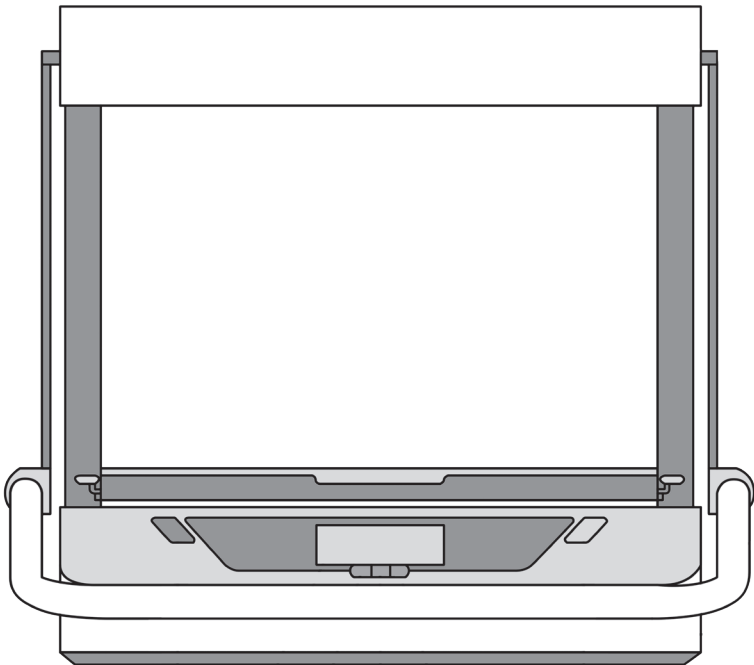




# USER MANUAL



Vaquform, Inc. declares that VAQUFORM complies with the essential requirements and other relevant provisions of Electromagnetic Compatibility 2014/30/EU, and Low Voltage Directive 2014/35/EU. A copy of the Declaration of Conformity is available on request.

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USA  
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## WARNING! Important Safety Instructions

Please read the Safety Instructions before using your unit.

### Before Use

- Do check your supply voltage and frequency before operating the machine. Make sure that the indicated voltage on the mechanical switch is compatible with your power source. The machine operates at 100 V - 240 V.
- Do seek expert advice if you are not sure about the safety of your electrical installation. You can reach our customer support through our website [www.vaquform.com](http://www.vaquform.com).
- Do read the rest of the manual for initial set-up and calibration of your unit.

### During Use

- Do use this machine for vacuum forming only. This is not intended for any other purpose.
- Operate the machine in a well-ventilated space. The plastic sheets may emit fumes during heating. If you are sensitive to the fumes, please wear a mask.
- The heater can go up to 320°C during operation. This is really hot and can burn your skin upon contact. Wear the safety gloves AT ALL TIMES.
- Do ensure that children below 18+ have adult supervision.
- The slots on the heater cover are ventilation holes. To ensure the reliable operation and to protect it from overheating, do not block or cover the holes.
- To avoid electrical shock, do not touch the inside of the machine. Only a qualified technician should open the machine.

## Storage

- To turn off this apparatus completely, disconnect it from the outlet. Do not touch the power cord with wet hands. Do not unplug the product by pulling on the power cord. Always grip the plug firmly and pull it straight out from the outlet. Do not let any cord lie or hang where it could be pulled on or tripped over accidentally.
- Do let the machine cool completely before moving it to a different location.
- Do take care when moving the machine. Carry it with both hands from the bottom unit or the sliders, not the handlebar. When setting it on a flat surface, be careful not to roll it over the power cord or to damage it in any way. Replace the power cord if damaged.
- Do cover the working surface of the machine (platen) when not in use. This will prevent dust from accumulating on the surface which may affect the vacuum performance.
- Do check the vacuum filter once in a while to ensure that it is still clean. Once you see debris trapped in the filter, replace it right away.

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## WHAT'S IN THE BOX?

