

Designing the Multiplier with Teenage Engineering



Teenage Engineering is a consumer electronics company based in Stockholm, Sweden.

Back in the early stages of development of the Multiplier, when the first prototypes of the desktop pressure former were starting to make successful forms, Mayku got in contact with the team at Teenage Engineering to see if they would like to work on the industrial design and user interface of the machine. What transpired was a development process between London and Sweden in the midst of a global pandemic. We caught up with the team at Teenage Engineering to talk about the process...

*Above:
Render of the
Mayku Multiplier
by Teenage
Engineering*

What interested you about the project?

We think the most interesting part of the project was to work with the new pressure forming technology that Mayku has been developing. We love engineering-heavy projects such as this one, because we always learn something new and become better designers.

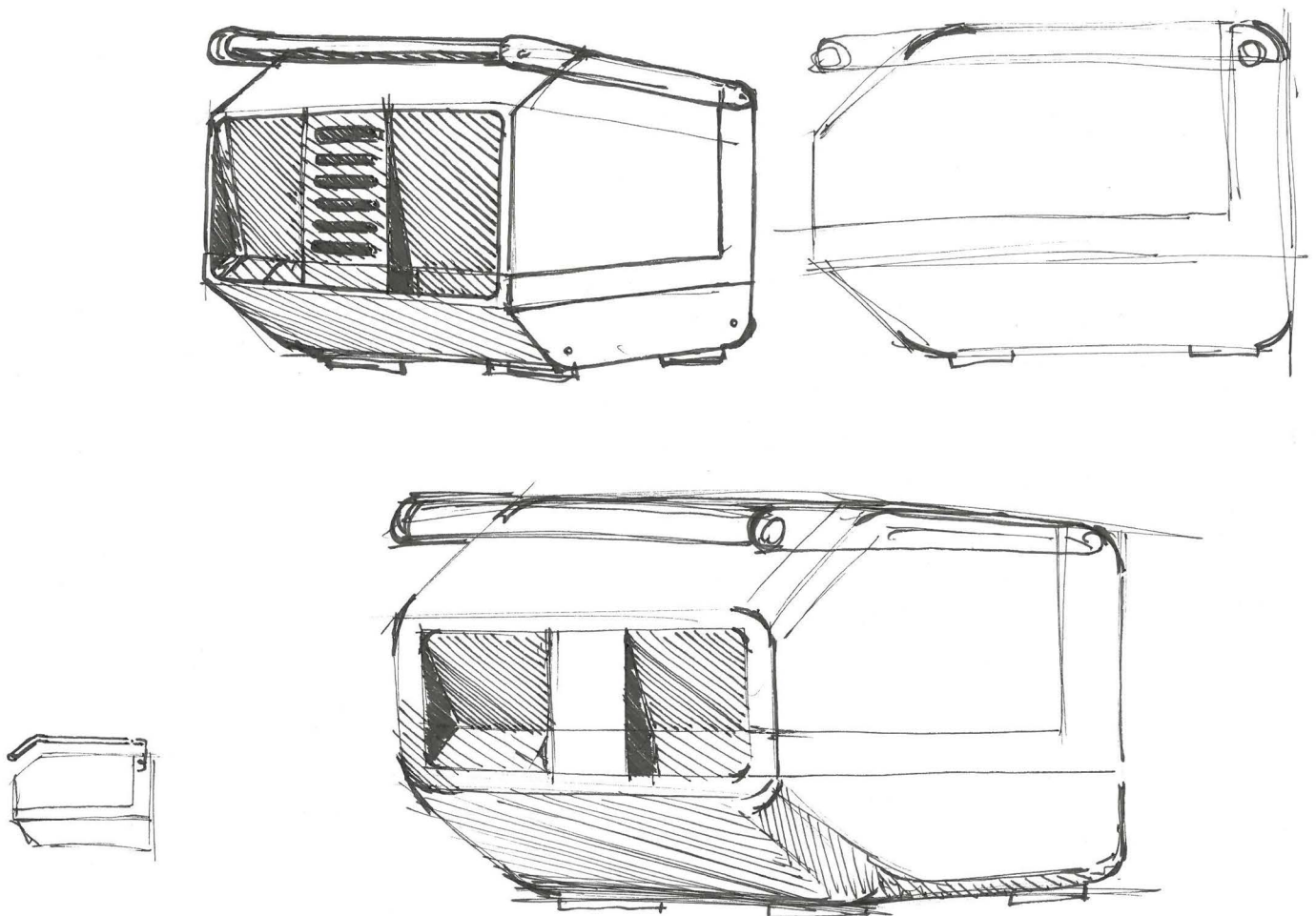
What interested you about pressure forming itself? Do you use pressure forming or vacuum forming in your workshop or prototyping? If yes, what for and why?

