|---|---|---|
| | 18/10/2017 | BOTTLE MAIN BODY | DRAWING 3 |

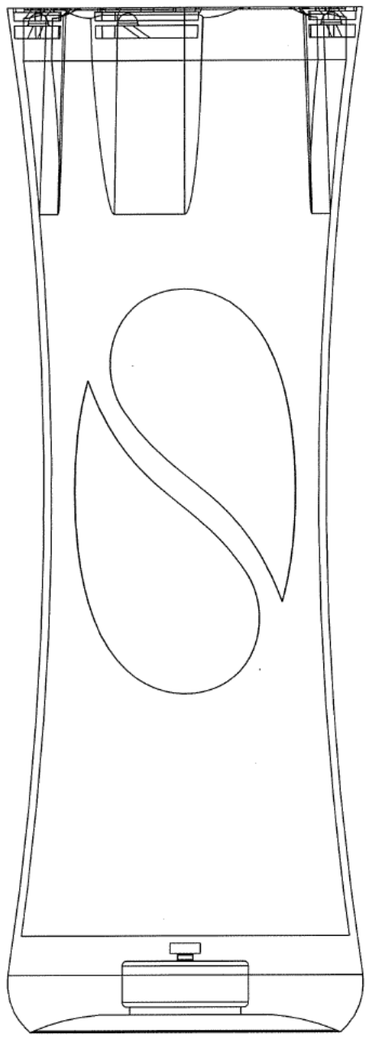



MAIN ELEVATION

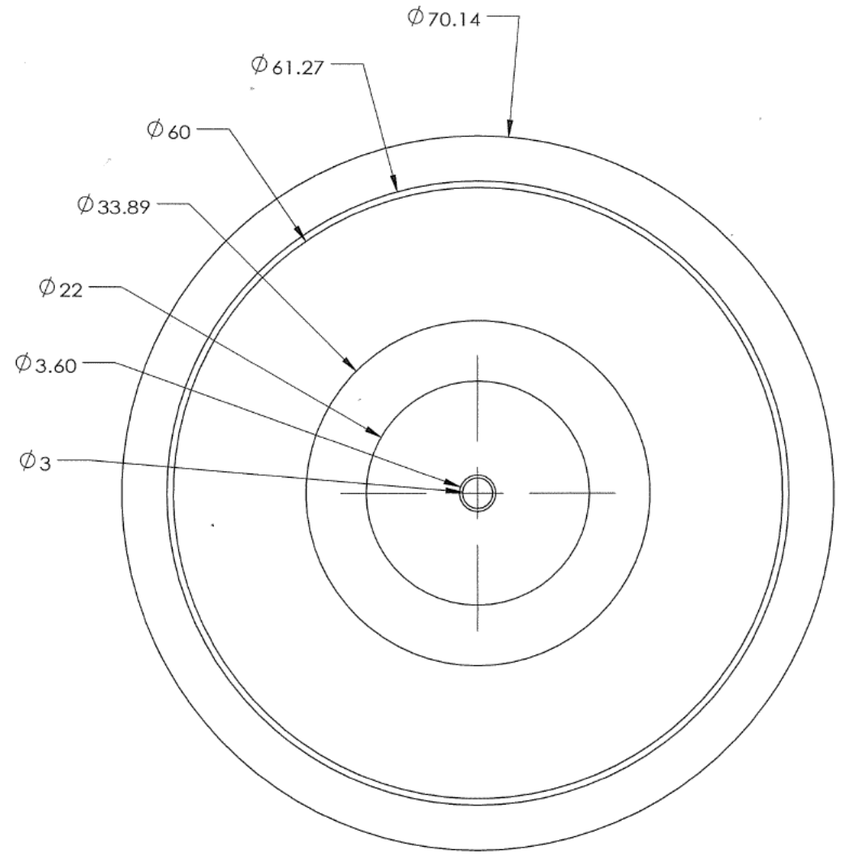



RIGHT ELEVATION

| | | | | |
|---|---|---|---|---|
| | 18/10/2017 | BOTTLE MAIN BODY | SCALE 1:1 | DRAWING 2 |

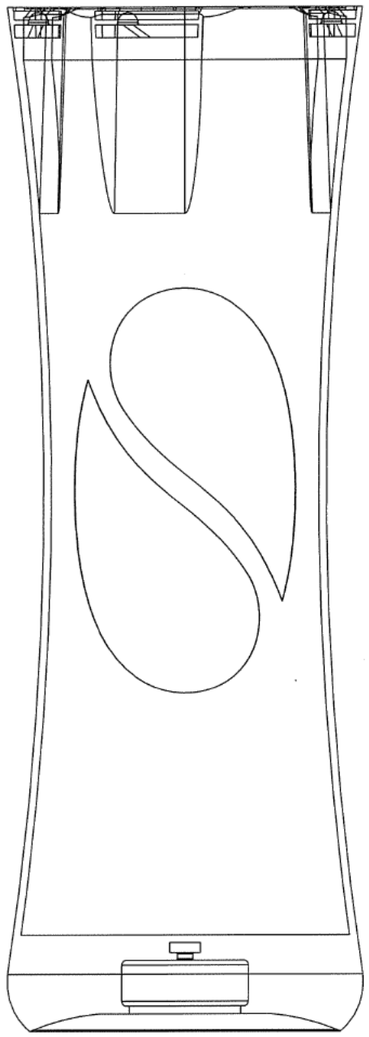


