



ASPECTS REGARDING THE DESIGN OF THE TECHNOLOGICAL PROCESS FOR MAKING THE UPPER SHOE ASSEMBLY

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Abstract: *This paper presents the technological process of manufacturing a men sports shoe product, in the IL system. The paper begins with the presentation of the technological process of manufacturing the product as an assembly, followed by detailing in a case study the specific operations, but also the common ones, which are carried out during the process. In the case of this model, the order of operation of the technological process is given by the method of joining the top with the upper but also by the type of the linings. The technological process presents the method of assembling the component parts of the upper assembly, the equipment used, the time norm and the production norm. In conclusion, we can say that a special role in obtaining a production both qualitative and quantitative represents the way the production is organized, the maintenance of the machines, the optimal use of the production capacity, so as to ensure a continuous flow of production. The production launch is made according to the adopted manufacturing program, and this is done in correlation with the production capacity and the quantity of the finished product that will reach the beneficiary.*

Key words: footwear, cutting, technological process, operation, flux

1. INTRODUCTION

The technological process of making a shoe product is structured, for the classic technologies, on three distinct segments: cutting of component parts, processing and assembling them and finishing the products.

The technological peculiarities, for a particular product depend on the confecting system adopted, the existing technical endowment and the technological characteristics of the product to be made [1].

The design of the technological process of processing and assembling the component parts of the upper assembly (upper parts and linings) is of particular importance in the manufacture of footwear products, which subsequently combines with the lower assembly, resulting in the finished product [2-3].

In the technological process, the order of the stitching operations of the parts of the faces and linings is imposed by the model variant and the way of combining the faces with the linings [4].

The paper highlights another form of presentation of the technological process in the preparation-sewing workshop. Thus, the component parts of the product and the processing-assembly of parts are presented. This presentation is very useful for the practical realization of the prototype. When making the drawings the Autocad program was used.

2. CASE STUDY:

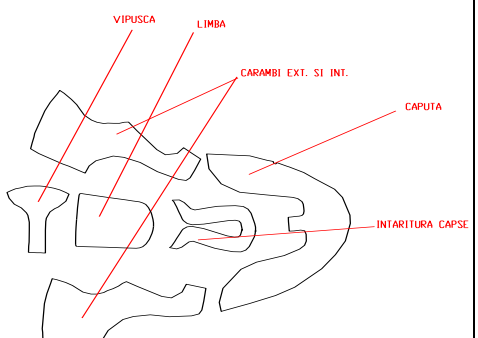
In the present paper, we present the design of the technological process of processing - sewing for a sports shoe type product for men, in IL system, made of natural leather in the front part combined with corrected front and outer linings out of lining leather, fig.1

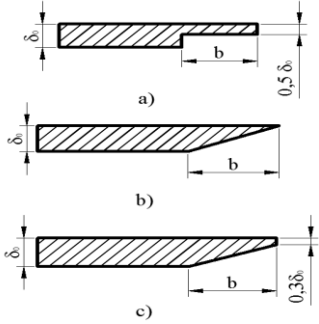


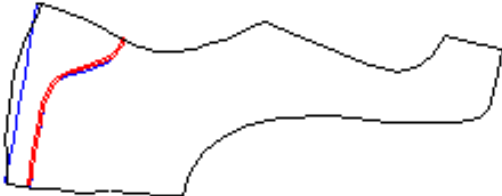


Fig. 1: Men's shoe

Thus, within the technological process of processing - assembling the upper part of the product, it is presented the method of assembling the component parts with all the operations [5,6] that the component parts of this assembly contain, the execution mode of the operation [7], the equipment used, the time and production norms. The time norm consists of the preparation-closing time, the operative time, the service time at the workplace and the time of regulated interruptions. These times were practically determined by timing the manufacturing process, throughout its development. The production norm will be calculated on the basis of the time norm, taking into account the fact that it represents the quantity of products realized in a working shift.

