**Egg incubator-hatcher**



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**Abstract**

Farms are an important factor when it comes to producing essential products for living. Those farms always seek to grow in numbers and develop their technologies to increase their production, whatever that is. To be able to do that, they need products as this Egg incubator-hatcher that can hatch eggs of any kind, all what the operator needs to do is adjust-configure the temperatures in the temperature regulator depending on the egg type. This egg hatcher is a very easy one to remake, and could help a lot of new farms that are just starting their business, or those who just want to see if they can reach a certain success in this field or even people who love technology and what to recreate the same incubator-hatcher.

**Keywords:** keyword 1, keyword 2, keyword 3

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# Introduction

This incubator can be used for hatching eggs of any kind, depending on the temperature adjustment. The power supply for is 220V-50Hz. For creating the humidity required, the position of the water container has been tested in different ways, the final positioning is just below the heater, and the fan above the heater pointing down, that way the heat is directed to the water container to create more humidity as around 60% is required. Incubators need some sort of temperature adjustment so the inner temperature and humidity won’t change rapidly, but in a controlled way. The incubator itself consists of:

* The temperature enclosure.
* The opening for clear view.
* The humidity generation.
* The electronic system for temperature adjustment and turning the egg position.

# Construction materials

When it comes to the enclosure of this project, it is very important to be tight and well positioned. The material used is thermal isolator, which isolates the temperature quite well, as if the temperature is rapidly changed in can be fatal for the life inside the incubator.

The materials as following:

* XPS foam.
* Glass for clear view.
* Screws for tightening up.

Below you will see the figures of the enclosure that will assure the isolation of the temperature inside, and there will be no rapid decrease of temperature that would affect the process of hatching.



