

RESEARCH RESULTS OF THE DEVELOPED COTTON REGENERATOR

Kulmatov Ilkhom Tursunmuradovich

Deputy Director General JSC "Pakhtasanoat Ilmiy Markazi" (Cotton Industry Science Center) Tashkent, Uzbekistan

Kuliev Tokhir Mamaradjapovich

Doctor of Science, Director General JSC "Pakhtasanoat Ilmiy Markazi" (Cotton Industry Science Center) Tashkent, Uzbekistan

Abstract

The results of studying the working process of the developed cotton regenerator, identifies its drawbacks are described in this article. It also provides data on the preliminary study of the regenerator with an improved design of abreath-permeable bar drum, the use of which contributes to improving its technological performance.

Keywords: regenerator, fluffs, developed, cleaning effect, bar drum, research, waste.

Introduction

“Pakhtasanoat ilmiy markazi” JSC is conducting a study to determine the technological parameters of the developed cotton regenerator for extracting cotton flakes from waste cleaners [1].

The diameters of the saw cylinders for the developed regenerator were chosen to be 300 mm, based on the calculation of using used saw blades for the production of saw blades. The diameter of the removing slatted drum, since it is manufactured using a shaft from a serial brush drum with disks with a diameter of 200 mm, is chosen to be 286 mm. At the same time, the gap between the slat drum and the saw cylinders laid down in the regenerator design is 7 mm, with the possibility of reducing it to 5 mm. The diameter of the bar drum is chosen to be 300 mm, which provides the height of the bar protrusion above the pipe shaft required for effective loosening of waste of about 100 mm, as well as its compact installation in the channel connecting the inlet and outlet holes. The construction of the waste output screw with a discharge tube is completely borrowed from the serial regenerator PX.

In the PX series regenerator, the rotation speed of the saw drums with a diameter of 480 mm is 300 rpm, which provides a linear speed of the saw teeth of 7.5 m / s. In the developed regenerator, at such a linear speed of the saw teeth, the rotation speed of cylinders with a diameter of 300 m should be 480 rpm. For convenience, we accept the rotation speed of the saw cylinders equal to 500 rpm. When calculating using this method, the rotation speed of a bar drum with a diameter of 300 mm in comparison with the serial pegboard drums with a diameter of 400 mm used in cotton gin aggregates of the UXK is 640 rpm. The 286 mm

diameter slatted drum will have a rotation speed of 950 rpm, as will the 300 mm diameter serial brush drum in the PX regenerator [2].

Instead of serial lapping brushes, saw cylinders have three fixing grates with a diameter of 30 mm with gaps between them of 16-17 mm. These grates practically do not wear out, which ensures the stability of fixing raw cotton on the teeth of the saw cylinders.

The main saw cylinder after the fixing grates has 6 cleaning grates with a diameter of 20 mm with gaps between them of 40 mm, and the regeneration saw cylinder after the fixing grates has 8 cleaning grates with the same gaps.

The gaps between the saw cylinders and the fixing and cleaning grates are set to 15 mm, as in the standard equipment.

The experiments showed that the regenerative effect of the developed regenerator was 95 %, and the cleaning effects, due to the exclusion of the transit of weed impurities and an increase in the frequency of cleaning, were significantly higher: the total was 85-90%, for large litter 90-95%, for small litter 80-85%, for uluk 50-70%. At the same time, the content of raw cotton flyers in the waste of the developed regenerator was no more than 2-4%, which corresponds to the same indicator of the serial RH regenerator, and the clogging of regenerated flyers was 10-15%. However, there was some accumulation of incoming waste at the other end (closer to the outlet pipe) of the cotton regenerator. The experiments showed that the regenerative effect of the developed regenerator was 95 %, and the cleaning effects, due to the exclusion of the transit of weed impurities and an increase in the frequency of cleaning, were significantly higher: the total was 85-90%, for large litter 90-95%, for small litter 80-85%, for uluk 50-70%. At the same time, the content of raw cotton flyers in the waste of the developed regenerator was no more than 2-4%, which corresponds to the same indicator of the serial RH regenerator, and the clogging of regenerated flyers was 10-15%. However, there was some accumulation of incoming waste at the other end (closer to the outlet pipe) of the cotton regenerator [3].

To prevent this disadvantage, the construction of the breath -permeable bar drum of the cotton regenerator has been improved (Fig. 1).

Improving more uniform and without clusters of layer supply to the saw cylinder incoming waste under the influence of the rotary drum, the drum made the auger shaped, or rather rod, the drum is divided lengthwise into three equal parts, two elementary parts assembled screwforming, and the third part is made according to traditional forms. In the first part, the pitch between the bar drums has a pitch of 74 mm, and in the second part, the pitch is 1.5 times less than in the first part. Preliminary studies have shown that the use of an improved construction of the air-permeable bar drum of the cotton regenerator increases its technological performance by 5-10 %. Currently, research work is underway to substantiate the main parameters of the cotton regenerator.

