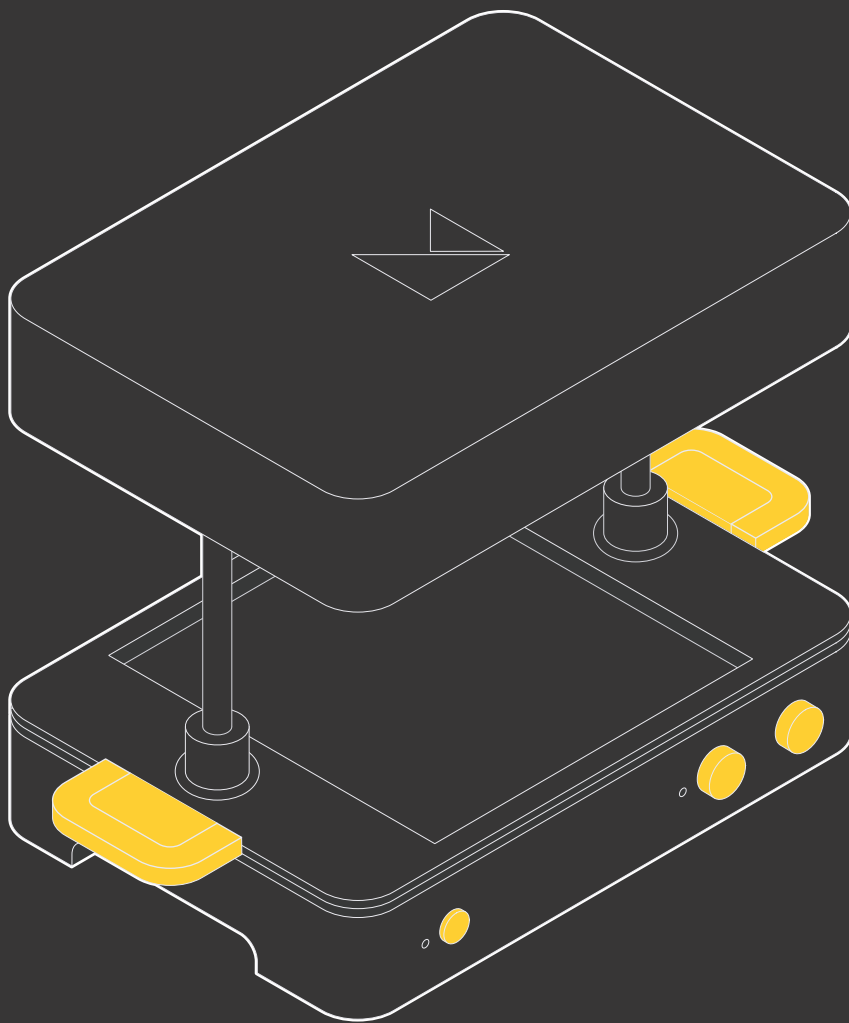


# FormBox



Starter Book



**Welcome to a world of making.**

# Contents

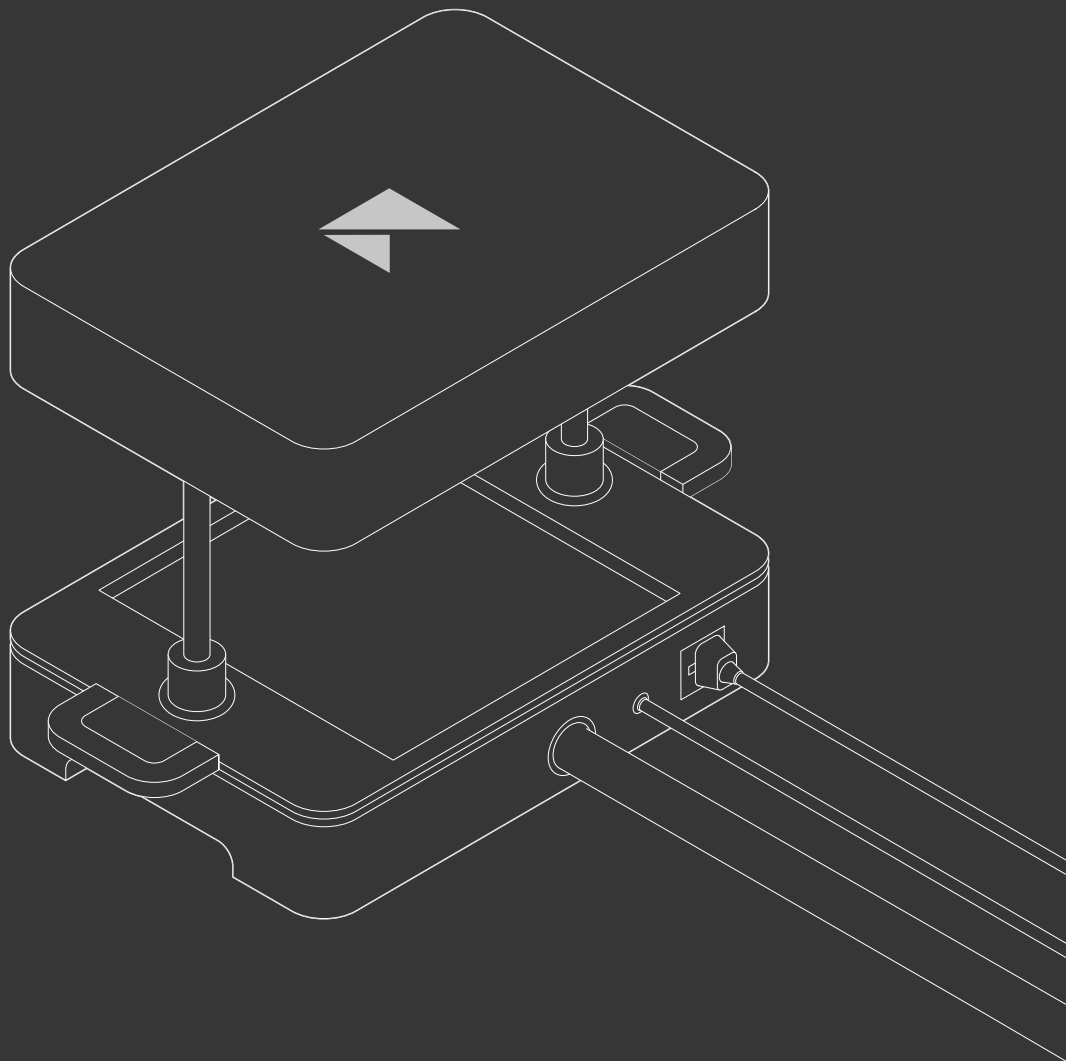