Figure 1: Base of the construction



Figure 2: Left side

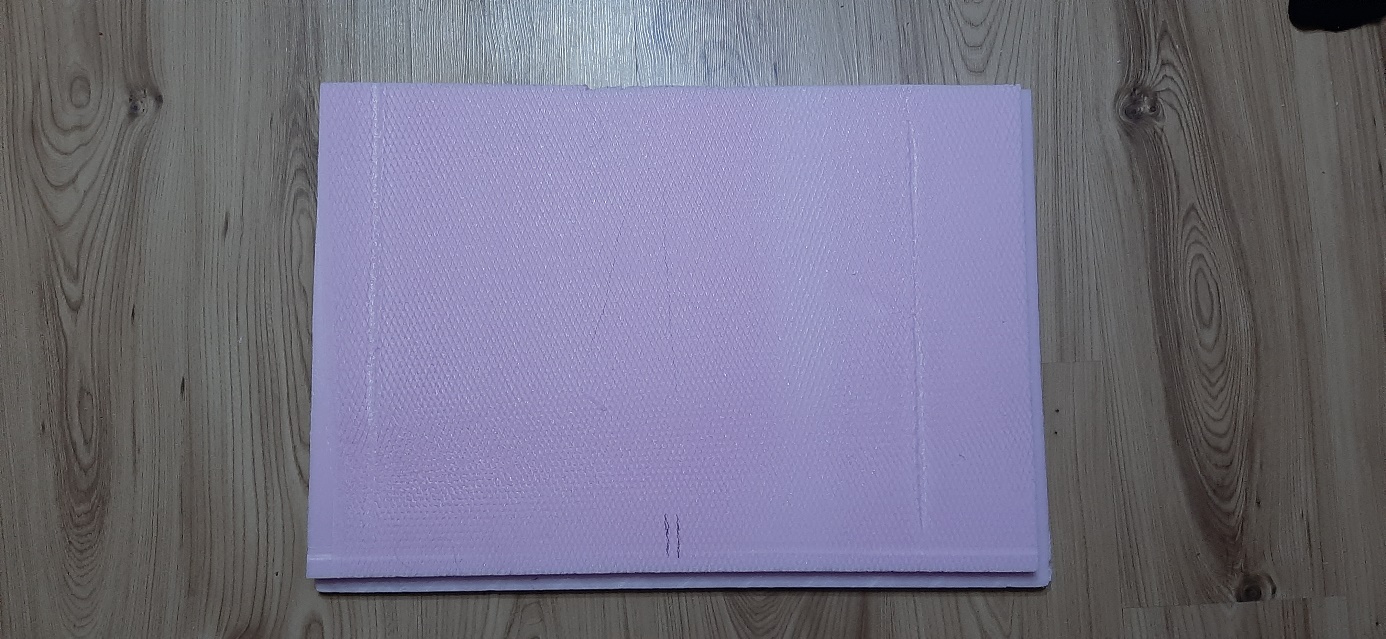


Figure 3: Front side

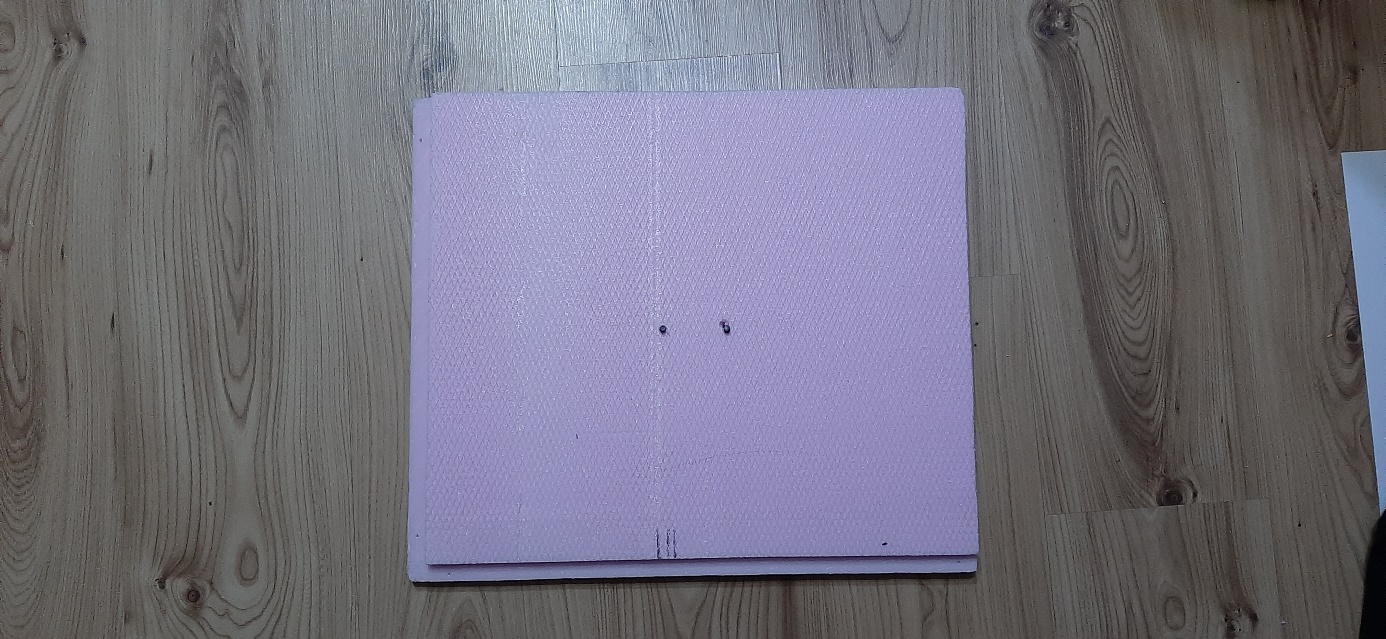


Figure 4: Right side

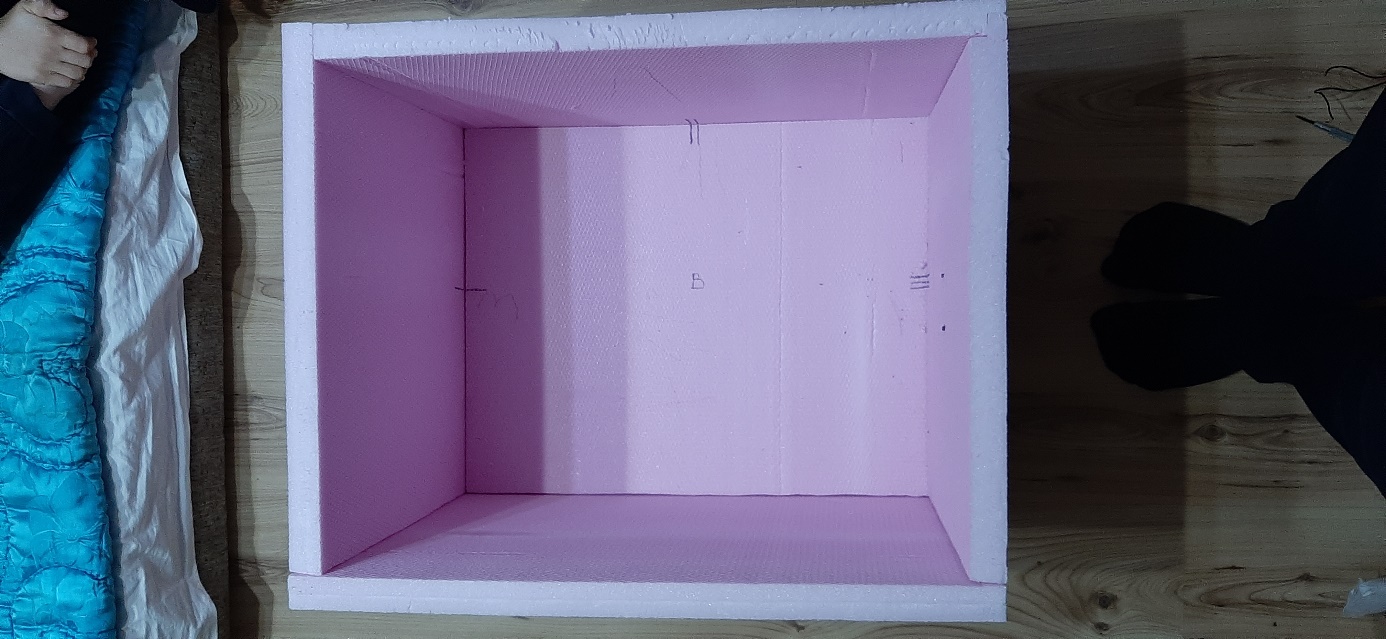


Figure 5: Cage assembled



Figure 6: Top of the enclosure

All the combonets assemble with each other and are connected with screwns, afterwards the connection between these XPS foams is strengther

# Electronic components

Knowing that we wanted 220V to be the main supply of the incubator, we had to use all the components that work with 220V. Below you will see the egg tilter fig.7, which is used to tilt the eggs position while in the process. The heater fig. , is used to create heat inside and achieve the desired temperature



Figure 7: Egg tilter



Figure 8: Heater



Figure 9: Temperature controller



Table 1. Qkado qe na bjen nder men

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| --- | --- | --- | --- | --- |
| description 1 | description 2 | description 3 | description 4 | description 5 |
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| 2 | 2 | 2 | 2 | 2 |

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Where,

E Energy, (J),

m Mass, (Kg),

c Speed of light in vacuum, (m/s).

Use SI units only.

# Assembly

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## PEEP

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## Barotrauma

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# Final test

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## Sensors Available

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# Required components

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## Overall cost

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