IMPROVING THE QUALITY OF YARNS BY INSTALLING AN ADDITIONAL COMPACTOR ON THE SPINNING MACHINE

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Today, our country has all the resources for the development of the textile industry, labour resources, light industry technologies are equipped with modern equipment. Technological processes in the textile industry are a complex set of physical and chemical phenomena that can be successfully studied only using modern advances in science and technology [1].

Receipt of raw materials in all industries, including textiles, production of semi-finished products in various shops and their acceptance in subsequent departments, production of finished products, mastering new techniques, improvement of technological processes, there are common problems such as placement of technological equipment and optimization of their basic technological, design parameters [2].

In a conventional loop spinning machine, the distance between the stretching pairs is different, which leads to a lower level of fluff and strength of the yarn. The fibres in this zone have no twists. The fibres at the edges of the fibre stream flow out of the flow zone and have little or no effect on the strength of the yarn. One of the important advantages is to increase the strength of the yarn, increase the abrasion resistance of the yarn, and reduce hairiness. Most of the fibre flow compression causes the fibres to move sideways by compressing the lever of the elongated pairs, and as a result, they condense.

Today, the compact method is widely used in the production of yarn, but it is advisable to adapt the system to a traditional ring spinning machine, even if the yarn is obtained. It is characterized by low economic cost and good quality of our products, as well as simple traditional yarns.

In this study, in order to improve the quality of the yarn obtained by the loop method, the aim is to increase the strength of our yarn obtained by applying additional densifiers to the spacing of the stretching pairs. In this case, the mechanical additional compactor is cheaper and less complicated than compact spinning machines when placed on a conventional ring spinning machine. Plus, you'll be getting rid of clutter you don't need. In previous studies, mechanical compression spinning yarns have significantly improved the degree of fineness and fibre flow to uniform tension properties [3,4].

To date, there are many studies comparing the properties of yarns in many ring spinning machines. In our study, in order to understand how the yarns were obtained by placing an additional densifier placed at intervals between the stretching pairs of the loop spinning machine, we put a conventional ring spinning machine and an additional densifier of yarns of two different linear densities The yarns obtained through were compared. The raw material of the yarn obtained for comparison and the spinning process were also obtained in the same way. Our research was conducted at UZTEX UCHKURGAN LLC, located in the Uchkurgan district of the Namangan region. In our study, in order to eliminate any impact on the quality of the yarn, a homogeneous linear density of raw yarn was obtained, one of them was placed on one G32 ring spinning machine, an

additional compactor was placed on one yarn, and the remaining yarn was spun on the same linear density. threads were taken. The obtained results were checked on the USTER TESTER 6 and compared with the properties of the yarn in terms of flatness, defects, hairiness, yarn numbers, and diameter.

Table 1. Quality indicators of spun yarns

№	Yarn quality indicators	Enterprise	Research
1	Yarn number is the coefficient of variation	9,19	9,1
2	The coefficient of variation of the roughness of the rope	11,64	11,54
3	Thin areas of the rope -30% / km	445	423
4	Thickness of the rope is 50% / km	38	23
5	Knots in the thread Neps 200% / km	30	18
6	The fluff of the rope H	7.28	7.03

In our study, we compared the spun yarns, ie yarns obtained experimentally, with the yarn produced in the enterprise, and were able to determine the difference in their performance. The roughness of the yarn produced at the plant was 11.64%, while the roughness of the yarn obtained experimentally was 11.54%.
At the same time, we can see that the unevenness of the yarn in the sample has improved compared to the yarn produced by the company. The cleanliness of the rope is determined by the defects on its surface. All tests were performed after the spun yarn yarns were stored at 65% relative humidity for 24 hours under standard atmospheric conditions, and the test results were analyzed. In assessing the properties of spun yarns, the linear density of the yarn is compact compared to the traditional yarn obtained by experimental results, the fibres from the body of the yarn are less than the yarn obtained by the traditional method. We analyzed the main properties of the yarn, such as linear density, twist coefficient and spinning system. According to statistical analysis, when measuring the diameter of spun yarns with additional compaction between the conventional and the cylinders, as a result of the addition of fibres to the yarn due to the reduction of the spinning triangle of the spun yarn the diameter of the spun yarn obtained by placing an additional densifier will be smaller than that of the yarn obtained by the method. Of course, the linear density of the yarn in the spinning system also depends on the incoming fibre flow [5,6].
The results of the strength and elongation ratio of the yarn to be spun are lower than those obtained by the traditional method and the density of the spun yarns obtained with the addition of additional densifiers according to statistical analysis. In terms of elongation of spun yarns, the additional compaction device is also distinguished by the low elongation of the yarns. The strength of the yarn increases the abrasion resistance of the fabrics made from these yarns. The difference between the values of friction of traditional woven fabrics is less noticeable than spun woven fabrics with additional compaction.
In our research, it was found that the spinning machine has a larger diameter and fewer elongation properties than the yarn obtained by the additional compactor placed between the stretching pairs of the spinning machine and the yarns obtained by the traditional method. As the diameter of the yarn decreases, the interaction of the fibres increases, which leads to an increase in the strength of the yarn.
The appearance of the spinning yarn affects the surface of the fabric from which it is made. The higher the strength of the yarn being spun and the lower the degree of hairiness, the greater the effect of these properties on the appearance of the fabrics woven from these yarns.

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