Setup	4
Make	12
Design	32
Tips	38

PART 1

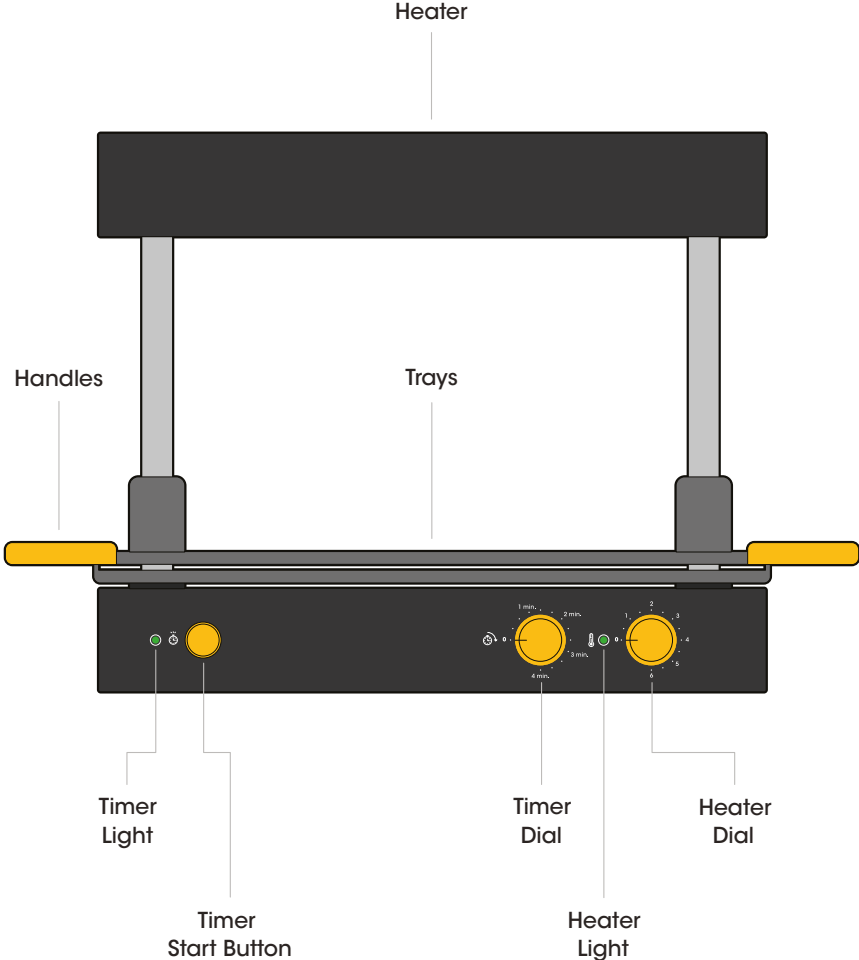
# Setup

First things first, let's get you plugged in  
and ready to start making.



