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Information about Electromechanical Presses

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Abstract: *This article provides information on the design and benefits of electromechanical presses. The processed products are moistened with steam entering the upper cushion of the press. The press consists of a bed, upper and lower cushions, a drive mechanism, steam supply elements and an automatic control system for a wet-heat press.*

Keywords: press, electromechanical presses, pneumatic, hydraulic wet-heat treatment, steaming and suction, electric heater, manometric thermometer, waterproof engine.

INTRODUCTION

In the sewing industry, several types of presses are used with pneumatic, hydraulic and electromechanical drives. Printing types are determined by the look of the fabric. Electromechanical presses are used to process almost all types of fabrics, including leather, less than 2.5 mm thick.

The advantages of electromechanical presses:
- design reliability
- energy saving
- high accuracy and speed, independent of temperature changes
- starting work at low temperatures without the need for warming up
- minimal maintenance
- lack of high-wear parts

For example, we can take the CS 311 electromechanical press from Pannonia.
The electromechanical semiautomatic press Cs - 311 from Pannonia (Hungary) is intended for in-process and final wet-heat treatment of products in the production of women's and men's outerwear, underwear and knitwear in accordance with the requirements of modern technology.

MATERIALS AND METHODS

On the press, using the installed time relays, the duration of the pressing, steaming and suction times is regulated. Heating of the upper cushion of the press is provided by electric heating elements, and the required heating temperature is maintained automatically by a manometric thermometer with an electric contact device. The lower press cushion is heated by steam.
The press frame is made of structural steel with rigid welded ribs. All structural elements are built into the frame and covered with shields on three sides.

Electromechanical Press Specifications

Performance cycle / evaluation	600
Pressing force, N	20000
Ironing temperature surfaceoC	80-250
Steam pressure, MPa	0,4
Power, kWt	7,1
Maximum thickness of pressed parts, mm	12
Dimensions, mm	1265x1200x1450
Weight without pillow, kg	500

RESULT AND DISCUSSION

The drive is carried out from a three-phase asynchronous waterproof motor 1, which is connected through a V-belt transmission 2 to a single-stage worm gear 3.
The gear ratio of the V-belt transmission is i = 1: 2, and the gear ratio of the gearbox is i = 40: 1. Cranks 4 are attached to both ends of the worm wheel shaft.
Both cranks are connected by means of a connecting rod 5 with a lower lever 6, the upper arm of which is connected to an earring 7.
The second head of the earring is connected to the main lever 8, which consists of two parts 8 and 11.
A pressure regulator 9 is installed in the upper part of the lever, and the upper cushion 12 is attached to the front end of the main lever 11 with a spherical or ball hinge.

The bottom cushion 13 is fixed rigidly with screws to the bed.
When the drive motor is turned on, the worm wheel turns clockwise by about 1000, and the rocker 4 through the connecting rod 6 turns the lower lever.
In this case, the shackle 7 rotates the main lever counterclockwise around the axis 10. The upper press pad is lowered, and the lower arm 6 and shackle 7 are set in one line, taking a stable position.

CONCLUSION

The motor is then automatically switched off. After the set pressing time on the time relay, the motor is automatically switched off, but rotates counterclockwise.
The worm wheel and rocker arms turn the lower lever 6 also counterclockwise, and the upper press cushion rises. Electromechanical presses can be used in this order. In the future, I also want to try my scientific fur fabrics by pressing them on this press.

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