WIREFRAME MAIN ELEVATION
SCALE 1:1

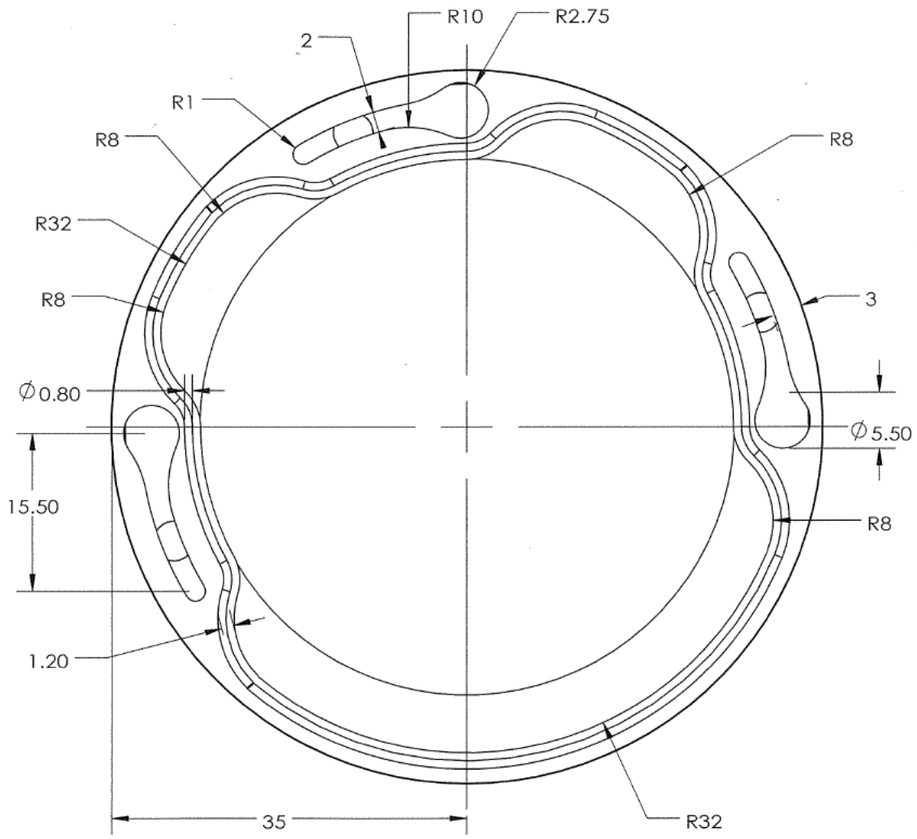



BOTTOM VIEW
SCALE 2:1

| | | | |
|---|---|---|---|
| | 18/10/2017 | BOTTLE MAIN BODY | DRAWING 5 |

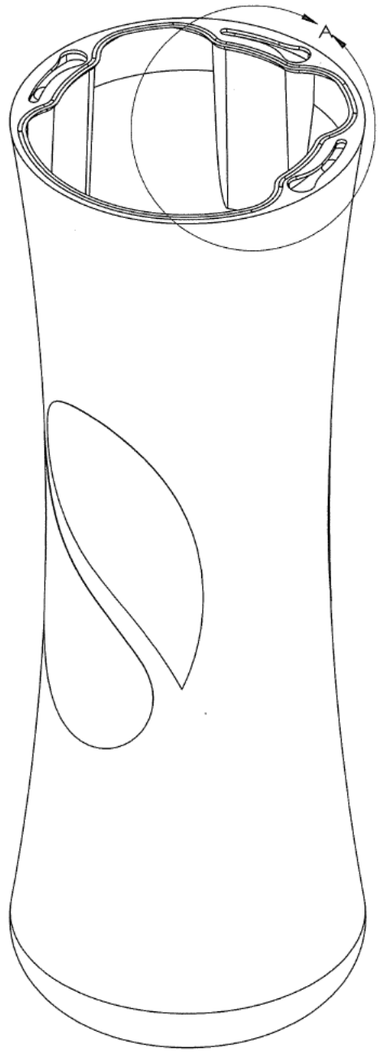


WIREFRAME MAIN ELEVATION
SCALE 1:1

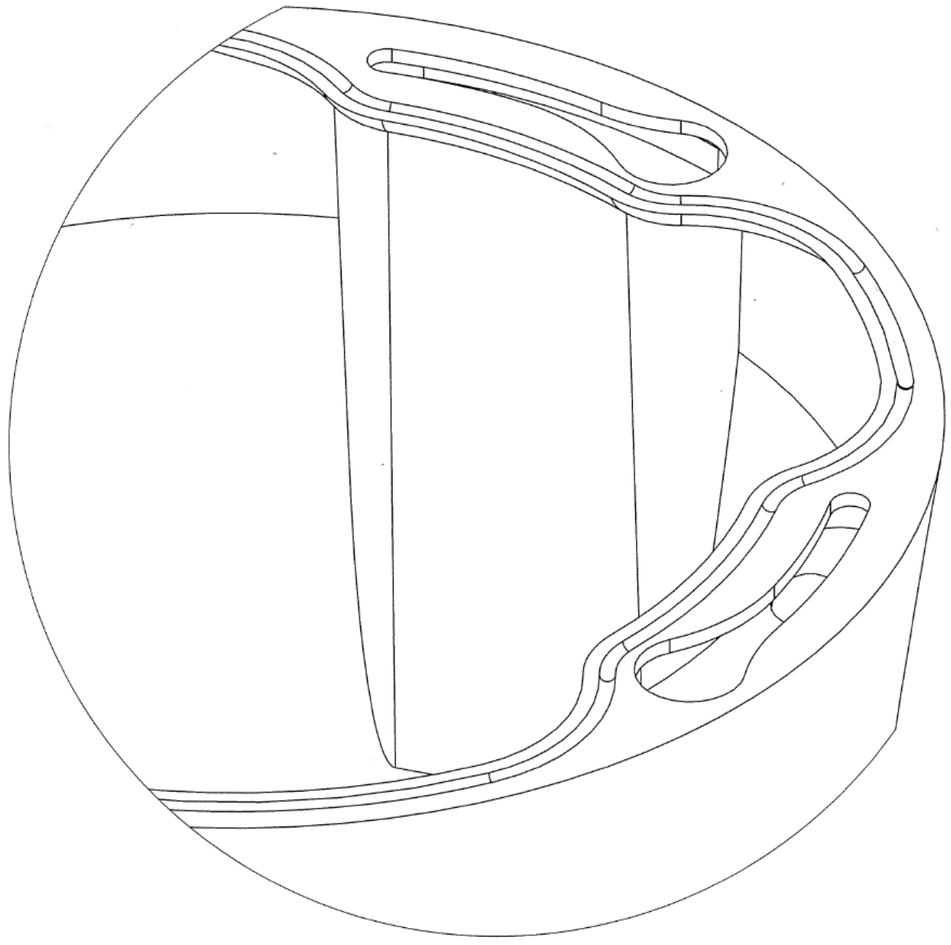



PLAN
SCALE 2:1