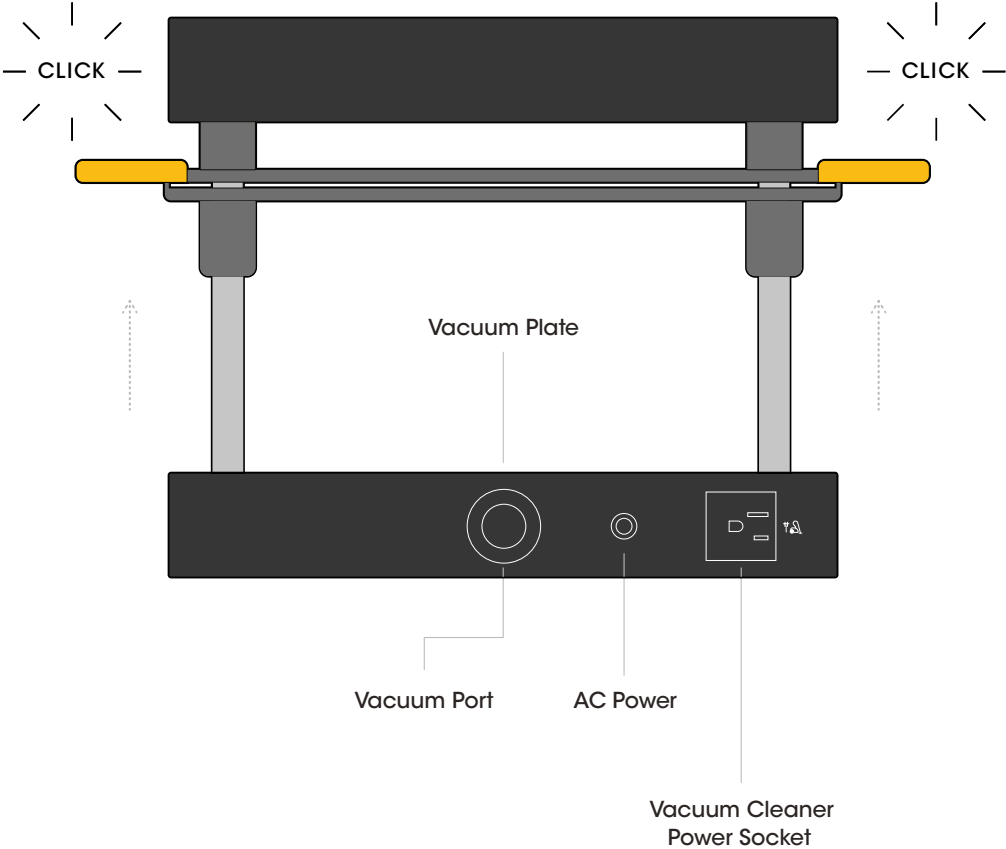
---

# Front



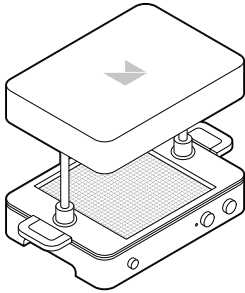
---

# Back

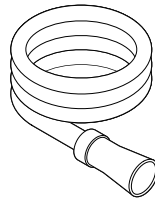


---

# Things You'll Need

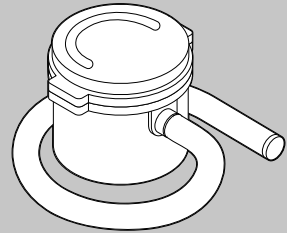


Mayku FormBox

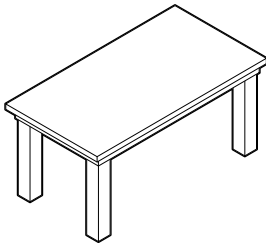


Suction Tube

( Not included )



Vacuum Cleaner  
( 2000W max )



Clear Working Area

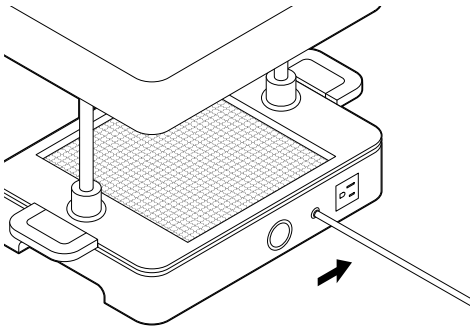
---

# 1

## Plug everything in

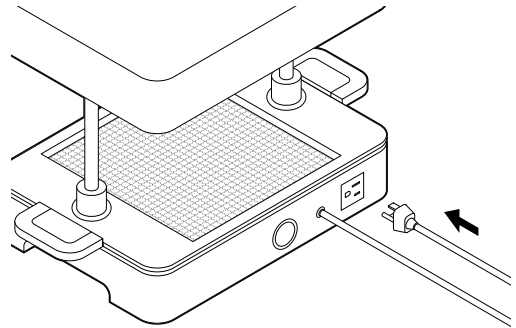
### A

Plug your FormBox into the mains using the power cable already attached to the back of the machine.



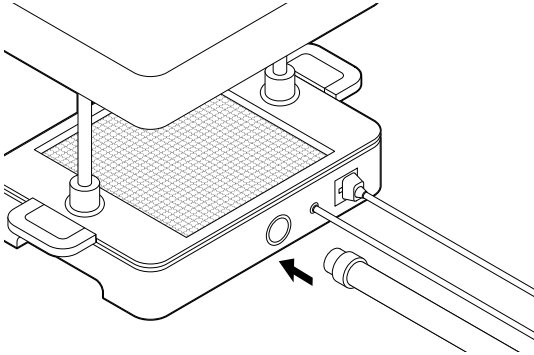
### B

Plug your **vacuum cleaner's** power cable into the back of the FormBox and switch your vacuum cleaner on.



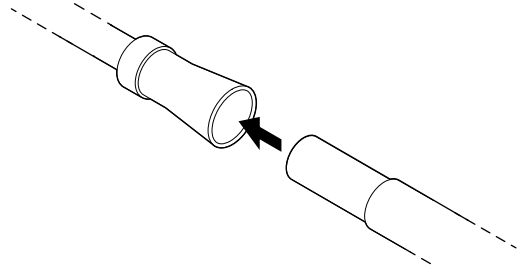
C

Insert the smaller end of the FormBox vacuum tube into the port on the back of the FormBox. Make sure it's pushed in all the way.



D

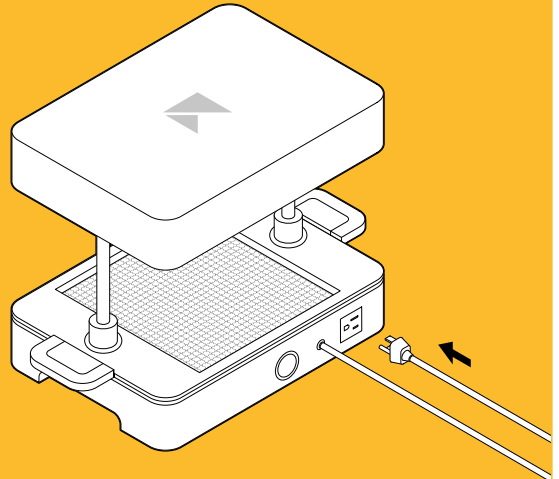
Connect your vacuum cleaner's hose into the other end of the vacuum tube. The connector has been designed to fit any vacuum cleaner hose.



## Note

Your vacuum cleaner draws power directly from the FormBox.

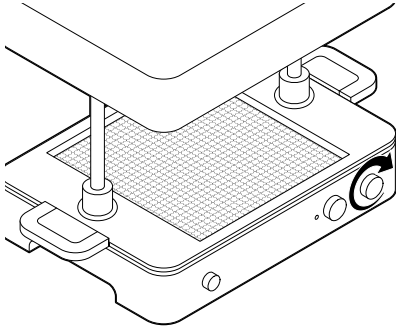
**Do not plug your vacuum cleaner into the wall.**





E

To turn your FormBox heater on, select a temperature setting on the heater dial. The fans will turn on to keep the machine cool.