We did have a vacuum former years ago, a quite cumbersome machine where the process took lots of time and the results were unreliable. We saw that Mayku had already improved this field with the Formbox and had a really interesting concept for the new machine, so we didn't hesitate to jump aboard.

How did you approach the process for designing the machine?

There was, of course, a lot of juggling ideas back and forth between Mayku and us. One of our company ethos is that when you really understand the engineering part, then the design part will come very naturally. So we basically designed the multiplier from inside out, in a continuous discussion with the Mayku engineering team.

*Below:
Initial sketches
drawn by Teenage
Engineering*



How was it developing the machine during the pandemic?

As with most other businesses during the pandemic, we had to improve our presentation skills and create much more in-depth visual communication. What really made the process easier was that Mayku really understands the value of prototyping, and were constantly testing all of the ideas we came up with together.

What influences did you draw from?

Anything from sandwich grills to Italian typewriters, we pick bits and pieces from wherever someone has solved a mechanical problem elegantly. For example, the BelAZ 540 heavy duty dump truck prototype by Valentin Kobylinsky, anything Olivetti, Husqvarna Electronic 2000, some professional kitchen dishwashers. It was fun to explore these big chunky objects for a change, as we usually work with quite small form factors and portability.



*Above:
BelAZ 540 heavy
duty dump
truck prototype
by Valentin
Kobylinsky*

*Left:
Olivetti
typewriter*

How did you approach designing the graphics for the machine interface?

The graphics style we use comes from working with tight limitations when it comes to processing power and power consumption. Some of the displays we use in our own products draw less power if you keep the screen black as much as possible. We did not have these limitations here – but this art-style also helps focusing on what is important without cluttering the screen. The machine has a very distinct profile which makes it easy to explain what is going on, with just a simple outline and an icon. The use of a few primary high contrast colors help separating different actions and tell the users where in the process they are at a glance.

