

Improvement of the Design of Working Bodies of Modern Presses to Increase Shape-Saving Characteristics During Moisture-Heat Treatment of Clothes

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Abstract: The purpose of writing this scientific article is to analyze the methods of wet-heat treatment of clothing at manufacturing enterprises, the classification of technological processes according to the nature of the interaction of the working tool and the semi-finished product, a brief description of the operation and types of wet-heat treatment, wet-general information about thermal equipment, the state of the technological process of wet - heat treatment of garments, problems and possibilities for their elimination, recommendations for studying ways to improve methods for imparting form-holding properties to clothing during wet heat treatment.

Keywords: wet heat treatment, deformation, processing, fiber, fabric.

Introduction

The expansion of the export potential of our country has given new tasks to every field of production. In particular, the development of the sewing industry, providing our people with high-quality, beautiful clothes are one of the important tasks facing light industry workers. In order to fulfill these tasks, it will be necessary to increase the production of sewing products, increase their size, improve their quality, and create enterprises with new high-efficiency equipment.

Currently, sewing enterprises of our country are filled with equipment produced on the basis of the latest scientific and technical achievements. Complex mechanization and automation of technological processes continues by equipping machines and equipment with various devices. It is necessary to create modern ironing and pressing machines that perform several technological processes at the same time.

Of course, together with the development of the sewing industry, it is also necessary to provide the industry with highly qualified and mature specialists who meet the requirements of the time.

In the course of my scientific article, the positive results of my scientific research aimed at improving technological processes, developing quality products and increasing work productivity by equipping the above-mentioned sewing machines and equipment with various devices will be reflected.

Research Materials and Methodology

Production of sewing products is one of the important tasks facing the light industry. In this regard, the development of new types of materials and their processing methods during technological operations, the creation of automated means of control and adjustment of processing procedures, as well as the mechanization and automation of equipment, first of all, ensure the high quality of the manufactured products, all I think that the assortment of clothes should be constantly improved and updated, taking into account the needs of the population of the age group.

In improving the quality of sewing products, it is important to use the properties of textile materials to maintain their shape, to treat the product with moisture and heat, and the main purpose of this is to give the product a precise shape and maintain its stability.

Shape stability is determined by the stability of deformations given to the product to form a shape. The weakening of deformation in one form or another as a result of various effects on the formed sample with the passage of time after the formation of the shape was accepted as an evaluation criterion of the stability of the shape.

Research Results

Theoretical studies show that it is possible to obtain shells for any curved surfaces from textile materials. Many works are based on Chebyshev's theory.

For the research result of my scientific paper, I will use the "Steam Mannequin" as an example experiment:

The steam-air mannequin is designed for the final wet-heat treatment of sewing products. There are several types of mannequins depending on the type of products and materials. This can be seen in the table below.

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Parameters of steam-air dummies:

| <i>Parameters</i> | MB-401 | PVMG-1 | MPVU | MPVU-01 | MPVU-2 | MVPB |
|---------------------------------------|---------------|---------------|-------------|----------------|---------------|-------------|
| Productivity, product/hour | 43 | 31 | 45 | 50 | 50 | 50 |
| Vapor pressure, mPa | 0,5...0,6 | 0,3...0,7 | 0,3...0,6 | 0,3...0,6 | 0,29...0,58 | 0,29...0,58 |
| Steam consumption, kg/sec | 0,0075 | 0,0153 | 21 | 2 | 24 | 14,6 |
| Air pressure, Pa | 760 | 220 | 90...300 | 90...300 | 90...300 | 90...300 |
| Air consumption, m ³ /s | 0,125 | (10..20) | 0,18...1,5 | 0,18...1,5 | 0,18...1,5 | 0,18...1,5 |
| Air temperature, °S | 40..45 | - | 75±5 | 75±5 | 75±5 | 75±5 |
| Power of the electric motor, kW | 0,4 | 0,6 | 0,75 | 0,75 | 0,55 | 0,55 |
| Steaming and drying time, sec | - | 1...60 | 0...90 | 0...90 | 0...90 | 0...90 |
| The largest length of the product, mm | - | 1200 | 1130 | 1130 | 1130 | 1130 |
| Product shoulder width, mm | - | 290...475 | 396...560 | 396..560 | 396...560 | 396..560 |