| | | | |
|---|---|---|---|
| | 18/10/2017 | BOTTLE MAIN BODY | DRAWING 4 |

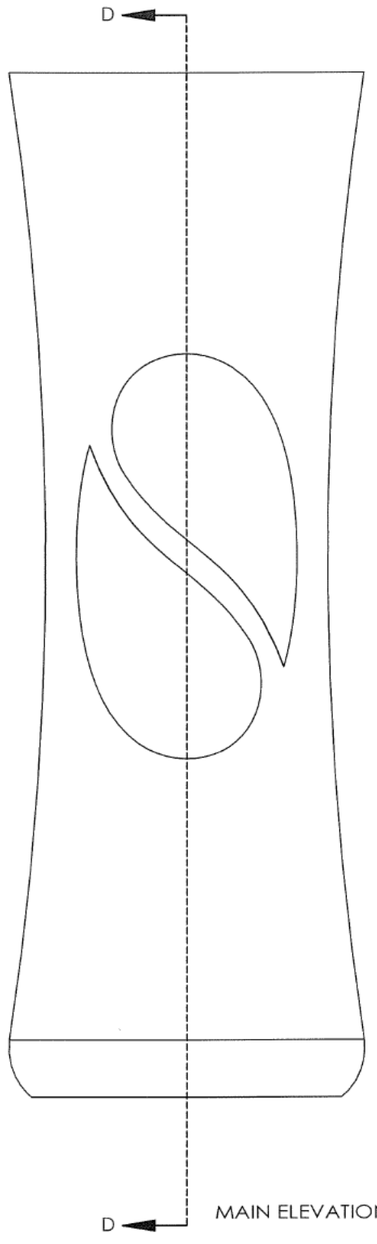


ISOMETRIC
SCALE 1:1

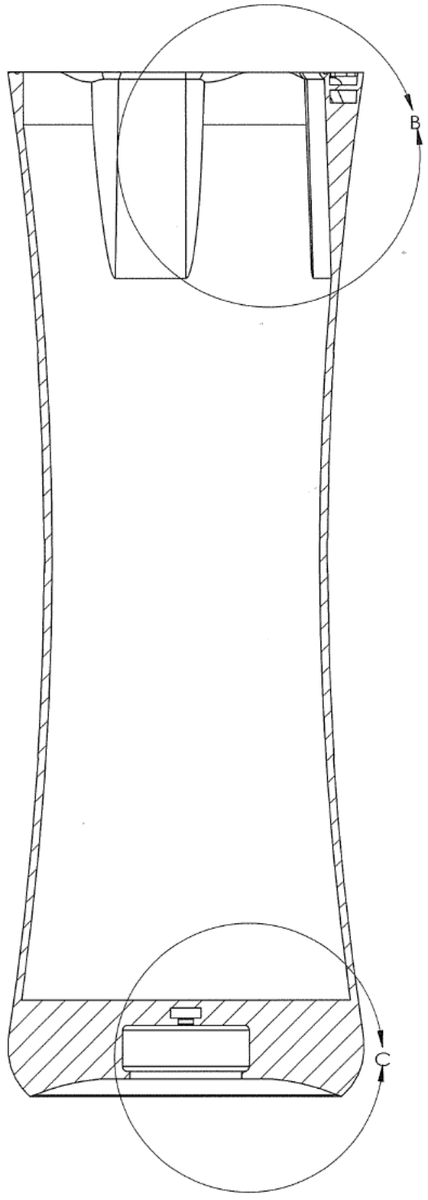


DETAIL A
SCALE 4 : 1

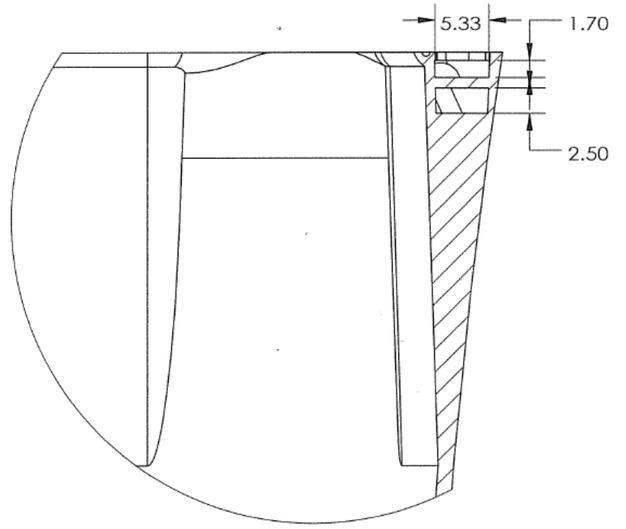
| | | | |
|---|---|---|---|
| | 18/10/2017 | BOTTLE MAIN BODY | DRAWING 6 |