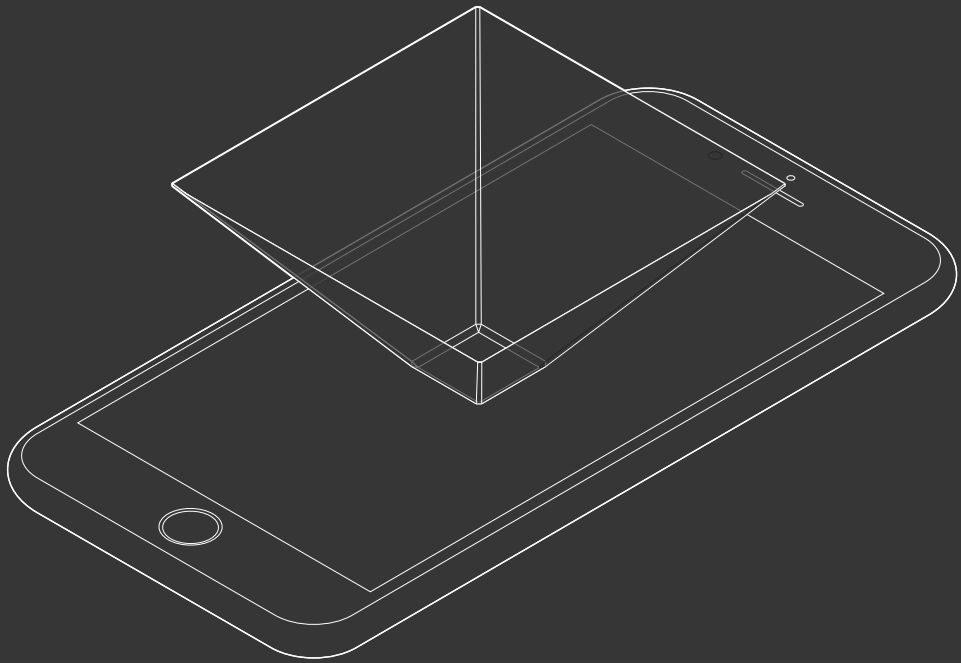
## Congratulations!

You're now ready to use your Mayku FormBox. Read on to learn how to make your first creation.

## PART 2

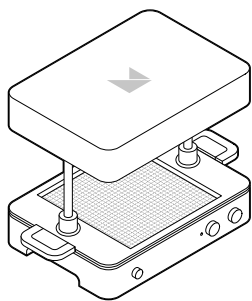
# Make

In your first recipe, we'll be learning how to use your FormBuilder to make a hologram viewer. We'll also be covering one of the fundamental rules of designing for the FormBuilder: Remove all undercuts.

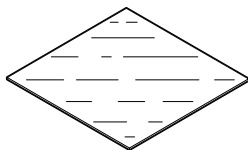


---

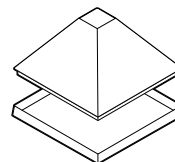
# Things You'll Need



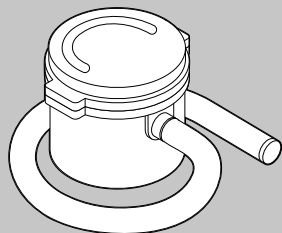
Mayku FormBox



Mayku Cast Sheet



Hologram Template  
Part 1 & 2

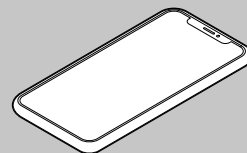


Vacuum Cleaner  
( 2000W max )

( Not included )



Scissors / Knife



Smartphone

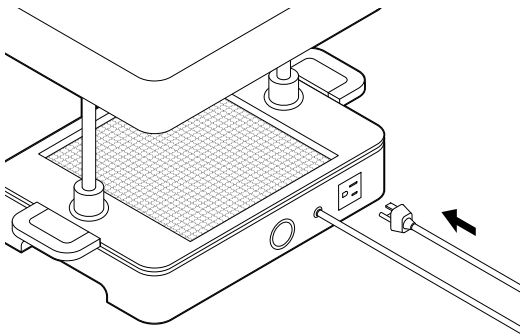
---

# 1

Make sure everything  
is plugged in and  
switched on

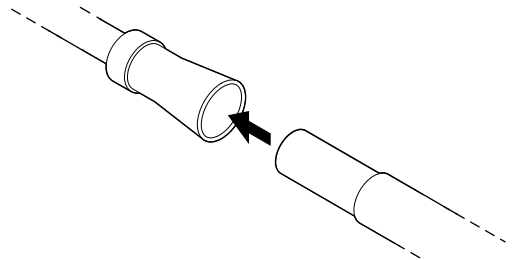
## A

Make sure your vacuum cleaner is plugged  
into the FormBox and switched on.



## B

Check that your vacuum cleaner hose is  
connected to the FormBox vacuum tube.



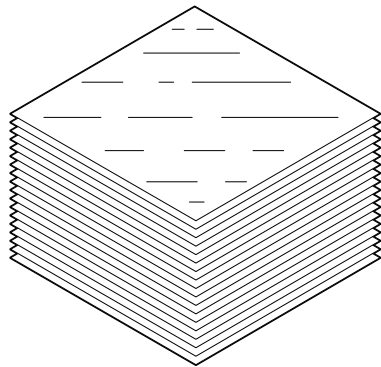
---

# 2

Choose your material  
and check settings

## A

Choose a **Mayku Cast Sheet**  
from the pack included. (they are  
the transparent ones)



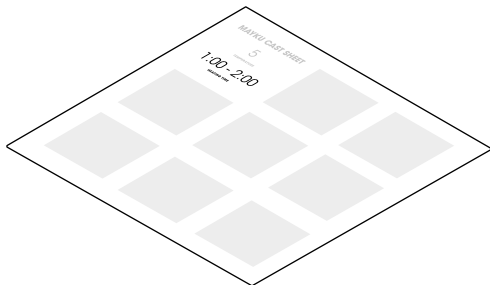
---

# 3

Set the time and temperature dials

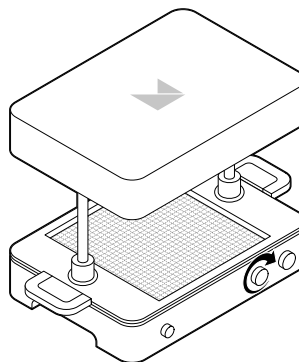
A

Mayku sheet materials have different temperature and time ranges. You will always find these on the instructions that come with the sheets.



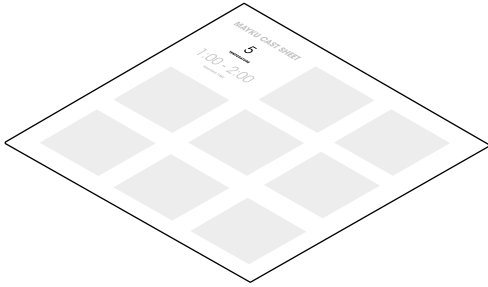
B

At first, set your time dial to the top of the range indicated. For example, if the range is 1-2 minutes, set the time dial to 2 minutes.



