

# Clip-Lok International Ltd.

Danish box maker packs a punch with CATIA PLM Express



## Overview

### ■ Challenge

*To secure its competitive edge, Clip-Lok must custom design boxes that are cost effective, match the precise size and shape of their contents, and can be flattened for return shipment*

### ■ Solution

*The intelligent knowledge-based design and data management capabilities of CATIA PLM Express allow Clip-Lok engineers to create more designs and manage more projects than before*

### ■ Benefits

*Clip-Lok reduced its lead time from three weeks to less than one week and improved communication with customers, which has had a positive effect on its business*



“Using CATIA PLM Express, we have been able to design cost-effective, flat packable and re-usable boxes making Clip-Lok a formidable competitor in the packaging industry.”

Anders Lassen, Managing Director,  
Clip-Lok International Ltd.



### Manufacturer of the robust Clip-Lok box

Clip-Lok boxes are an innovative, cost-effective, environmentally friendly way to pack and unpack products. The brainchild of Clip-Lok International, a Copenhagen-based manufacturer with offices in over 14 countries, they are reusable flat-packable wooden boxes for companies that need to ship their products over any distance. Sturdy, Clip-Lok boxes can be reused on the average 100 times. Companies build the boxes through an ingenious system of clip “locks” and hinges, pack their products in the boxes and ship them to their destination. Once unpacked, the boxes can then be flattened, or flat-packed, loaded onto a truck, plane or any other transportation vehicle and shipped back to their point of origin for reuse.

Collapsible boxes reduce logistics costs, since they take up less space, allowing companies to transport more in a single return shipment. Plus, they are environmentally friendly, which has won Clip-Lok many new customers who are, themselves, environmentally conscious.

Clip-Lok boxes are also easy and inexpensive to recycle, resulting in minimal environmental impact from cradle to grave.

### Custom-made boxes for efficient use of space

“Clip-Lok boxes don’t come in standard sizes,” said Anders Lassen, Managing Director Clip Lok International. “They are made to order according to customer specifications. The majority of our customers work in automotive, aerospace or defense industries and they all need to ship different products of different shapes and sizes to their customers. A standard box is rarely the best solution since too much space is usually wasted,” he added.

Since Clip-Lok boxes are custom-made, engineers face many design challenges. They have to design a box that has the optimum shape and size with respect to the products to be packaged, that is cost efficient to produce, assemble and flatten and that occupies as little space as possible during return shipment. These design challenges are met thanks to CATIA PLM Express.



“Meeting these challenges helps give us a strong competitive edge on the market,” said Jeroen Pappot, Development Manager, Clip-Lok International. “Whereas in the past, we would use complex, time consuming calculations using physical prototypes to come up with the best possible box, we now work in a virtual 3D environment using CATIA. We can make sure that there is little or no wasted space when the products are placed in the box and show this to the customer very early in the design process before even producing the first physical prototype.”

### Exchanging digital information

Clip-Lok upgraded its existing CATIA solution to CATIA PLM Express because it needed a more complete all-in-one solution for design and data management, as well as the ability to integrate STEP files into the CATIA environment. In effect, many of Clip-Lok’s customers provide digital files in STEP, IGES, or native CATIA data. Its designers then use CATIA to design the box. Clip-Lok sales representatives present the resulting digital 3D model to the customer as a first design proposal. Once approved, drawings of the prototype are automatically generated in CATIA from the 3D model and the physical prototype of the box is produced. The customer can then test it in real life before ordering the box in series.

### Reduced lead time and improved communication

Using CATIA PLM Express, Clip-Lok responds to requests for proposals (RFP) more quickly. Using 3D virtual models has also facilitated

the work of its sales team since 3D helps customers visualize and easily understand the way their product will fit in the box. “Our ability to communicate in a virtual world with our potential customers has had a positive effect on our business,” said Anders Lassen. “And very soon, we will also use CATIA PLM Express to virtually simulate box assembly, packing, unpacking and flat packing as a way to verify, upstream, that our designs are ergonomic and feasible,” he said.

Lead time from the moment Clip-Lok receives an order to the moment the box enters production has been reduced from three weeks to less than one week. “Thanks to CATIA’s intelligent knowledge-based design capabilities, we can define the parameters for one hinge and the system automatically proposes the correct number and position of all the other hinges of the box. Interference checking can also be done virtually to ensure that there are no conflicts or interferences between the product to be packaged and the slots and hinges of the box itself. As a result, our engineers can create more designs and manage more projects than before,” said Jeroen Pappot.

### Next step: ENOVIA SmarTeam and integration to ERP

Clip-Lok also chose CATIA PLM Express as a stepping stone to a larger PLM solution that includes data management. It is currently in the process of streamlining the flow of information within the company by associating a drawing to an order or stock number so that when a drawing is accessed all relevant

information is automatically displayed as well. It will also soon implement a digital drawing database based on ENOVIA SmarTeam and integrate this database into its ERP system.

Clip-Lok received support from Rand Denmark in choosing and implementing CATIA from the very beginning. Rand provided Clip-Lok with education services, technical support as well as design expertise and advice and is currently helping Clip-Lok implement all its drawings in its ERP system.



“Thanks to CATIA’s intelligent knowledge-based capabilities, we have reduced our lead time from order receipt to production from three weeks to less than one week.”

Jeroen Pappot, Development Manager, Clip-Lok International Ltd.



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