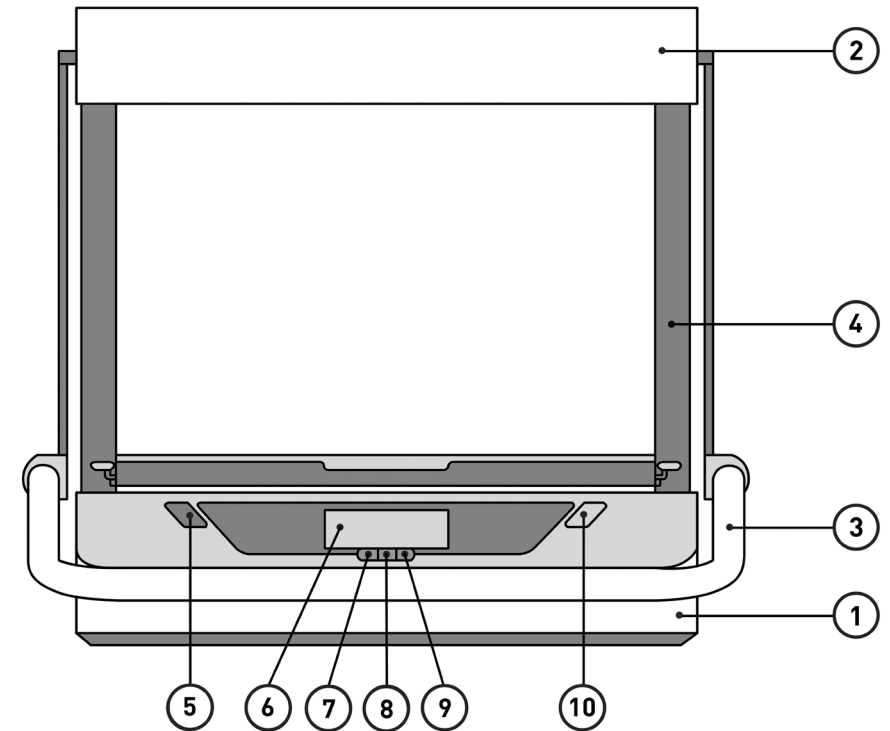
The following items are included with your Vaquform. If any item is missing, contact [feedback@vaquform.com](mailto:feedback@vaquform.com).

- Quick start guide
- User manual
- Tool kit
- Power cord
- Handlebar
- Platen mesh
- Plastic sheets

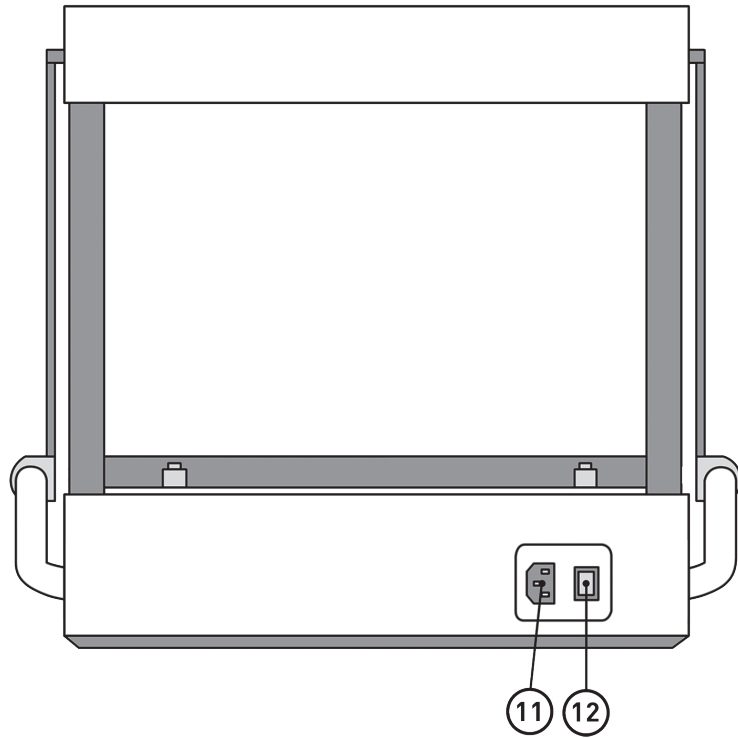
## MACHINE SPECIFICATIONS

ITEM	SPECIFICATION
Sheet Size	330 mm x 250 mm
Maximum Sheet Thickness	3.0 mm
Minimum Sheet Thickness	0.2 mm
Forming Area	280 mm x 200 mm
Maximum Depth Draw	200 mm
Overall Width	400 mm
Overall Height	405 mm
Overall Depth	335 mm
Weight	10 kg
Standard Input Voltage	100 V - 240 V
Standard Frequency	50, 60 Hz
Standard Wattage	1.32 kW
Noise Level	65 dB