Table 1: Presentation of the technological process

	Name of the operation	Mode of operation	N _T [min* om/pe r]	N _P [min*o m/per]
1.	Tailoring the uppers parts: top, leggings, tongue, braid, staples and padding reinforcement	-Imechanic: electro-hydraulic punching tool with folding arm 	2.981	161.01
2.	Equalizing the marks of the uppers and the lining	-mechanic: flexible marks equalizing sewing machine	0.8	600

3.	Thinning the margings of the marks	<p>-mechanic: flexible marks equalizing sewing machine</p>  <p>a) – right thinning b) – oblique thinning up to zero size c) – oblique thinning up to finite size.</p>	1.64	293
4.	Sewing the lining	<p>-mechanic: sewing machine with flat table</p> 	1.4	342
5.	Sewing the ornament on the legging	<p>-mechanic: sewing machine with flat table</p> 	2.98	161
6.	Sewing the heel counter stiffener on the legging	<p>-mechanic: sewing machine with flat table</p> 	2.2	280
7.	Sewing the legging at the back	<p>-mechanic: sewing machine with flat table</p>	1.1	436

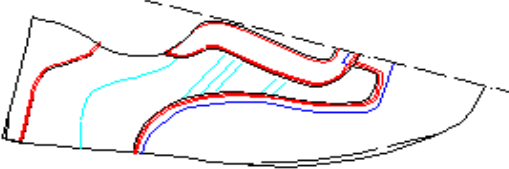
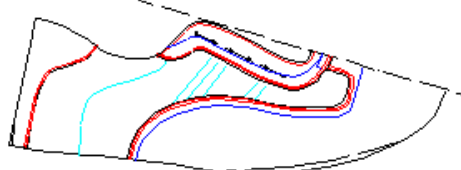
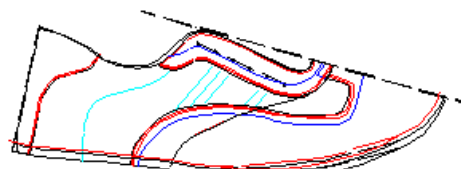


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8.	Sewing the legging at the front	--mechanic: sewing machine with flat table	0.3	1600
9.	Sewing the top on the legging	-mechanic: pillar type sewing machine	2.20	218
10.	Sewing the tongue with lining	-mechanic: sewing machine with flat table	0.78	615
11.	Greasing and lining the tongue	- manual: working table	0.6	800
12.	Sewing the tongue all around	-mechanic: sewing machine with flat table	0.5	960
13.	Cutting all the surplus lining	-mechanical: spare cleaning machine	0.,8	600
14.	Sewing the staple reinforcement on the upper parts	-mechanic: pillar type sewing machine with 2 threads	1.4	342
15	Sewing the upper parts with lining	-mechanic: pillar type sewing machine	1,5	320
16.	Greasing and lining the	--manual: working table	1,5	320



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	uppers			
17.	Sewing all around the uppers	-mechanic: pillar type sewing machine	2,5	192
				
18.	Cutting the surplus lining	-mechanical: spare cleaning machine	1,3	369
19.	Applying the toecap	-mechanical: machine to apply thermo-adhesive toecap	0,8	600
20.	Greainsg and lining the top	-manual: working table	1	480
21.	Perforating the tops for shoe lacing	-mechanic: machine for perforating and encasing staples	0,8	600
				
22.	Shoe lacing with rope of the tops	-manual: working table	0,5	960
23.	Preforming the semi-finished product in the heel counter stiffener area	-mechanic: punching machine for the heel counter stiffener	1,5	320
24.	Sewing the uppers in the pulling reserve area	-mechanic: simple pillar type sewing machine	1,4	342
				
25.	Removing the ends of threads and cleaning the semi-finished product	-manual: working table	1,57	305
26.	Control, transport of errans in the regrouping warehouse	-manual: working table	1,5	320

3. CONCLUSIONS

In order to obtain a quantitative but also qualitative production, we must consider the organization of the workplace. Thus the sewing machines must be in good working condition, being maintained regularly by lubrication on time and by cleaning. The work place must be supplied with needles and thread depending on the color of the upper parts and the thickness of the material. The



lighting of the workplace is particularly important and must be ensured both by controlling the illuminator but also by replacing them.

In the production units, in order to obtain an optimum quantity of the products, the following will be taken into account: optimal use of the production capacity, launch of the flow production within the manufacturing programs and errands, ensuring the match between the size of the program and the volume of production on the shift, etc.

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