MB-401 the branded steam-air mannequin is designed for the mechanization of finishing operations during wet-heat processing on pants;

PVMG-1 the branded steam-air mannequin mechanizes the finishing work in the processing of sewing products from wool, silk, yarn-gauze and synthetic gauze;

MPVU universal steam-air mannequin is used to perform finishing operations in wet-heat treatment of sewing products;

MVPU-01 designed for wet-heat treatment of trousers;

MPVU-02 designed for wet-heat processing of synthetic and natural fibers into products;

MPVU-03 steam air mannequin is designed for wet-heating treatment of pants in household service enterprises with a centralized steam supply system.

MPVU The mannequin (Figure 1) contains the following basic assembly units: base(8), fan(6), heater(2), wardrobe(7), vapor conductor(1), electrical unit (4).

The base (8) is in the form of a molded and sheet-metal welded structure, on which the main assembly units and details of the mannequin are installed. Centrifugal fan (6) is designed to drive air through the heater (2) into the casing of the wardrobe or trouser suit. The fan (6) receives the movement from the electric motor (4) through a belt drive (5).

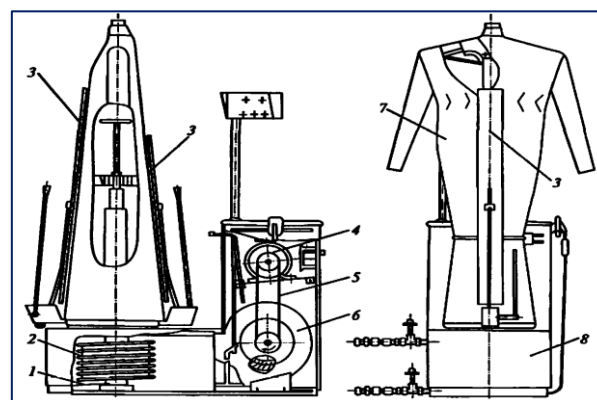


Figure 1. MPVU steam dummy.

The heater (2) is designed to dry the air supplied to the product through the hood (7) during drying after steam treatment. The steam coming from a central manikin or a group of steam devices is considered as the heat carrier of the heater. The heater is made in the form of a spiral coil with smooth walls, and is installed in the fan guide on the mannequin base (8).

In the processing of various types of shoulder sewing products, the wardrobe garment (7) is the main performing device. It can be manually rotated to 360° around the vertical axis.

The design of the wardrobe can be adjusted depending on the width of the shoulders, the size and shape of the product to be processed.

Discussion

V.N. Gorbaruk, S.I. Rusakov, A.I. Komissarov, N.M. Archilov, V.L. Polukhin, L.B. Reybach, O. Suziki, V.B. Sherbekov, A.P. Cherepenko, A.A. Cherepenko, T.G. Stebakova were the founders of sewing production and the wet-heat treatment of products. V. G. Shumetov, V. N. Malsev, V. A. Pudov and other scientists are considered.

Z.Tadjibaev, K.Djemanikulov, A.Zhoraev, S.Baubekov, S.Sh.Tashpulatov, D.S.Mansurova, I.M.Rakhmonov and others made a great contribution to the development of technology in Central Asia.

Until now, the main direction of improvement of wet-heat processing machines and mechanisms is aimed at increasing labor productivity and improving technological processes. At the same time, research aimed at reducing the mass and main external forces of working parts, developing effective technologies by using automatic control systems is being carried out.

However, there have been almost no studies aimed at creating newly designed presses with high productivity, replacing the top pad of the "press", which ensures that all the details of the clothes are processed one after the other in one press.

Conclusion

Modern methods of wet-heat treatment always lead to the breakdown of fiber parts, but the amount of such fibers is small, it has little effect on the performance of the garment, and often depends on the skill of the worker who performs the work of wet-heat treatment of the products. . The quality of carrying out the technological process depends not only on the qualification of the technical and service personnel of sewing enterprises, but also on the quality of preparation of the construction of the equipment, adjustment of the equipment and its operation.

We should always pay great attention to the wet-heat treatment process when preparing clothes, and we should not forget that this affects the aesthetic appearance of the item.

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