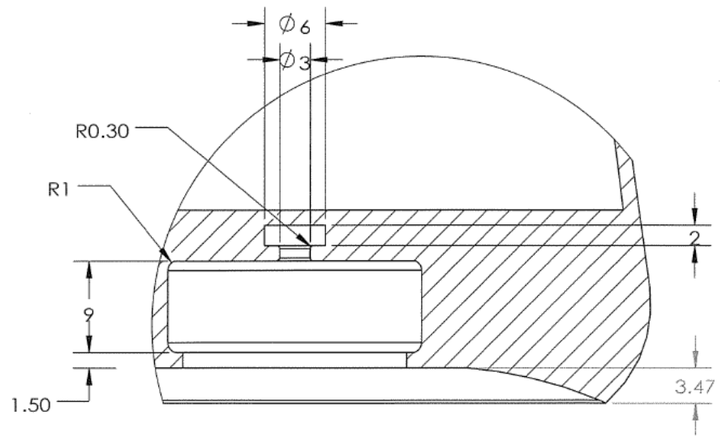

MAIN ELEVATION




SECTION D-D
SCALE 1 : 1

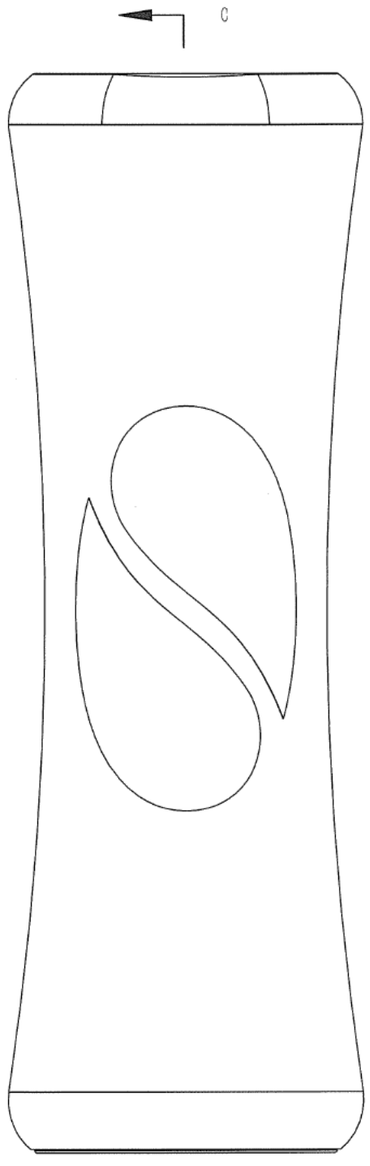



DETAIL B
SCALE 2 : 1

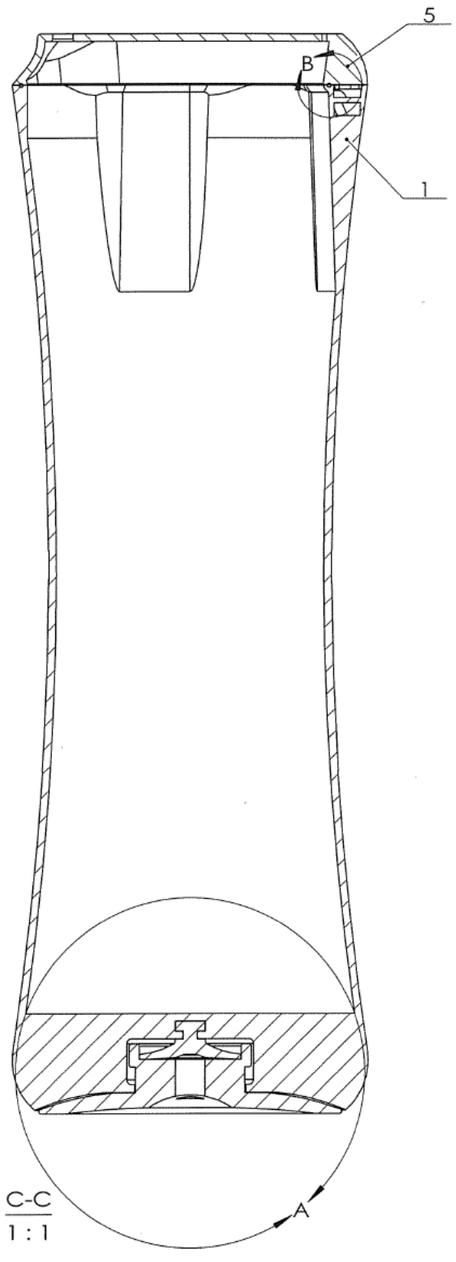



DETAIL C
SCALE 2 : 1

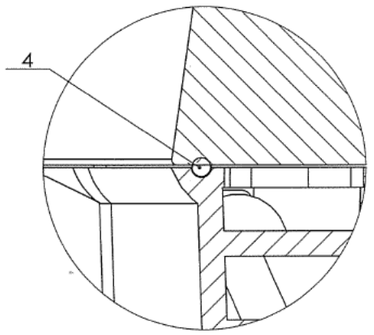
| | | | |
|---|---|---|---|
| | 18/10/2017 | BOTTLE MAIN BODY | DRAWING 7 |