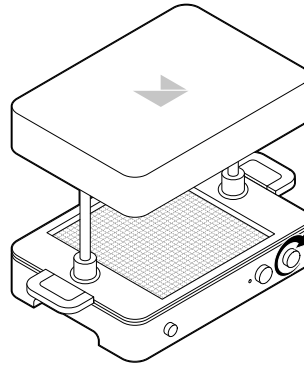
C

You'll also see a temperature setting on the instructions alongside your sheets.



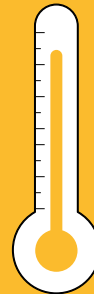
D

Set your machine to the correct temperature for the cast sheet.



## Tip

Mayku Sheets can heat quicker or slower depending on your environment and air temperature. As you test out your FormBox, you'll become familiar with the settings that work for you. Don't be afraid to try small adjustments.





---

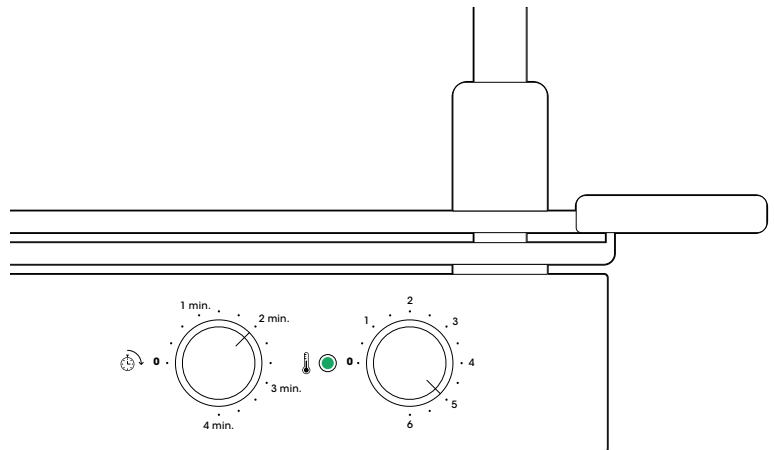
# 4

Wait for your heater to warm up

## A

The light will flash orange as it heats up and go green when it's at the correct temperature.

While you're waiting you can move onto the next section to prepare your template.



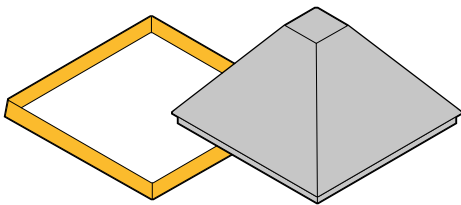
---

# 5

## Prepare your template

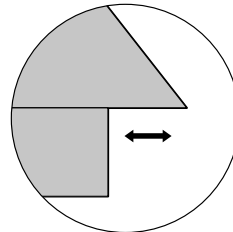
A

Get part 1 and part 2 of your hologram template from the starter kit where you found this book.



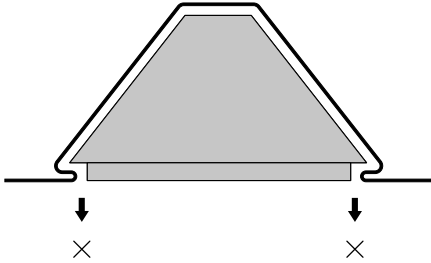
B

Notice how part one of your hologram template has a ledge around the outside edge. This is called an undercut.



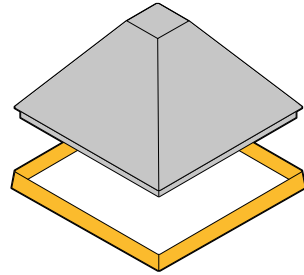
C

Undercuts prevent you from removing templates from your forms. Be careful not to include any undercuts when designing your own FormBox templates.



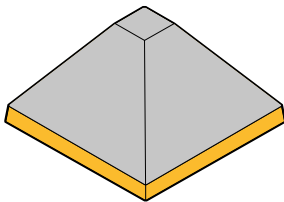
D

To remove the undercut from the template, place the gray pyramid on top of the yellow square. This creates a smooth edge on the outside with no undercuts.



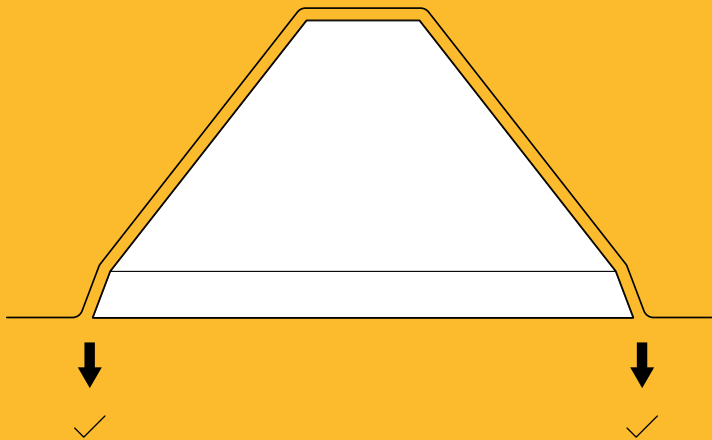
E

We're now ready to use this template in the FormBox to create a hologram viewer for your phone.



## Tip

Removing undercuts is one of the three rules of vacuum forming. You'll find a summary of them on page 34 of this guide.