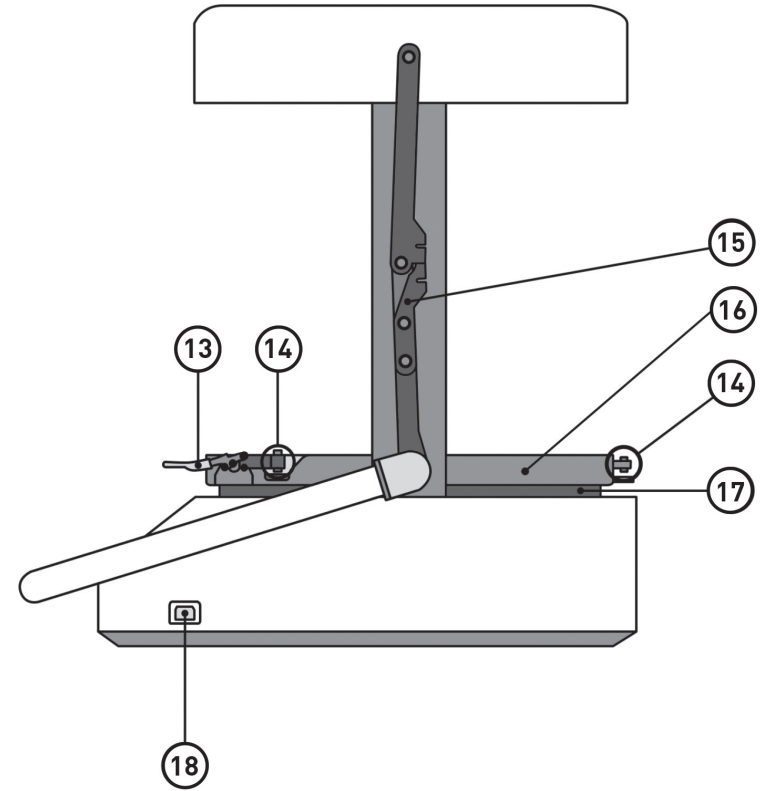
## PARTS OF THE MACHINE



- |                 |                  |
|-----------------|------------------|
| 1. Lower Unit   | 6. LCD Screen    |
| 2. Heater       | 7. Left Button   |
| 3. Handlebar    | 8. Select        |
| 4. Sliders      | 9. Right Button  |
| 5. Power Button | 10. Start Button |

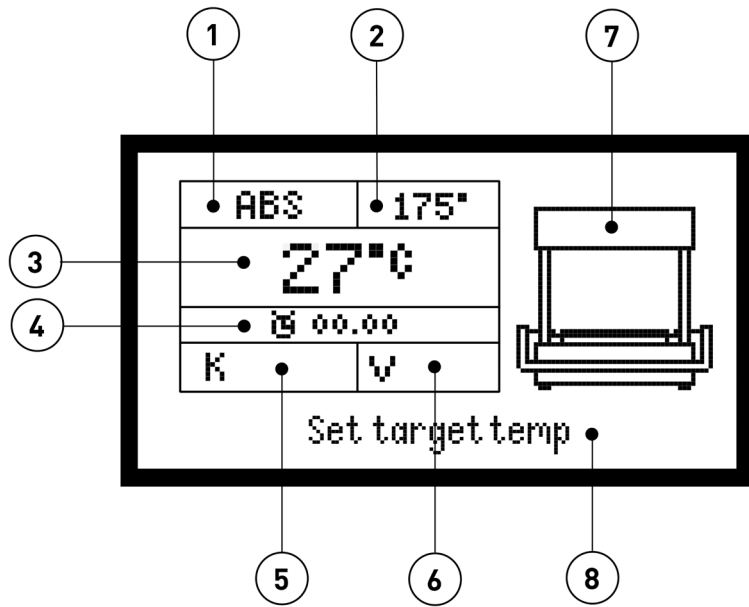


- 11. Power Port
- 12. Main Switch



- 13. Toggle Clamp
- 14. Adjustment Screws
- 15. Linkage
- 16. Sheet Clamp
- 17. Platen Mesh
- 18. USB Port

USER INTERFACE

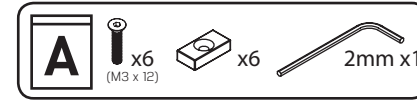


- 1. Plastic Type
- 2. Forming Temperature
- 3. Current Temperature
- 4. Timer
- 5. Thickness
- 6. Vacuum Tuning
- 7. Visual Prompt
- 8. Text Prompts