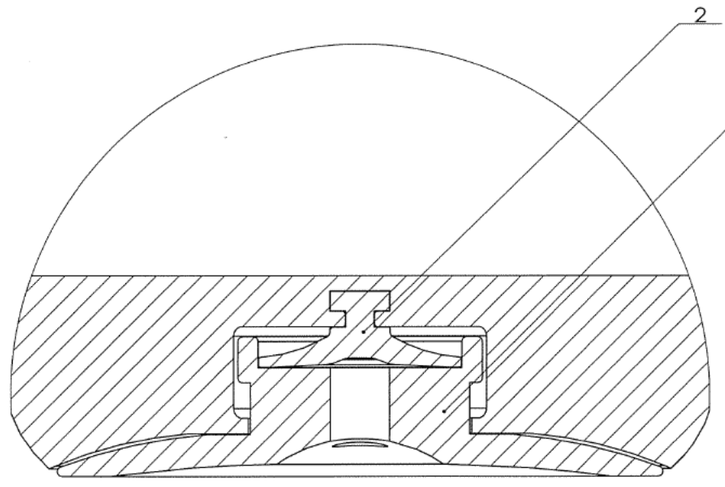

MAIN ELEVATION
SCALE 1:1




SECTION C-C
1 : 1



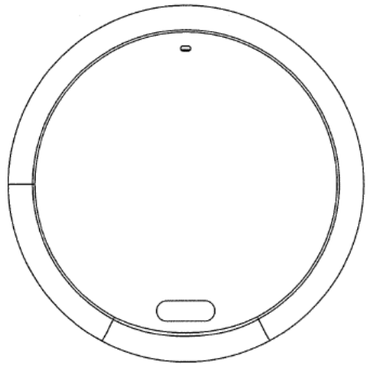

B
5 : 1 DETAIL OF RUBBER SEAL




A
2 : 1 DETAIL OF SUCTION CUPS

| PART# | NAME | MATERIAL |
|---|---|---|
| 1 | MAIN BODY | BPA FREE PLASTIC |
| 2 | SECONDARY SUTION CUP | RUBBER |
| 3 | MAIN SUTION CUP | RUBBER |
| 4 | RUBBER SEAL | RUBBER |
| 5 | CAP | BPA FREE PLASTIC |

| | | | |
|---|---|---|---|
| | 18/10/2017 | BOTTLE ASSEMBLY | DRAWING 4 |



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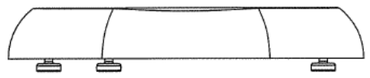
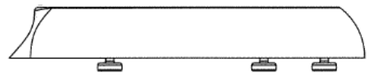
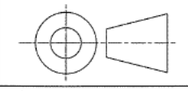
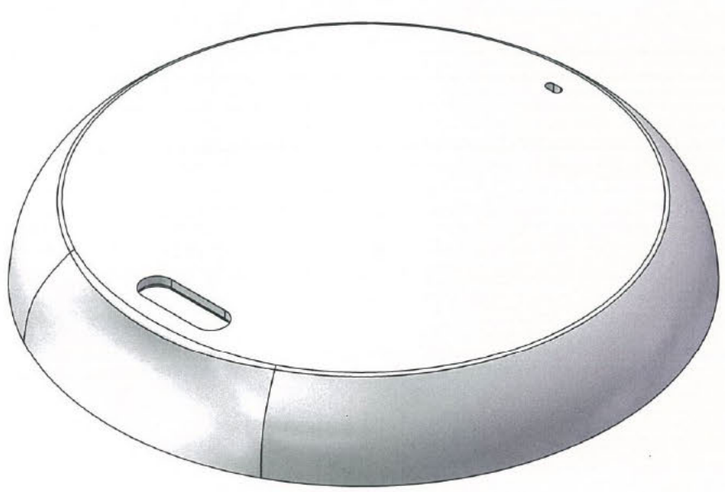