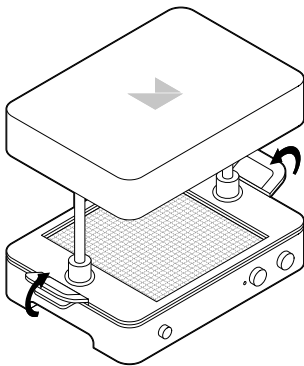
---

# 6

Insert your material

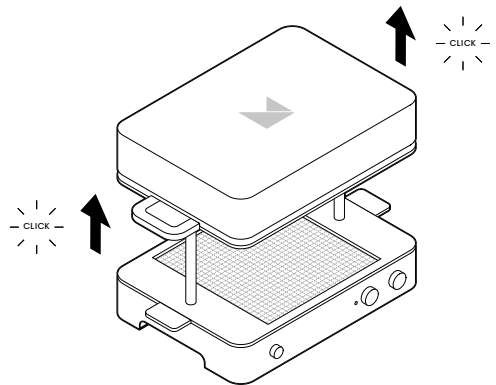
A

Unclamp the tray handles by lifting the outer ring of each handle.



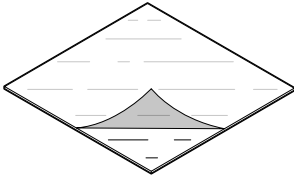
B

Lift the top tray up until it clicks into place near the heater.



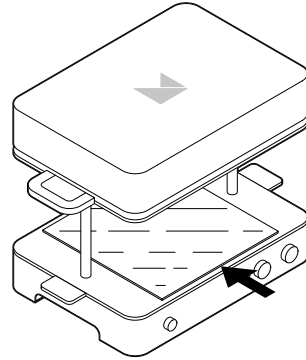
C

Peel the protective film from the Mayku Cast sheet. You can put this film into household recycling. Always check to make sure you have removed this film if the sheets you are using have them.



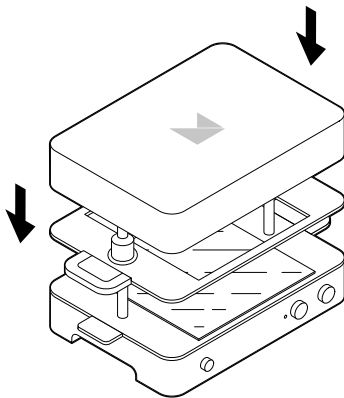
D

Place your sheet on the seals of the bottom tray. Line up the edges of the sheet to the edges of the seals.



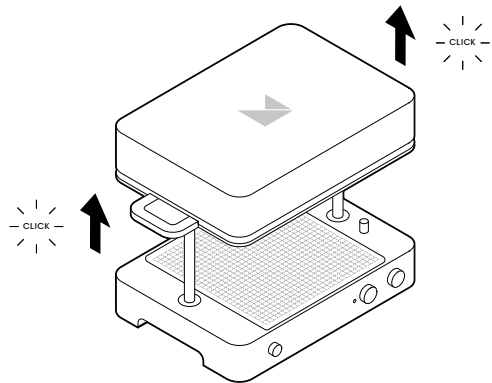
E

Bring the top tray down, clamping the handles onto the bottom tray. This will hold the sheet securely between the trays.



F

Now lift both trays up together until they click into place near the heater.



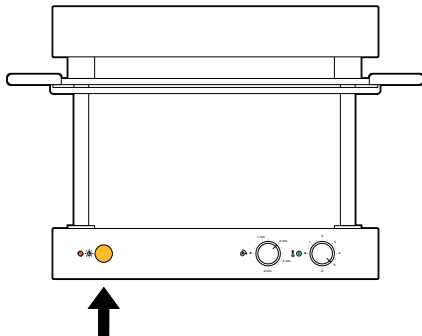
---

# 7

## Get ready to form

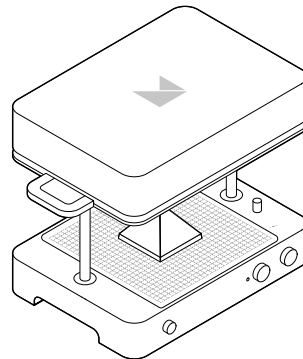
A

Press the timer start button after you lift the trays. The light will start to flash orange and you will hear a soft, slow ticking sound.



B

Place your template in the centre of the vacuum plate.



---

# 8

## Watch your material

When using Mayku Form and Cast sheets, you can tell when the plastic is ready to form as they become soft and elastic across the whole sheet.

Mayku Cast sheets will also ripple around the edges when they're ready.





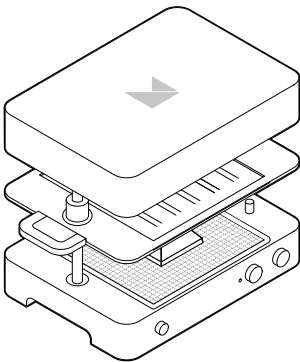
---

# 9

## Form your Shape

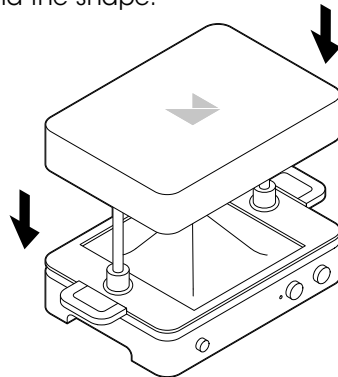
A

When you hear the ticking sound get faster, check to see if your sheet is ready to form. Look out for signs of elasticity on the plastic.



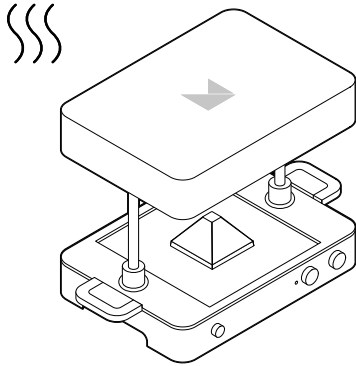
B

When the signs are showing, pull down on the handles to bring both trays over your template. Your vacuum cleaner will switch on automatically and suck the air out from around the shape.



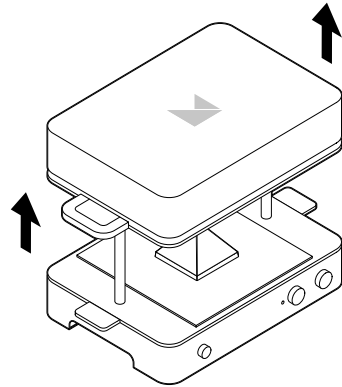
C

Leave the newly created form to cool for 5-10 seconds.



