General Workflow

When we make a custom seat or mattress we follow a specific process and use guidelines in order create a quality product with high standards.

MEASUREMENT

Firstly, it is your task to obtain the correct form which defines the shape of the patients seat. In order to do so we have created a few guidelines you should consider to follow. This will help us to create the seat more easily and deliver a high standard product.

When taking measurements with a vacuum bag it is important that you find the **correct position** in which the patient is most comfortable. When you have found that position, you can either make a plaster cast or digitize the vacuum bag.

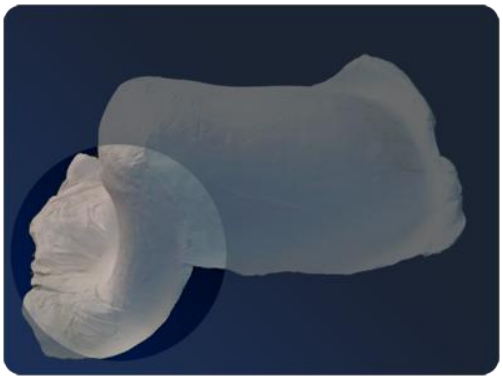
While the plaster is still drying in the vacuum bag it is useful to apply markings of the **vertical axis line**. We need this axis line to align your model properly. Please make sure to apply the axis line on the inside of the plaster cast.

Starting from the top of the picture we need the following points:

- Vertical axis point, marks the height of the back and shoulders.
- Vertical axis point at the pelvis level
- Vertical axis point between the legs at knee level.

When digitizing the vacuum bag, make sure the vertical axis points are visible on the scan. We use round pieces (diameter 1-2 cm, height about 1 cm) of cork that we apply to the vacuum bag with some double sided tape or another adhesive.

Another important requirement is that you mold the **popliteal** and make them long enough. Preferably 60-80mm long.



This allows us mill the popliteal, so you have less work afterwards.

Again, when digitizing the vacuum bag, make sure the popliteal is included in your scan.

Also, when taking the measurements we advise you to fill in our **order form**. This way you won't forget anything. You can find the order forms on our website under order forms (www.oms-services.org).
Without an order form we will not proceed with production!!

DIGITALIZATION

The model can be presented to us in two kind of ways:

- A Plaster cast,
- Digital model.

When you present us a **plaster cast** we will digitize that model. We will scan the outside of the model, so please make sure the surface is as smooth as possible and without holes. Also, make sure that any markings you make on the model such as a reference name or axis points are made on the inside of the plaster cast.

When you are digitizing the model yourself make sure the **digital file** meets the following requirements:

- The file must be an STL file (triangles)
- Between 60.000 and 100.000 triangles (file size +/- 4 MB)
- Smooth surface, without holes
- Visible vertical axis points
- Popliteal is digitized.

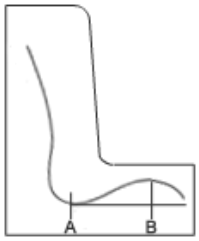
You can send your digital file along with the order form by email (info@oms-services.org). Without an order form we will not proceed with production!!

When the plaster cast or digital model meets our requirements, we start our production process that will deliver a product that meets your needs.

MODEL PROCESSING

We developed a CAD/CAM system that allows us to process the model digitally as we would make the seat manually. This system has some standard functions and operations we can apply to the model.

Firstly we will position the model in our foam block. We use the vertical axis line to do so. We make sure the **inclination** is according to your patient needs.



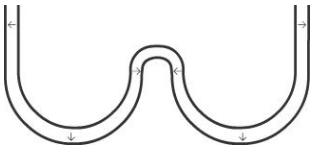
After production we can cut the foam to a specific inclination. Therefore we need the height difference between point A and B. Point A marks the lowest point in the seat, at the bottom. Point B marks the point at the lowest leg near the popliteal.

Then we smooth the model and remove the axis points.

Next, there are a few **optional functions** we can apply:

- 3D Offset

  This function affects the whole model. When an offset is applied, the model is made bigger (or smaller) in all directions. For example, when you choose a 10mm offset, the model will be 10mm wider on left side, and 10mm wider on the right side.

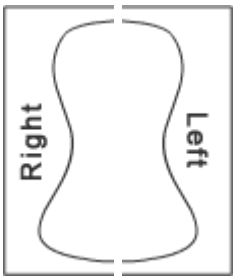


- Morphing (making the model wider and or longer)

  This function is different to 3D offset in the aspect that this only affects the width or length of the model. Whereas 3D offset affects the whole model.

- Symmetrizing

  With this function you can make a model symmetrical. You have to mark which side you want to make it symmetrical to, according to the patient.



If you want us to apply any of these functions you must tick them of on our order form. So please fill in our order form and remember, without an order form we will not proceed with production!!

FOAM PRODUCTION

When the model is processed by our CAD/CAM system we will start the milling process. We have built a CNC machine to our needs to mill out your custom seat. Before starting this process, again we need some information from you, namely the **foam type.** Don't forget to fill in the order form!

We offer 2 types of foam for custom seats and 1 type for mattresses.

FrameFoam ®

This foam is generally used to mill out seats. FrameFoam ® is a specially developed Polyurethane material that provides potential solutions for support functions in comfort applications. FrameFoam ® provides solid support. This makes FrameFoam ® a proven stable and valuable alternative for traditional furniture construction materials. It has a big cell structure which makes it firm (29-32kg/m^3) and which allows for a perfect contact with the patient's body.

T46320 (yellow foam)

This foam can also be used to mill out seats. This is a high density foam (46kg/m^3) but has a softer feel than FrameFoam ®.

B40160 (mattress foam)

The mattress foam we use has a density of 40kg/m^3. It has been specially developed for use as mattresses. When the patient lays in the mattress milled out for his or hers body, it provides a perfect contact with the body which results in a perfect weight distribution and minimalistic pressure points.

If you have any questions regarding the foam type or if you would like some samples, please do not hesitate to contact us by email (info@oms-services.org) or phone (0032 3 256 0123)

ALUMINUM CASING FOR CUSTOM SEATS

In case of a custom seat; when the foam comes out of the milling machine we begin the build of a casing for that foam.
First we cut the foam to specific dimensions that fit our modular casing system. On the order form you can specify the **maximum wheelchair width**, so we can build up the casing accordingly.

Then we build up the casing to your needs. There are a few optional parts you can have mounted on the casing.

- A Headrest with foam

- An abduction unit, with quick-release

- Foot support

- Arm support

FIRST PATIENT FITTING

After the aluminum casing has been build up and the foam is inserted it is ready for the first fitting. At this point you can trim away excess foam (under the arms or legs) with a simple knife. If the patient needs belts on his seat, it is useful to mark the area's on the foam where the belt is going to be. This makes it easier to cut away foam and mount the belts when you get back to your workshop.

If you have any questions, do not hesitate to contact us.

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