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ANALYSIS OF IMPACT OF DEFECTS ON IP QUALITY

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Annotation: This article analyzes the effect of various defects on yarn. in yarn and man-made yarns, thicker threads are formed as a result of the strip being torn off. This defect is caused by the fact that the tape is not connected correctly. As a result of research, measures to prevent tape rupture were analyzed.

Keywords: defects, light, capacity, mass, unevenness, engine, air pressure, mechanism.

Currently, Saurer Czech and Saurer Group companies, in cooperation with other companies, produce many models of pneumatic spinning machines under the BD brand. A group of such machines is produced under the BD 300 model (models BD 310, BD 320, BD 321 and BD 330). These machines are designed for spinning cotton yarn.

The machines have the following mechanisms in order to improve thread quality, facilitate technical maintenance and increase the economic efficiency of production:

- "third hand" - a mechanism for removing the bobbins filled with thread, installing an empty spool and providing spare winding from the thread on its right side;
- a connecting lever or a semi-automatic connecting mechanism to facilitate its connection when the thread is broken;
- control device - serves to display the adjusted and actual parameters of the machine, adjust, perform technological calculations, control the process of starting spinning, and monitor the operation of the machine.

On the display of the control mechanism, all indicators are displayed in the specified order or they are reset. You can choose the necessary language for communication (English, German, French, Russian and others);

- device for starting the spinning process;
-lights indicating that the thread is disconnected;
- pulleys, belts for changing speeds in the transmission part;

- data gathering system (on some machines);
-lights warning of changes in air pressure (in some cars);
- an additional engine for adjusting the rotation speed of the camera (in some cars);
- automatic air pressure adjustment device (on some cars).

The technological structure of the machine does not differ much from the previously reviewed machines. In it, the essence of the processes of supplying, discretizing, transferring and threading, winding the thread is carried out in the order of the previous machines. However, due to the use of mechanisms and devices that implement these processes, their parts, transmission of motion to the machine and the use of new technical solutions in its management, the quality of yarn, the increase in productivity will lead to an increase in economic efficiency. This is a very important result.

Thickened strands appear as a result of a hair breaking off, its tip becoming entangled with another hair. The main defects found in raw silk are various and include: short thickened areas, longer dense sections, protruding and displaced ends of the silk, and splits in the middle of one or more strands when the cocoon threads are under different tension. spiral into threads to be wrapped in appearance.

In addition, defects affect weaving processes. That is, the thickening of yarns is the presence of yarns or warp yarns in the yarn whose linear density is higher than the linear density of the main fonn of the yarn. Local thickening - thickening of trunk or rope threads in short sections. Defects such as the difference in the tension, twist, color or shape of the cross-section of the threads of the warp or weft thread from the neighboring threads also affect the weaving process.

Artificial yarns have the following defects: uneven spinning of viscose yarns or insufficient spinning (occurs when the yarns are formed in excessive acid deposition baths), different colors of the yarns (occurs when the spinning solution is not homogeneous and dirty) , the hairiness of the threads - the ends of isolated threads that have broken off and protruded on the surface of the thread (when the spinning solution is not well cleaned of air bubbles and the solution is not appears when there is no viscosity), twisting - in the short part of the threads wavy tortuosity.

Appearance of cotton threads according to GOST 15818-80 standard is determined; short-section unevenness, knots (thinning, thickening); visible, seed parts, leaf, bark fiber, pod fragments, various external defects and hakoza. They are divided into A, B, V classes. Unevenness is defined as the unevenness of the kalava

yarns and yarns in terms of thickness, cooking, hardness and elongation. In order to determine the unevenness, the kalava yarn is compared with the standard (sample) kept in the laboratory, as well as by measuring the indicators several times with the appropriate tools and putting them into the appropriate formulas, the unevenness is calculated as a percentage. Yarns and staple fibers made of chemical fibers are more uniform in terms of yarn properties than complex yarns made of natural fibers and natural silk.

Figure 1. An image of the MOK device that determines the cleanliness of the thread.

With at least 10 tubes to determine the class of spun yarns thread is selected. Each product unit is wound on a screen winding machine with a pitch of 1.5 mm on a black board up to 100 m long, and the class of yarn for each side is determined by comparison with benchmarks. The work of wrapping the spun threads on the board is carried out evenly. In order to easily calculate the defects in the spun yarn, a template made of black cardboard is placed on the wound yarn. This pattern is divided into 10 rectangles. Each rectangle is 20mm high and 25mm wide to view

25 twisted yarns, 5m on 1 side and 5m on 2nd side, sum of yarn defects calculated and compared to the table, the class of the thread is determined.

A cardboard template is placed on a board wrapped in thread. It has about 10 rectangular holes. The length of the strings inside the rectangle is 5 m. Defects on the threads inside the rectangles on both sides of the board are considered. According to the obtained result, the number of defects corresponding to 1 g of thread is determined by the following formula.

$$n_1 = \frac{10^3 \cdot n}{T \cdot L}$$

where: linear density of T-thread, tyeks; n-10 m number of defects in the thread; L=10 m.

