Development of hinges for sauna glass doors

42 doors – one hinge. Our solution makes it possible to replace the three hinges currently used at Tylö AB with a single one and use it on all of the 42 door types at Tylö.

This master thesis was performed in collaboration with the Swedish sauna company Tylö AB. They were in need of a new type of universal hinge for their sauna glass doors. Today, they use several different types of hinges, which all require different processing on the glass doors. This means a universal hinge would not only decrease the number of hinges in store, but also the number of glass doors kept in store. Furthermore, the processing on the glass doors is expensive and thus a universal hinge independent of processing would be the optimal solution.

The product development work has gone from brainstorming and benchmarking to computer analysis and function testing. The rather academic Ulrich & Eppinger (*Product Development and Design)* way of developing products has been combined with the hands on, practical method used at Tylö.

A well-functioning prototype has been developed from scratch. It consists of two parts, a bracket and a carrier. The carriers are glued to two of the door's corners, the upper and the lower corner on the side around which the door rotates. They have one vertical hole each, in which a pivot axis on the bracket is inserted. The hinges rotate around this axis. The brackets are attached to the door frame.

In addition, a more advanced concept with improvements to the prototype is presented as the prototype lack some essential properties when it comes to manufacturing and assembly. A few examples of improvements are rifled surfaces where the glue is applied, a plain bearing cap on the axis (to prevent wearing) and a spring that makes it possible to assemble the hinges with a quick click. The final product is universal thanks to modularity and completely independent of processed glass doors. The final concept is presented in the images below.