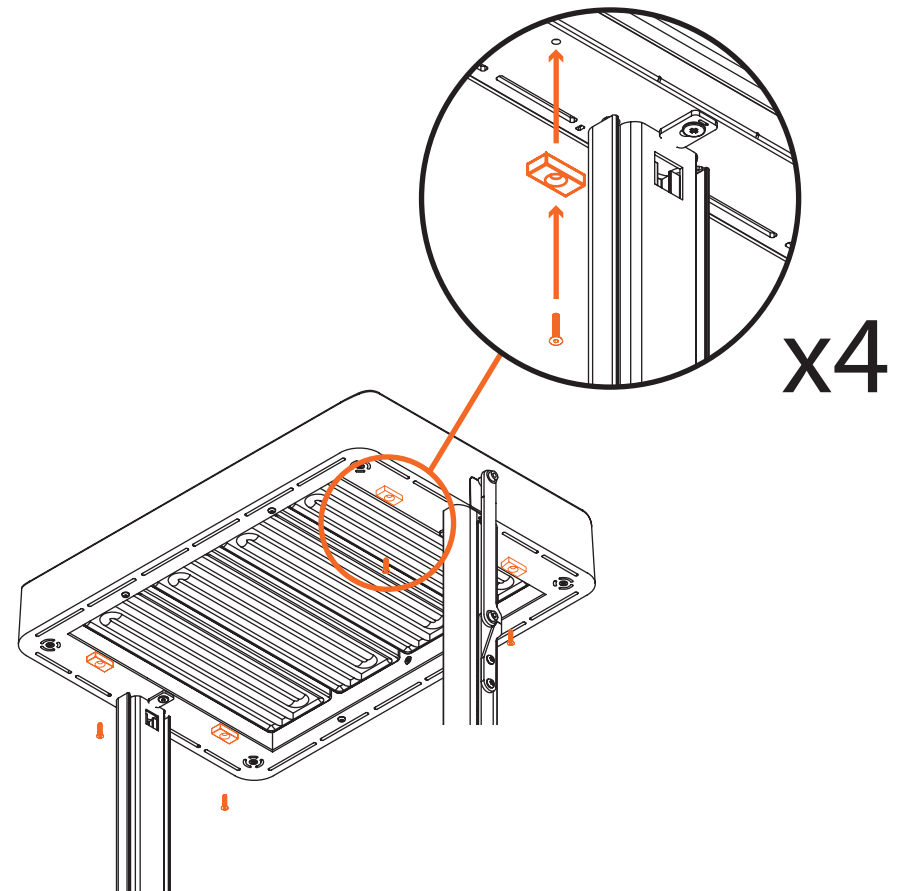
INITIAL SET-UP

Magnets

YOU WILL  
NEED:



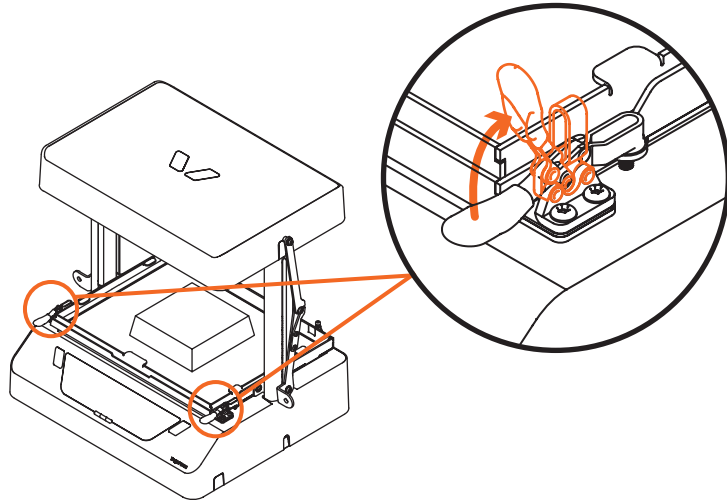
Attach four magnets to the heater following the diagram below.



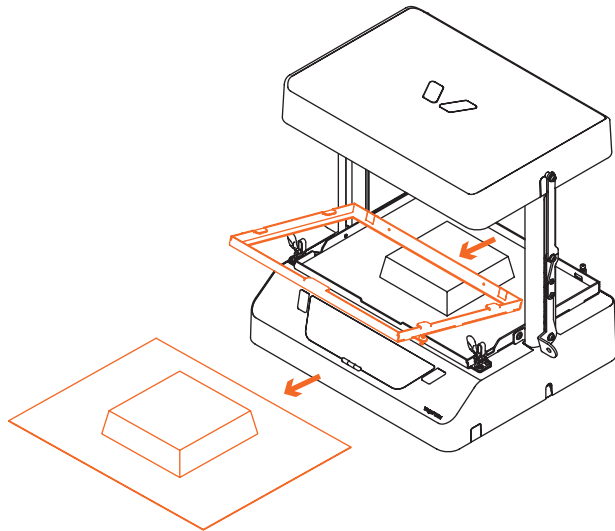


Test Form

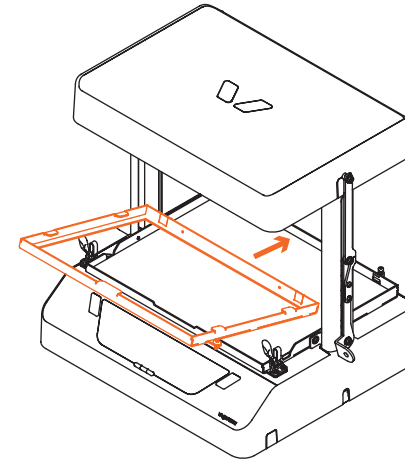
1. Unlock the toggle clamp



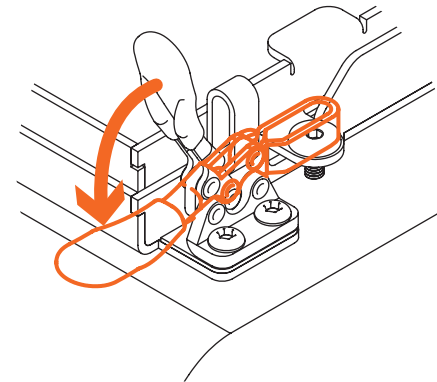
2. Lift the upper sheet clamp frame then remove the test form.