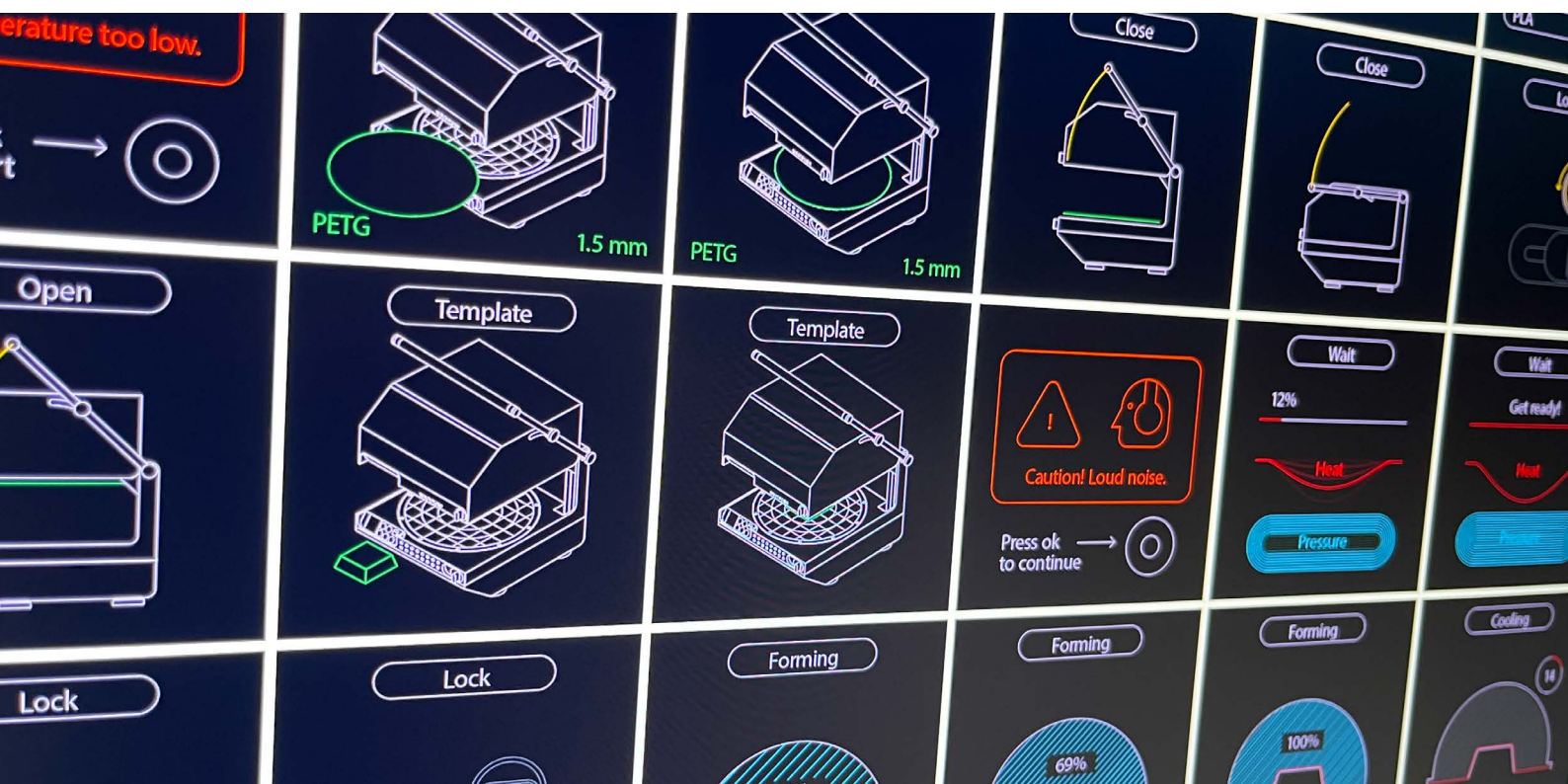
What graphic design influences do you have?

For this project, we got inspired by computer graphics found in old hardware with very tight limitations such as the Fairlight Synthesizer, IBM vintage computing, and the graphic design by Ron Cobb for Alien. As said before, we were quite excited to work with such a big form-factor, this led our thoughts to old stationary devices and their associated graphics.



Left:
Fairlight
Synthesizer

Below:
Some of the
on-screen
graphics



How did you approach the various optional color schemes for the machine?

We had a few color schemes that were quite out there along the way, but we decided to stay more in-line with the Mayku brand colors in the end. I think the black works really well to enhance the monolithic look of the multiplier.



*Left & below:
Color scheme
options for the
Mayku Multiplier*



Were you happy with the outcome of the machine?

Absolutely!

Teenage Engineering have just installed a Multiplier in their new workshop - we'll be following up on what they make with it soon!

Pressure forming, now on the workbench

The Mayku Multiplier is a desktop pressure former that can achieve sub-micron levels of precision, ensuring perfectly produced parts.

Whether you need to produce a single part or multiple batches, you can replicate intricate structures with consistent performance using industrial-grade materials.

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