MAIN ELEVATION

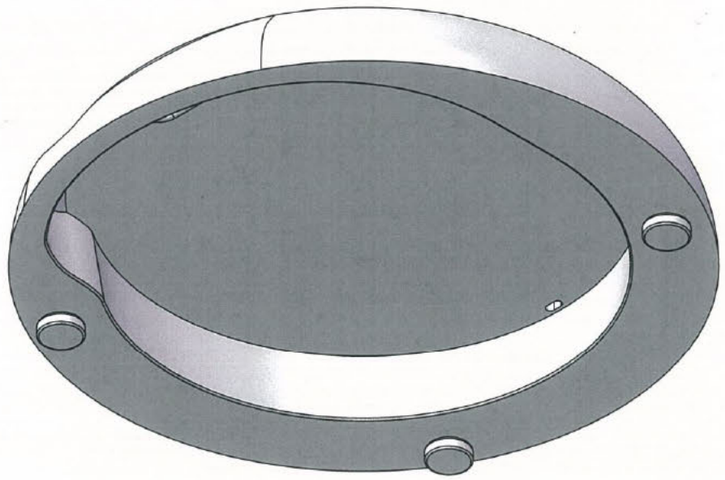


RIGHT ELEVATION

| | | | | | |
|---|---|---|---|---|---|
| | 18/10/2017 | BOTTLE CAP |  | SCALE 1:1 | DRAWING 1 |

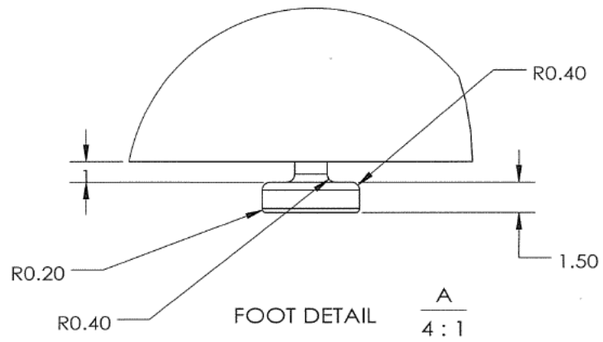


RENDERED ISOMETRIC VIEW

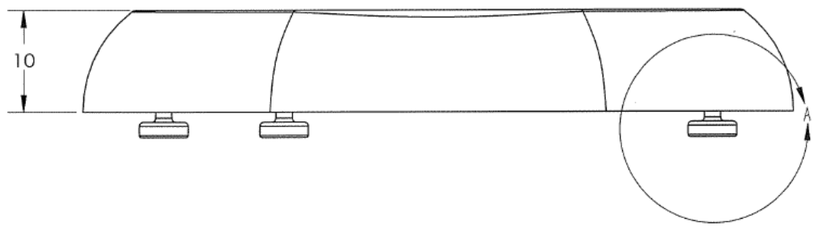


RENDERED ISOMETRIC BOTTOM VIEW

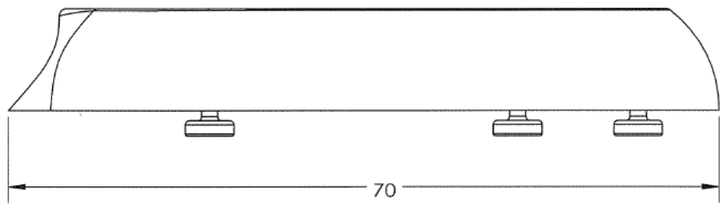
| | | | | |
|---|---|---|---|---|
| | 18/10/2017 | BOTTLE CAP | SCALE 2:1 | DRAWING 2 |