3. Return the upper sheet clamp

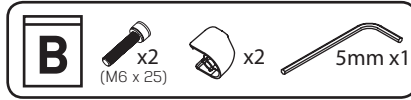


4. Lock the toggle clamp

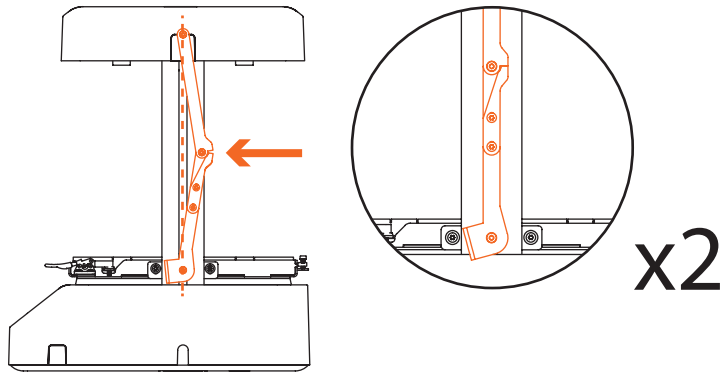


Handlebar

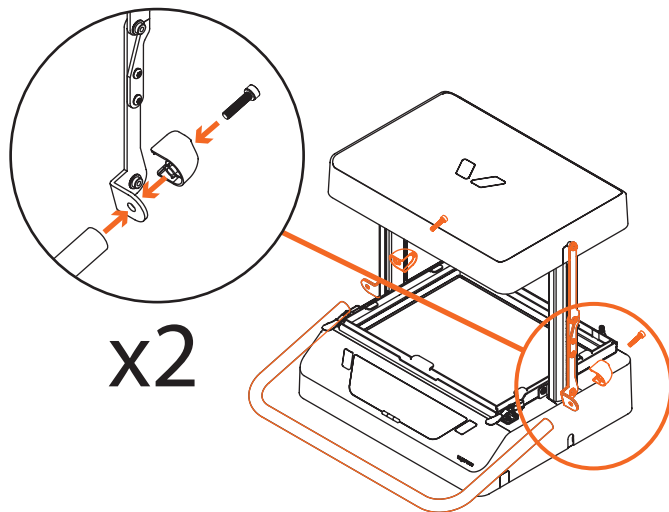
YOU WILL  
NEED:



1. Lock the linkage.

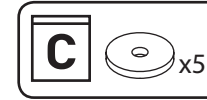


2. Screw the handlebar onto the linkage and the shoulder cap.

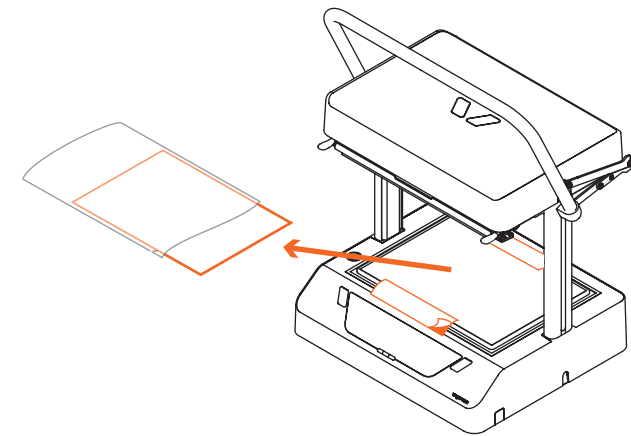


Mesh & Filter

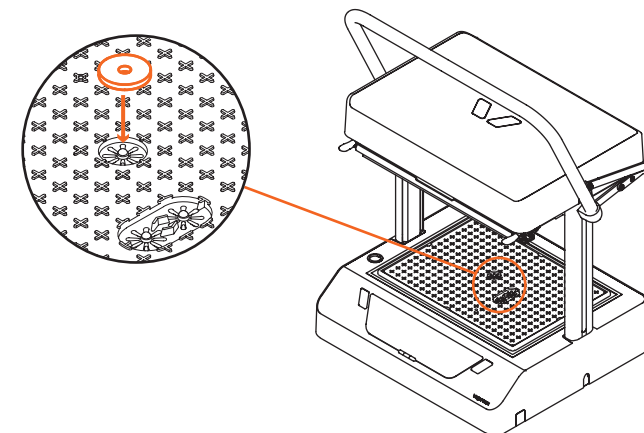
YOU WILL  
NEED:



1. Raise the handlebar then remove the mesh from the plastic.



2. Place a filter on the second vacuum port. Return the mesh on top of the platen.

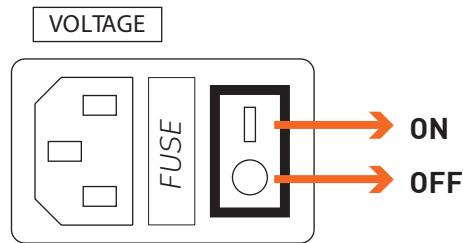


Power On

YOU WILL  
NEED:



1. At the back of the machine, connect the power cable to the port.
2. Plug the cable into a power outlet. The required voltage is seen on the label above the port.
3. Turn the main switch on.

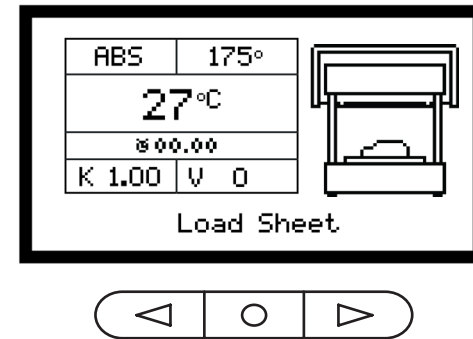


4. At the front panel, switch the Power Button ON.

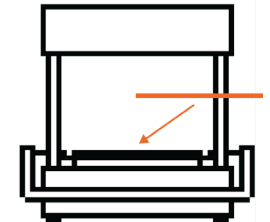
VACUUM FORMING

User Interface Navigation

To go through the menu, use the left and right navigation keys. To confirm information, press the select key. There will be visual and text prompts on the screen to guide you.



1. Load sheet. Please follow instructions in the next section.



2. Select Material. Use the navigation keys to browse through the pre-programmed plastic types. If the plastic you are using is not in the menu, select **USER1**, **USER2**, **USER3** then input the target temperature. Full user control can be done with **MANUAL** and **CLEAR** modes.

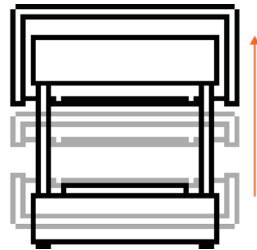
```
HIPS ABS PVC PETG PMMA PC
HDPE PP KYDEX EVA USER1
USER2 USER3 MANUAL CLEAR
```

3. Adjust Temp. The default temperature will be automatically displayed after you input the plastic type. You can increase and decrease this temperature by using the left and right navigation keys.

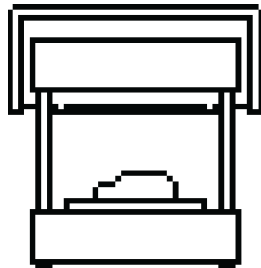
4. Select Thickness. Specify the plastic sheet thickness, **K** with the navigation keys. You can use 3.0mm to 0.2mm sheets. This will affect the cooling time of the forming cycle.

5. Vacuum Tuning. This controls the air flow and pressure of the vacuum system. For higher air suction, increase **V**; for higher pressure, decrease **V**. Equal air flow and pressure is **0**. Adjust value with the navigation keys.

6. Raise Bar. Raise the handlebar until it is secure on the heater magnets.

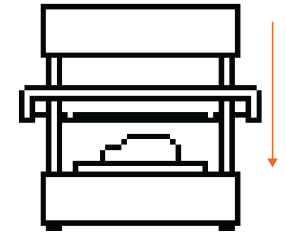


7. Position Tool. Place your mold on the platen mesh. Make sure the mold fits in the designated forming area (280mm x 200mm).

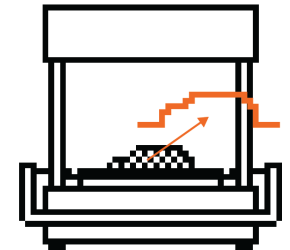


8. And Press START. Press the orange button to start **Heating**. You will hear one long beep.

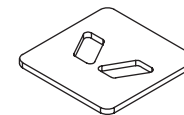
9. Lower Bar Now. Once the target temperature is reached, the vacuum will automatically switch on. Lower the handlebar immediately. Make sure the linkages lock and a seal is made between the lower unit and the sheet clamp gasket. This will prompt **Cooling Down** mode.



5. Part Ready. When the plastic is sufficiently cool, you will hear three short beeps. You can unclip the toggle clamps and remove your formed sheet. **CAUTION:** Surface is hot, use safety gloves and/or spanner to remove part.



*FOR YOUR SAFETY:* After use, switch the machine off and unplug from the outlet. If you need to transfer it to a different location, wait for it to cool completely. **DO NOT TOUCH THE CERAMIC HEATERS.** This can get really hot.

