

THE FOOTWEAR DESIGNING SESSIONS USING CRISPIN DYNAMICS ENGINEER

1 ST PART: - Develop into a full shell

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Abstract: *The diversification and customization of products are important characteristic of the modern economy and especially of the fashion industry. Because of this, the lifetime of the footwear product is very short and result the necessity to cut the design and production time. By classic methodology, designing footwear is a very complex and laborious activity. That is because classic methodology requires many graphic executions using manual means, which consume a lot of the producer's time.*

With CRISPIN Dynamics, one can visualize a range of designs on-screen; work out the costs of a new style and even cut out sample shoe components. Reliance on manual skills is largely eliminated, so the staff can work creatively, but with increased accuracy and productivity. One can even send designs to a distant office or manufacturing centre in a matter of minutes.

This paper presents the basic function of CRISPIN Dynamics CAD Suite Engineer for footwear design. The process of new product development has six stapes: digitized form of the medium copy, last flattening, model drawing, creation and management of individual parts, estimation of material consumption, multiplying the designed footwear product's pattern.

This product has been developed for shoemakers who wish to ensure that their business remains competitive by increasing the efficiency, speed and accuracy of pattern development and grading.

Key words: *footwear, design, computer, part, pattern.*

1. INTRODUCTION

By classic methodology, designing of the footwear is a very complex and laborious activity. This is because classic methodology requires many manual graphic executions, which consume a lot of the producer's time. Moreover, the results of this classical methodology may contain many inaccuracies with the most unpleasant consequences for the footwear producer. The decisive step in this way has been made some time ago, with the powerful technical development and massive implementation of electronically calculus systems and informatics, CAD (Computer Assisted Design).

With **CRISPIN Dynamics**, one can visualized a range of designs on-screen, work out the costs of a new style and even cut out sample shoe components. Reliance on manual skills is largely eliminated, so the staff can work creatively, but with increased accuracy and productivity. One can even send designs to a distant office or manufacturing centre in a matter of minutes.

2. THE FOOTWEAR DESIGNING SESSION

This paper presents the basic functions of **CRISPIN Dynamics CAD Suite Engineer** for footwear design. The software is a 2D application of the **CRISPIN Dynamics CAD Suite**. The **Engineer** program is broken into a series of 'tasks' [1]. Each 'task' has a 'tool tray' that contains a number of separate functions to achieve the task. This are:

- **Drawing**
- **Grade**

□ Assess

When the Engineering program first starts the Draw task is active and the tool tray is displayed, as shown in the above partial image.

For start of the base model on obtained using functions: digitize or flattening.

The first step in the footwear designing session is:

- **digitized form of the medium copy**
- **last flattening**

2.1. Digitize the flattened half shell or standard

The first step in a footwear design session is to save in the computer's memory the digitized form of 'half shell', or standard [2]. Afterwards, the steps of digitizing are as follows:

- Prepare the flattened half shell or standard for digitizing by lightly marking where the key points to record are on the edges and internal lines.
- Align the shell on the digitizer, fix in place with a little low tack tape and digitize all the lines.

The process continues with the input of base line data from a 2D digitizing tablet. You can use any 2D digitizer supported by the 'Wintab' standard and as only 3 buttons (and delete) are needed it is easy to learn, quick and accurate.

To begin we will assume that the digitizing tablet has been correctly configured and calibrated if necessary. So the first step is to click on the digitize icon, shown above. There is a variation in the process if there is already data on the screen but for the moment let us assume this a new pattern. Align the shell on the digitizer, fix in place with a little low tack tape and digitize all the lines.

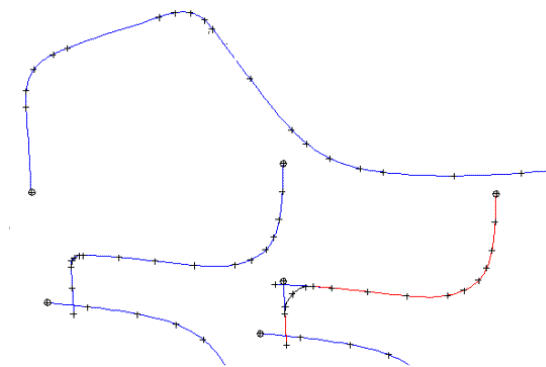


Fig. 1: Digitize the flattened half shell

For that prepare and mark the shell with a pencil, the points to digitize along the lines. In the process keep the number of data points to a minimum [3]. In figure 2 there is one example of a digitized the lines of the pattern.

2.2. Last Flattening

Flattening is the process that turns the 3D dimensional last and design into 2D data, to be used in a program like **Crispin 2D** to create and then grade pattern pieces. The operation on execute using the window flattening [4].

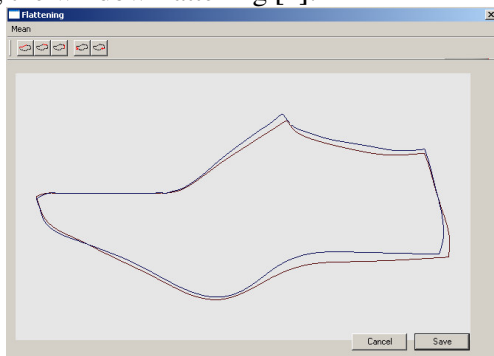


Fig. 2: Flattening the part inside and outside of the last

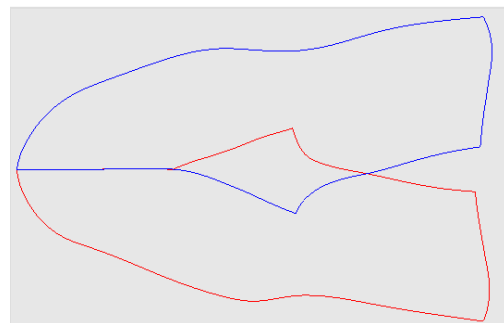


Fig. 3: Flattening full

The type for flattening is:

- a) **Half**

Splits the form down the back centre-line, and splits the forepart centre-line along its entire length, allowing the separate inside and outside forms to be superimposed. The relative positioning of the **inside** and **outside** forms and their **orientation** are with the '**Vamp Points**' of the two forms coincident (fig. 3).

b) Full

Open the inside and outside forms to a whole-cut shape (fig. 4).