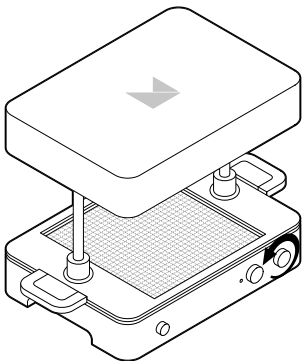
D

Unclamp the top tray and move it back to the top of the FormBox. Your first ever form is now ready!



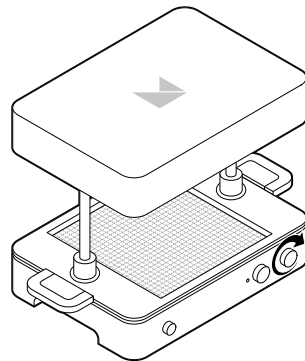
E

Switch off the heater by turning the heater dial to off. Never unplug your FormBox from the mains without letting the fans cool the heater down first for at least 10 minutes.



F

The FormBox will also turn off by itself if left inactive for 25 minutes. To switch it back on, turn the heater off and on again.



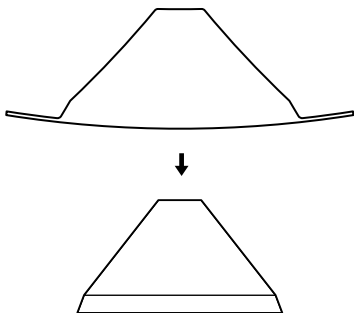
---

# 10

## Make your hologram viewer

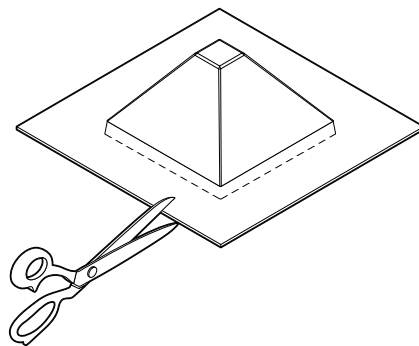
A

Flex the form in and out with your hands and push from above to release the template from the mold. Notice how the template didn't get stuck? Looks like eliminating undercuts earlier did the job.



B

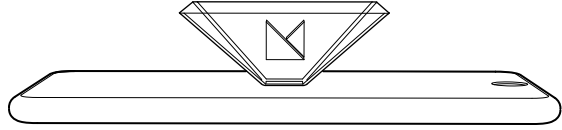
You can now cut out the hologram viewer. Use a large pair of scissors or a sharp craft knife to neatly cut around the base of the form and remove the excess sheet. Be careful and take it slow.



## C

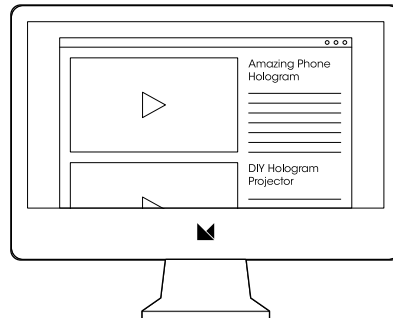
Congratulations! You've now made a hologram viewer. To get a video to view, visit:

[mayku.me/hologram](https://mayku.me/hologram)



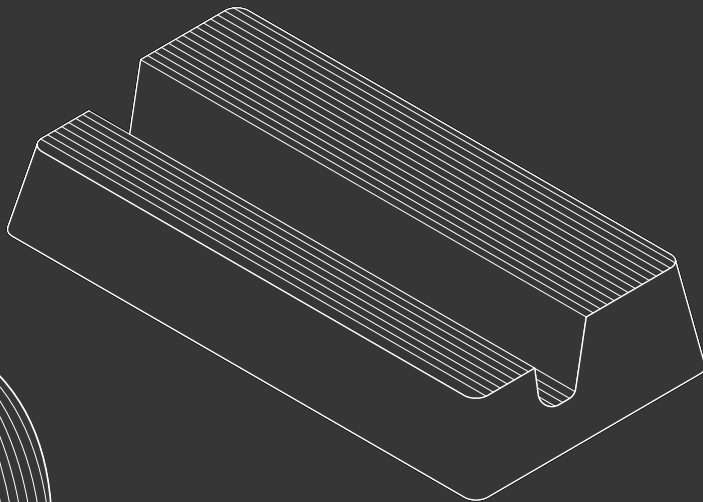
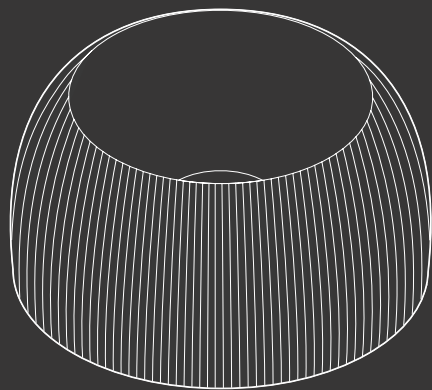
## D

For more hologram videos, search '3D phone hologram video' on YouTube.



# Next Project?

Visit [make.mayku.me](https://make.mayku.me)  
for video guides of how to  
make the egg cup and  
phone holder projects  
included with your FormBox.



## PART 3

# Design

Now that you're a master maker, it's time to start designing your own templates. There are a few simple rules to follow to get the most out of your Mayku FormBox.