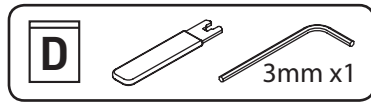


#### TIP!

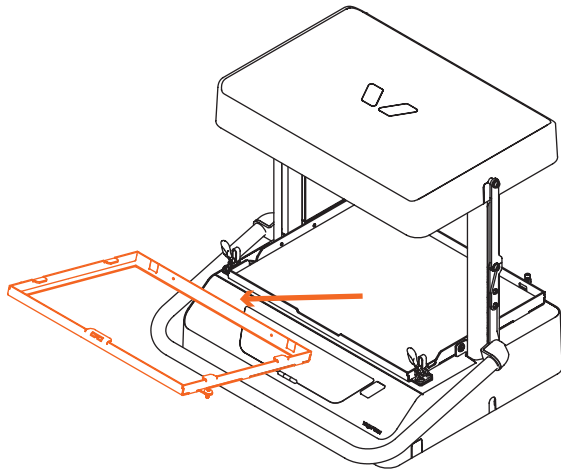
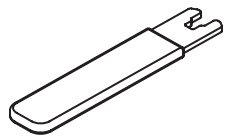
You can use the test mold in Toolkit E for your initial run. The test mold is intended for single use. Please peel off the protective film before use.

## Loading Plastic Sheets

YOU WILL  
NEED:

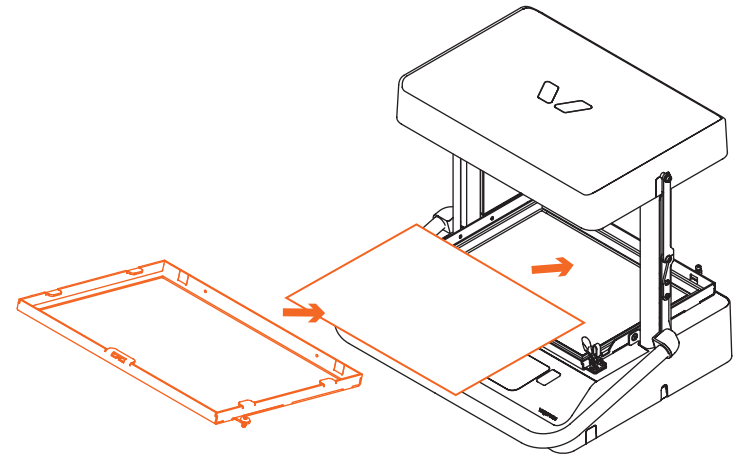


1. With the handlebar lowered, unlock the toggle clamp and remove the upper sheet clamp frame.

**TIP!**

You can use the spanner to remove (and return) the upper sheet clamp frame. This will help you when the frame gets hot. Simply insert the spanner into the notch in the middle of the upper frame. The safety gloves will also do.

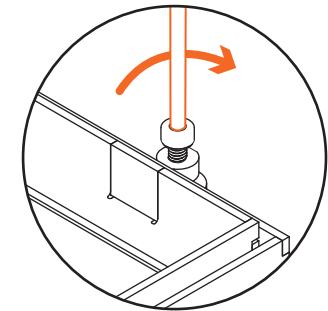
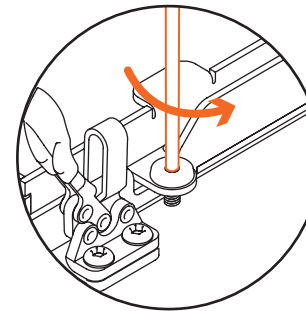
2. Place a plastic sheet on top of the lower sheet clamp frame. Make sure it is placed in the middle of the frame covering the rubber gasket. Return the upper frame then lock the toggle clamps.



3. Using the 3mm allen key, tighten the front and back adjustment screws until plastic sheets are secured. Do not overtighten.

FRONT -  
COUNTER-CLOCKWISE

BACK -  
CLOCKWISE



NOTE: When using plastic sheets of the same thickness, the adjustment screws only need to be tightened at the beginning of the cycle.

## Molds

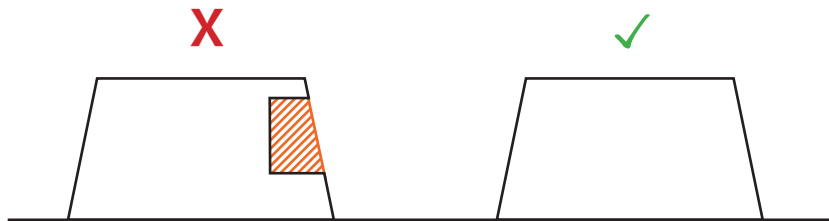
Making and using the right mold is very important in vacuum forming. Below are basic things you should take into consideration when selecting and making a mold.