FOOT DETAIL $\frac{A}{4:1}$

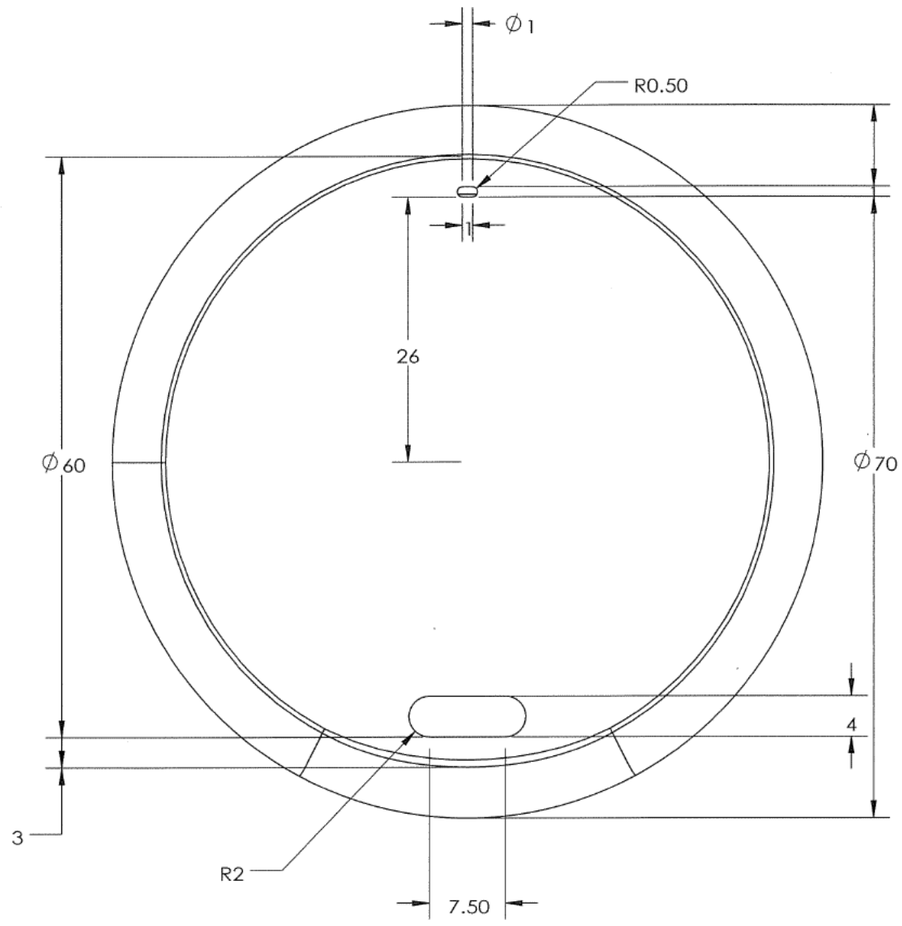



MAIN ELEVATION

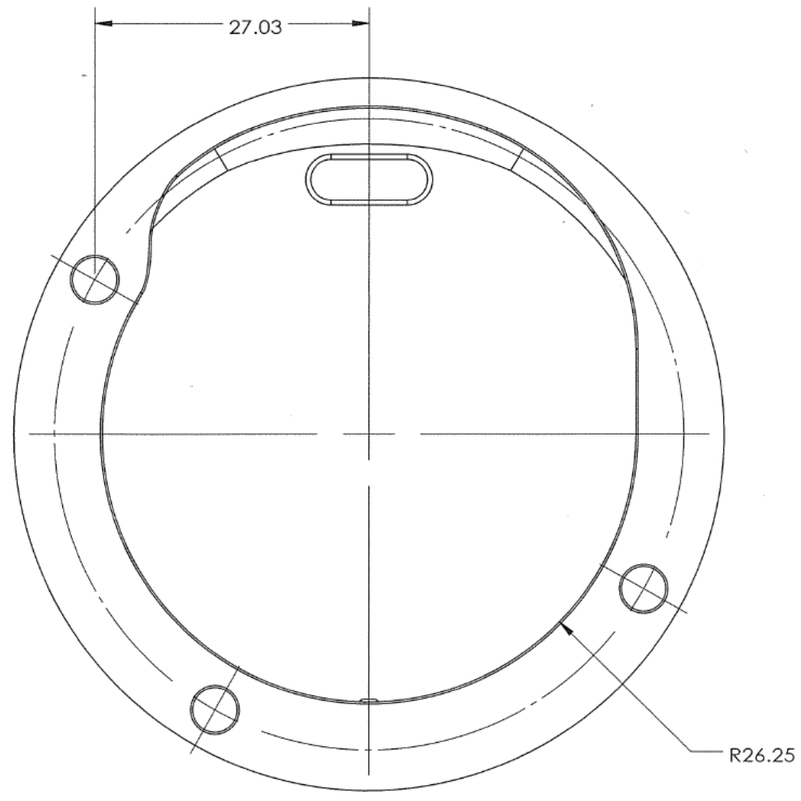



RIGHT ELEVATION

| | | | | |
|---|---|---|---|---|
| | 18/10/2017 | BOTTLE CAP | SCALE 2:1 | DRAWING 3 |

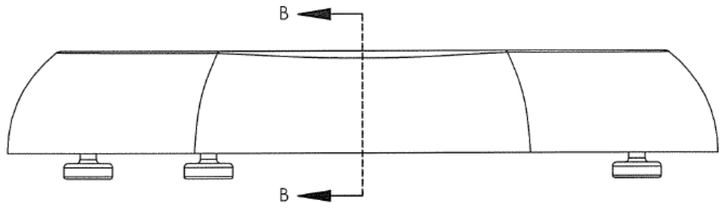



PLAN

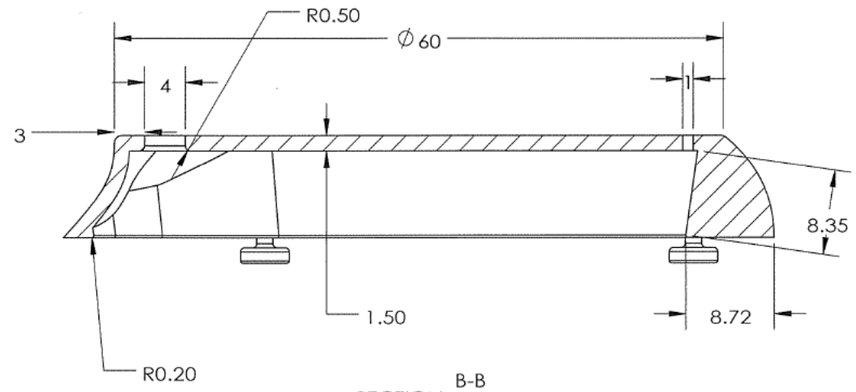



BOTTOM VIEW

| | | | | |
|---|---|---|---|---|
| | 18/10/2017 | BOTTLE CAP | SCALE 2:1 | DRAWING 4 |

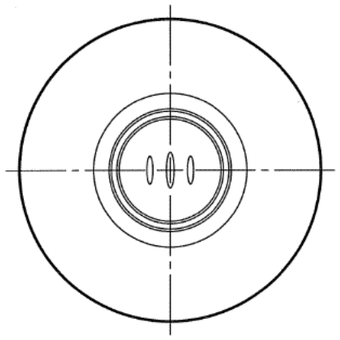



MAIN ELEVATION

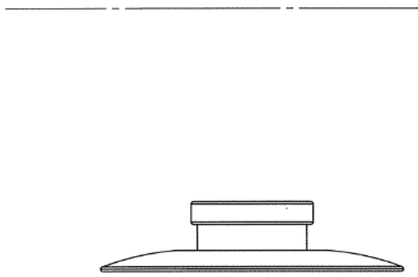



SECTION $\frac{\text{B-B}}{2:1}$

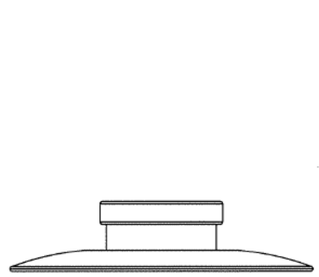
| | | | | |
|---|---|---|---|---|
| | 18/10/2017 | BOTTLE CAP | SCALE 2:1 | DRAWING 5 |