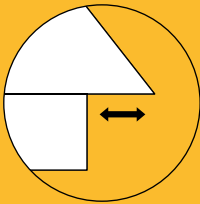


---

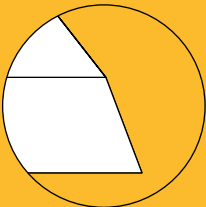
# Rule #1

Remove all undercuts

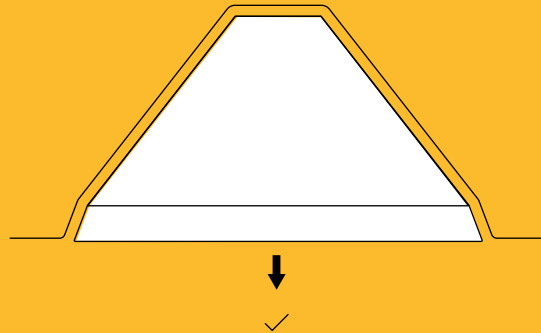
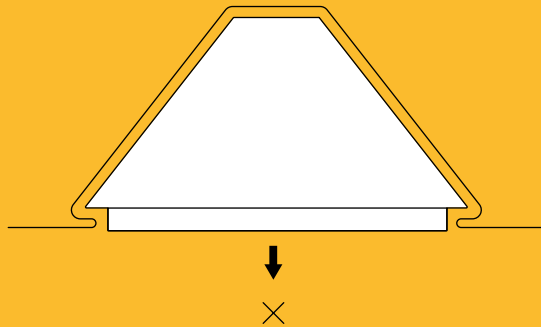
Undercuts make it difficult to remove templates once they have been formed. Make sure your design doesn't have any ledges or indents that could stop a template from being removed.



Undercut



No undercut



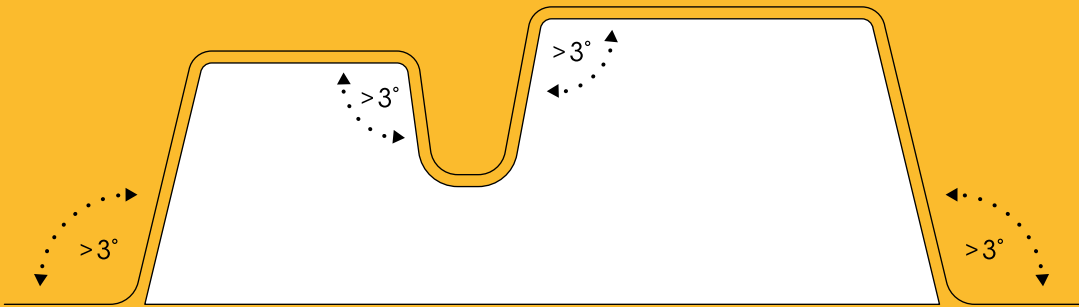


---

# Rule #2

## Add draft angles

Draft angles are slopes on the edges of your templates. They help you remove templates from the vacuum form very easily. The slopes on the edges of your forms should point outwards not inwards, so templates come out with little effort.

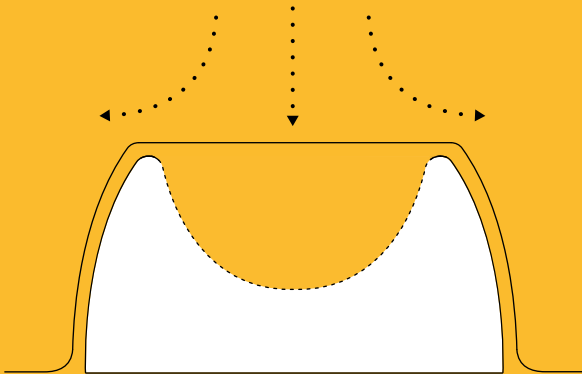


---

# Rule #3

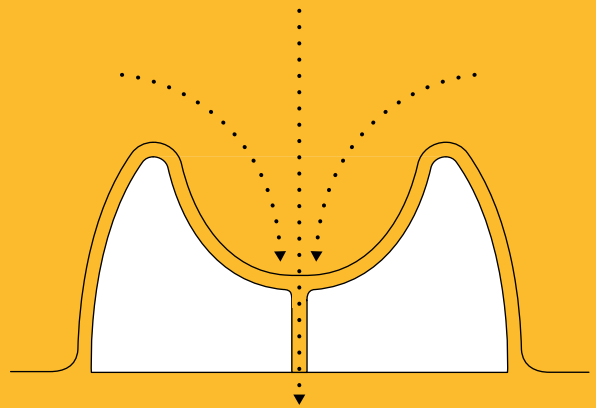
Add air holes

Adding air holes will allow air to flow freely through your design to the vacuum plate. This will help your Mayku Sheet get into the tiniest of spaces.



×

Air blocked



✓

Air free

# Stuck?

Visit [help.mayku.me](https://help.mayku.me) to get help from the Mayku community or one of our expert maker coaches.



## PART 4

# Tips

Here are some additional tips to help you make the best possible forms with the FormBuilder.



---

# Tips

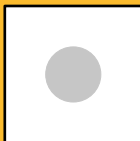
## Texture

Your FormBox is great at picking up texture. Try experimenting with different template materials for unique finishes.



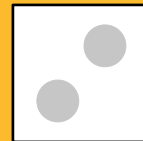
## Space

Ensure that your objects are as close to the center of the vacuum plate as possible.



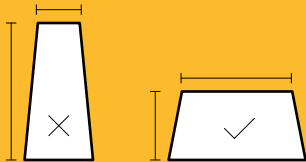
## Packing

If you are placing multiple objects on the plate, ensure that you leave at least 3cm between them. Leave more space for taller or larger objects.



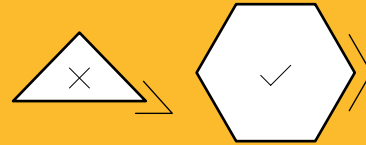
## Height / Width Ratio

Generally, templates should be wider than they are tall. This helps avoid thinning at the top of the form.



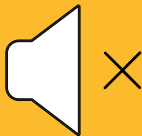
## Avoid Webbing

Avoid sharp angles less than 90 degrees. This can cause 'webbing', as the sheet material can bunch and fold onto itself. Also ensure that you lower the trays softly when forming.



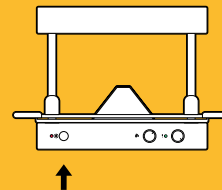
## Mute

If you would like to turn off the FormBox sounds, turn on the heater to any setting then press and hold the timer start button for 7 seconds. Repeat to turn them back on.



## Vacuum Shut Off

To turn the vacuum off in the middle of suction, press the timer start button to cut the power to your vacuum cleaner.





## Congratulations!

You are now ready to design and make amazing creations with the Mayku FormBox.



# More Making?

Visit [make.mayku.me](https://make.mayku.me) to find more recipes, templates, and talk to other makers about what they are creating.