## Material:

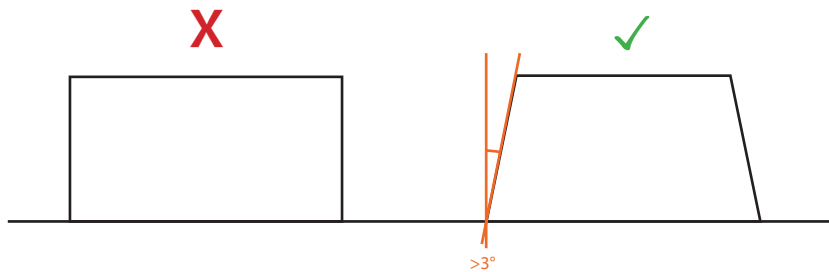
- Ability to hold its form
- Number of runs it can do before it warps/deforms
- Can withstand heat from the plastic sheets
- Easy to remove from formed sheets

## Design:

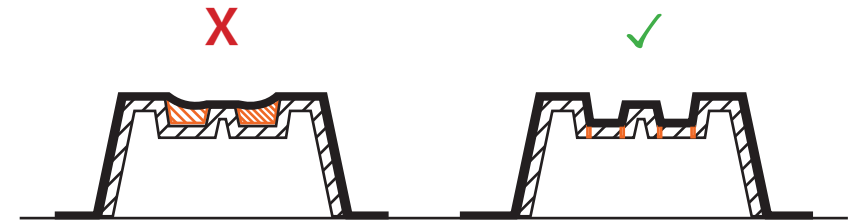
Undercuts are any cavities, gaps or protrusions in your mold. It will make it hard to release the mold from the formed sheet.



Draft angles are gentle slopes in your mold that make it easier to release. A minimum draft angle of  $3^\circ$  is recommended.



Airholes and vents allow for better airflow. This prevents air from being trapped between the mold and the formed sheet. To capture details, drill 1mm holes in your mold in tight corners.



## Plastic Profiles

Below are basic information on commonly used thermoformable plastic sheets. Most plastic sheets will diffuse odor during heating. Please wear a mask if you are sensitive to the smell.

Plastic Type	Forming Temperature (°C)	Common Uses	Basic Properties
HIPS	160	Packaging, food, displays	Low cost, easy to paint and glue
ABS*	170	Automotive parts and enclosures, toys	Tough, rigid, great impact strength, easily machined
PVC	170	Automotive parts, outdoor industrial use	Solvent resistant, medium to high strength
PETG*	150	Packaging, chocolate molds, medical application	Food safe, lightweight, transparent, good impact resistance
ACRYLIC	175	Lighting, sanitary applications	High strength but brittle
Polycarbonate	190	Light diffusers, helmets	Tough, slow burning/self extinguishing
Polyethylene	150	Packaging, product containers	Flexible, good impact strength
Polypropylene	175	Enclosures, luggage, toys	Flexible, good impact strength
EVA	70	Craft work, linings	Highly flexible, easy to cut
Kydex®	180	Holsters, sheaths, aircraft bulkheads	Allows tight tolerance control

\*Remove protective film before use.

## SAFETY FEATURES

### Slow Heating

- Causes and solutions:
  - Cold ambient temperature*  
When using the machine in a cold environment, initial heating may take time prompting this warning. Keep the machine away from direct wind when in use. Dismiss the prompt when this happens by selecting "yes"
  - Temperature sensor is blocked*  
If the sensor is blocked, the actual temperature of the plastic sheet cannot be read. Ensure that the sensor is not covered during operation. Select "no" when asked to dismiss the prompt, remove the blockage and repeat the cycle.  
If the machine receives no response after 8 seconds, the heating cycle will automatically stop.

### Anti-overheating Measures

- The machine will automatically reset when the machine stays in **heating** mode for more than 20 minutes.

### Software Updates

- Make sure you are using the latest version of the firmware. The firmware available on our website with detailed instructions for download and installation.

## MAINTENANCE

### General

- Regularly clean your device with a clean, dry cloth. Do not use abrasive material or liquids.

### Platen Cover

- If your mold leaves debris on the Platen Cover, remove the cover from the machine and carefully scrape off the debris. If you need to wash the cover, rinse it running water and dish soap then set to dry. Ensure that it is completely dry before reinstalling it.

### Filters

- Check the filters regularly. When the filters has visible debris, replace it to maintain optimal vacuum performance.

### Gasket

- Make sure that that the gasket is clean and always intact. Inspect for possible damages. Holes or cuts might cause air leaks, thus diminishing the vacuum performance.

## RESOURCES

Scan the QR codes below to access additional reosurces.

### Video Tutorials



### Support



### Online Store



### Contact Us







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