

# Making chocolate molds with master patisserie chef Phillip Khoury



The creation of robust, high quality, intricately detailed chocolate molds is a time consuming and highly skilled process that traditionally requires large investment in machinery and equipment usually the reserve of mass manufacturers.

*Above: Philip Khoury with his Chocolate Ferris Wheel created from molds made on the Multiplier*

With the advent of additive manufacturing and the desktop power of the Mayku Multiplier, this process is being made accessible to highly skilled artisans around the world at a fraction of the cost and in much less time than traditional methods.

Have you used the Multiplier for a project that you would like to share with the world? We'd love to hear from you!

Email [ben@mayku.me](mailto:ben@mayku.me) to let us know what you have been making.

Philip Khoury is the head of pastry at Harrods, the world famous department store in London. Philip is responsible for the internal product development and creation of pastries and chocolate sold in the Harrods food hall, cafe's and bespoke projects for high net worth clients. Luckily, Philip has a background in product design and engineering which helps him create innovative new products and processes in the chocolate world.

Philip was a pioneer of the FormBox and was one of the first users of the Mayku Multiplier pressure former. We caught up with him on how he has been using the Multiplier to create some of the most astounding creations we have seen with the machine.



*Above: Close ups of the Chocolate Ferris Wheel made using the Multiplier*

At the beginning of every year, Philip starts to think about a new type of chocolate or pastry that he affectionately calls 'The Showstopper'. It is usually released at Christmas time and the development process starts a year previously.

For Christmas 2022, he came up with the idea of making a fully functional ferris wheel, in the style of the iconic Harrods dome and made completely of...chocolate.

## The problem

Manufacturing high grade polycarbonate chocolate molds is a time consuming and expensive process. Mold making companies develop specific designs for the creation of mass manufactured injection molded designs for sale on the open market on a seasonal basis.

These molds can take months to develop, and once accessible to the wider market, chocolatiers around the world are forced into using the same molds as their contemporaries as these are the only ones available. Therefore, there is great creativity and variance in the flavors, fillings and finishes of chocolates, but the 3D form, surface texture and aesthetic look of the chocolate is often restricted to only a few different shapes.

“

**A custom mold might have taken 8-12 weeks to prepare, with setup fees costing in the £1000's and MOQs that are prohibitively high**

”

**Philip Khoury is the head of pastry at Harrods**

One way of rectifying this is to develop a custom mold in collaboration with one of the large mold manufacturers, however this is expensive, time consuming and more often than not, the creation of a new chocolate does not provide the return on investment needed to bring it to life.

First there is the design phase, with a lot of back and forth between chocolatier and mold company. There are design constraints to consider with only certain geometries being deemed suitable to a mass manufacturing process.

Once a design has been deemed manufacturable, a sample must be made to test the overall look, form and feel of the end product. It's also important to test that the design decisions that have been made enable the easy removal of the chocolates once it has been poured and set in the mold. These samples are usually vacuum formed - a fast process used for getting a rough understanding of what the product will look like, but not very good at representing the true detail that an injection molded part will produce.

After the sample is signed off, tooling can begin on the injection molding tool. This is a significant investment. Milling out a block of hardened steel to the exact shape that is needed is a long and expensive process with very little room for modification or error. Thus the end product needs to recuperate this investment in the amount units of the mold sold.

Then there is the small matter of MOQs (minimum order quantities) to contend with. In order to make the molds cheap enough for chefs and chocolatiers to buy, many need to be manufactured in a single run to take advantage of economies of scale. For a chocolatier, high tooling costs and large MOQ's often mean projects cannot move forward because they are not viable from a commercial standpoint.

Once the MOQ has been set, materials can be ordered in bulk, the injection molding machine set up and hundreds if not thousands of molds can be produced.



## The solution

Philip Khoury developed a simple, fast and unique workflow using additive manufacturing technology and the Mayku Multiplier to complete a project that would have previously been economically impossible to achieve.

The ferris wheel project would consist of many, unique, complex and finely detailed single molds. Once cast in chocolate, the pieces would be constructed, lego-like, into a free standing, moving, chocolate sculpture.

Philip estimated that a set of molds to achieve this would cost in the thousands if not tens of thousands of pounds to create which would in turn mean that hundreds if not thousands of the final product would need to be sold in order to make it economically viable. At this point, the project would have usually been canned but utilizing a resin 3D printer and the Mayku Multiplier Philip was able to produce the molds in house and create twelve of these masterpieces ready for sale at Christmas.



## Equipment list

- Mayku Multiplier
- Elegoo Saturn
- 3D print resin
- Food safe 1.5mm EVA sheets
- Chocolate for casting



## The process

The process was comparatively simple when compared to traditional manufacturing techniques. First, Philip sketched out the idea on paper. These designs were then passed to a CAD designer at the visual merchandising work group at Harrods who drew them up in CAD which Philip then 3D printed on an Elegoo Saturn 3D printer.

The finished 3D prints were then pressure formed on the Mayku Multiplier in 1.5mm food safe EVA. Philip was able to get up to twenty separate small parts onto a single sheet of EVA and the large wheel assembly is one large single mold, specifically designed to fit on the bed of the machine.

These were then cast in chocolate and assembled into the finished product. Twelve showstoppers in total were made and the molds were kept in storage for future orders, ready to be cast again and again as and when they were needed. One customer reached out eight months later and commissioned one more ferris wheel which Phillip was able to turn around rapidly.

This entire process cost a fraction of the cost and time compared to that of traditional chocolate mold making, saving huge amounts of time and money.

*Above: Selection of chocolate products made by Philip Khoury*

# Revolutionizing creativity: The game-changing Mayku Multiplier

The Mayku Multiplier allows creative professionals to bypass high tooling costs, large minimum order quantities, and lengthy manufacturing processes, making it an invaluable tool for innovative projects.

Interested in exploring the benefits of in-house mold making with the Mayku Multiplier? Contact an expert today to find out more.

[→ Talk to a Mayku Expert](#)