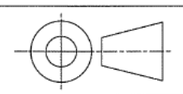
PLAN

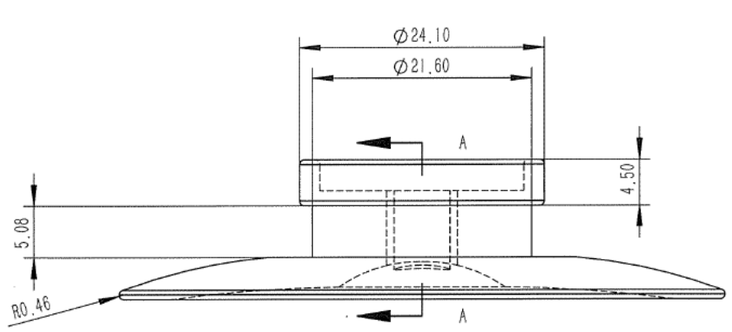


MAIN ELEVATION

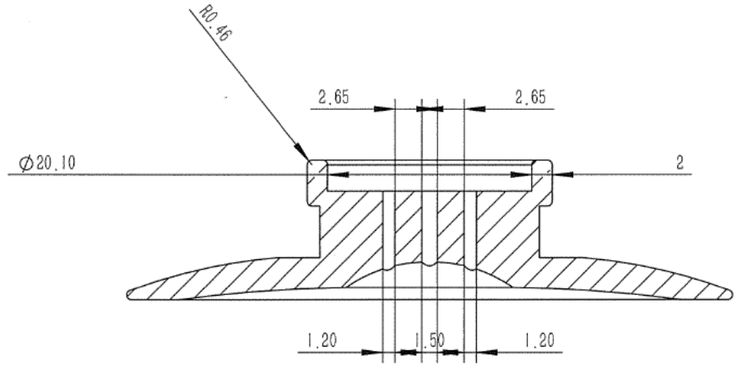


RIGHT ELEVATION

| | | | | | |
|---|---|---|---|---|---|
| | 18/10/2017 | MAIN SUCTION CUP |  | SCALE 1:1 | DRAWING 1 |

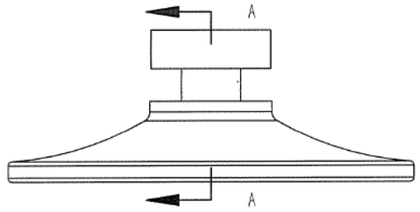



WIREFRAME RIGHT ELEVATION

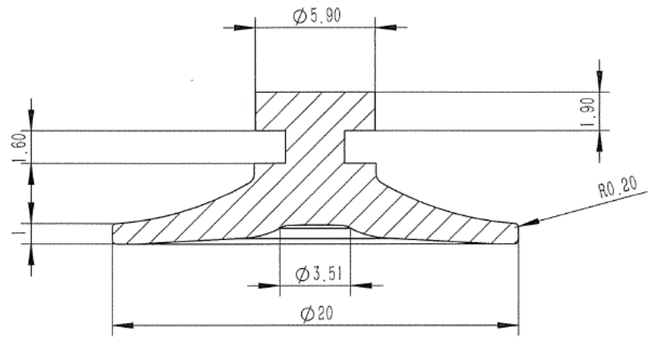



SECTION A-A 2 : 1

| | | | | |
|---|---|---|---|---|
| | 18/10/2017 | MAIN SUCTION CUP | SCALE 2:1 | DRAWING 2 |

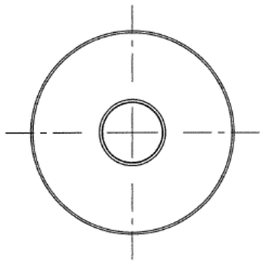



MAIN ELEVATION




SECTION $\frac{\text{A-A}}{4:1}$

| | | | | |
|---|---|---|---|---|
| | 18/10/2017 | SECONDARY SUCTION CUP | SCALE 4:1 | DRAWING 2 |



PLAN

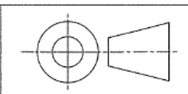





MAIN ELEVATION



RIGHT ELEVATION

| | | | | | |
|---|---|---|---|---|---|
| | 18/10/2017 | SECONDARY SUCTION CUP |  | SCALE 2:1 | DRAWING 1 |

AS 91631 (3.34): Produce working drawings to communicate production details for a complex design (6 credits)

| Achievement | Achievement with Merit | Achievement with Excellence |
|---|---|---|
| Produce working drawings to communicate production details for a complex design. | Produce working drawings to clearly communicate production details for a complex design. | Produce working drawings to effectively communicate production details for a complex design. |
| • Produce a **set of related instrumental** working drawings showing **exterior and interior detail** of components **related** to the construction and assembly of a **complex** design.<br><br>• Demonstrate an ability to use **drawing conventions and presentation techniques** to communicate details of a complex design. | • Produce a **precise** set of related instrumental working drawings showing exterior and interior detail of components that **explains** the construction and assembly of a complex design.<br><br>• Demonstrate an ability to **accurately apply** drawing conventions and presentation techniques to **clearly** communicate details of a complex design. | • Produce a precise and **cohesive** set of related instrumental working drawings through the **appropriate selection of views and modes** that **enable** the construction and/or assembly of a complex design.<br><br>• Demonstrate an ability to accurately apply drawing conventions and presentation techniques to clearly communicate **production** details of a complex design. |

Commentary: This submission is assessed at High Merit.

It shows a set of related complex drawings of a drink bottle and has been produced using CAD.

This includes (meeting the grade given):

- illustrative drawings to help visualise the design
- CAD drawings showing precision and accuracy
- orthographic drawings of the assembled design and its' components
- exploded views showing assembly
- dimensioning where necessary
- a good selection of sectional views and details
- some good use of drawing conventions such as recognised scales, symbols and labelling however, the dimensioning is not to the correct NZ standard i.e. incorrectly braking dimension lines and orientating values horizontally and the cross hatching was all running in the same direction regardless of being different materials and components.