3. RESULTS

In this paper is creating o base footwear using Crispin Dynamics CAD SUITE. For this is flattening the last and style line (fig. 4).

Draw the style on the last surface [6]. **Style-lines** are generated on the last surface with this 'user friendly' software product allowing new designs to be achieved in minimum time whilst achieving an accurate representation of the shoe. Enhanced visualization is achieved by applying features such as stitching, eyelets and laces together with colors and textures. An interactive sole design facility is provided.

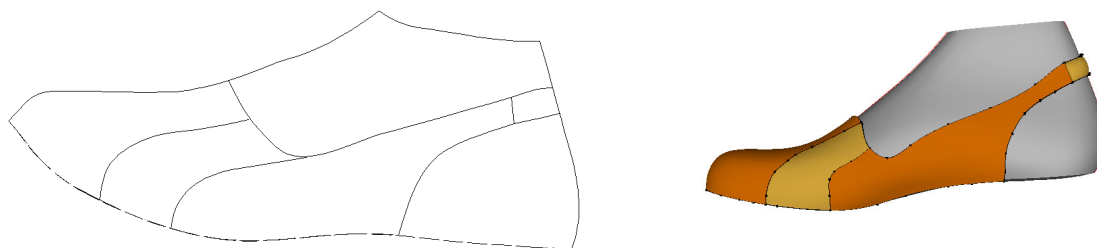


Fig. 4: Flattening the last and style line

3.1. Develop into a full shell

The system **CRISPIN Dynamics CAD Suite Engineer** offers many functions for the drawing of the footwear pattern. Using the CRISPIN function once can develop into a full shell and create sundries effect for the footwear patterns.

The following layout summarizes **Crispin** drawing functions for develop into a full shell.

The layout of **CRISPIN Dynamics Engineer** follows a pattern established by many PC programs using the 'single document' model as the basis of operation (see Fig.5). This means that a single instance of Engineer can only have one pattern file open at a time.

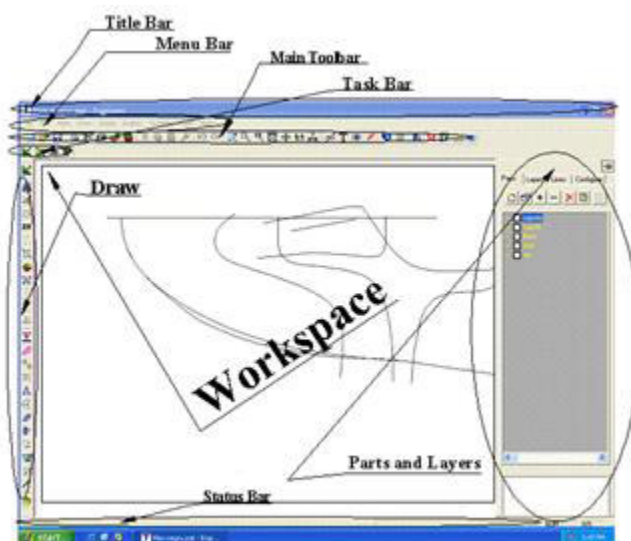


Fig. 5: The window Engineer for develop into a full shell

Engineer consists of these main areas:

- A title bar, that shows the program title with the name of the pattern currently loaded.
- A menu bar, at the top, following normal Windows convention.
- A main toolbar, underneath the menu bar (default location).
- A small 3 option task bar, underneath main tool bar.

A tool tray at the left of the screen, the Draw, tool tray is automatically active at startup (see fig. 5).

- * The Parts and layers manager will 'slide out' from the right side of the screen when the mouse pointer 'hits' the side. There is an alternative 'icon browser' view of the parts not shown below.

A status bar at the base of the screen displays prompts and other information while the program is being used.

- * Last but not least is the main workspace area. When a pattern is first loaded the program is in 'selection mode' waiting for a line type or function to be selected.

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Figure 6 presents one example of developing full shell using this window and the graphics instruments.

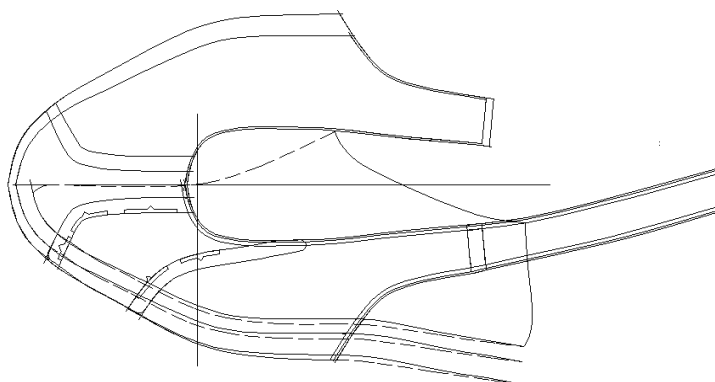


Fig. 6: The result using Engineer for develop into a full shell

4. CONCLUSIONS

The software produced by **Crispin Dynamics** has remarkable results in footwear design but it is working with an authorization of the company. A license 'authorizes' a computer to run specific **CRISPIN Dynamics** software. Licenses are often also used to specify which options within an application can be run.

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