Subsequently, several methods and equipment projects have been developed in the spinning industry to control product defects. Currently, visual, gravimetric, mechanical, capacitive, photoelectric and other types of measuring methods are widely used for these purposes.

The method and tools of the company "Sylveger" (Switzerland) for determining the defects of spun yarns occupy one of the top places. One of the most common equipment for detecting defects of spun yarns in the spinning process is "Uster-Tester". The following features are obtained in the equipment: common defects in 1 km of spun yarn - thinning (-20, -40, -50, -80%); thickened (+35, +50, +70, +100 %), knots (+140, +200, +280, +400 %). The equipment has high performance and diagnoses the condition of the equipment in the technological process.

Another device that determines the cleanliness of threads is the AOPN-5 photocell-based device. In the photocell method, defects are detected based on the passage between a different type of photocell (vacuum, phototriode, photoamplifier, etc.) and a light source. For example, device defects divided into: large thickening, threads with a diameter of 1.5, thickening, threads with a diameter greater than 1.5 and a length of more than 10 cm; super thickening, threads larger than 2 diameters: thinning threads less than 0.6 diameter and threads less than 0.6 diameter with a length of more than 10 cm. In addition, devices with capacitive sensors are used to determine and control the cleanliness of threads. The test leads are passed through

the plate capacitor, resulting in a change in its resistance. The resistance of a capacitor is inversely proportional to its capacitance, and the larger the mass of the wire, the smaller it is.

Foydalanilgan adabiyotlar

1. Tanos.P.Pelos “Yigirish texnologiyasi va jihozlari” Darslik 2010 yil
2. T.A.G‘aniyev ’’To’qimachilik sanoatida mehnat muhofaazasi’’ O’zbekiston 1995 yil
3. Xasanov B.K. Sodiqova N.R. Iplarni to’qishga tayyorlash jarayonlarini nazariyasi va texnologiyasi.Darslik N ’’O’zbekiston’’ 2004
4. G. Mahmudova, A. Siddiqov, A. Karimov, O. Sarimsaqov— “Study of the movement of cotton particles and heavy impuritiesin the working chamber of a pneumatic cleaner” UNIVERSUM: Технические науки. ISSN: 2311-5122, Website: **https://7universum.com** February- 2021
5. G. Mahmudova, Q. Toshmirzayev “About automation of loading and unloading of cotton raw materials at cotton factory stations” ACADEMICIA An International Multidisciplinary Research Journal, ISSN: 2249-7137, https://saarj.com October 2021
6. Maxmudova G, Yo‘ldashev X, Qurbanov D “Investigation of foreign lint cleaning system technologies” PEDAGOGLAR huquqiy, tibbiy, ijtimoiy, ilmiy jurnali, www.pedagoglar.uz Dekabr 2021
7. М.М. Убайдуллаев, Г.О. Махмудова «Дефолиация-высокая урожайность» Journal of Advanced Research and Stability, www.sciencebox.uz/ May 2022
8. Ubaydullaev M.M, Makhmudova G.O “Medium fiber S-8290 and S-6775 cotton agrotechnics of sowing varieties” european international journal of multidisciplinary research and management studies, European International Journal of Multidisciplinary Research and Management Studies https://eipublication.com/index.php/eijmrms/article/view/163 MAY 2022
9. М.Н. Бабаева, Г.О. Исламова, Н.М. Каримов, О.Ш. Саримсаков Пахта пневмотранспорти қувурида ҳаво зичлиги ва тезлигининг ўзгаришини назарий йўл билан текшириш, ФарПИ илмий-техникаYU I KJ журнали, ISSN 2181-7200 May 2020

10. G.O.Maxmudova "Paxta zavodlaridagi paxta xomashyosini qabul qilish tizimini avtomatlashtirish tahlili" Fan va texnologiyalar taraqqiyoti ilmiy-texnik jurnal, Buxoro № 6/2022. ISSN 2181-8193 https://journal.bmti.uz/
11. G.O.Maxmudova "Analysis of the dynamics of moving cotton in pipes" European Journal of Emerging Technology and Discoveries ISSN (E) 2938-3617 JIF:8.925 https://europeanscience.org/index.php/1/article/view/95
12. D.U.Turg'unov, G.O.Maxmudova Paxta chigitini tashishda chigit harakatining dinamik modeli tahlili Farpi ilmiy-texnik jurnal ISSN 2181-7200 №2 2023 yil
13. D.U.Turg'unov, G.O.Maxmudova Paxta separatori uchun yangi ish organlar konstruksiyasini yigiruvchanlik ko'rsatkichi tahlili Farpi ilmiy-texnik jurnal ISSN 2181-7200 №6 2023 yil
14. G.O.Maxmudova Paxta chigitini aerodinamik usulda tashish jarayonini ishlab chiqish Farpi ilmiy-texnik jurnal ISSN 2181-7200 №8 2023 yil