

## CREATING AN ADDITIONAL DEVICE TO ACCELERATE THE OUTPUT OF SEED FROM THE WORKING CHAMBER OF THE 5DP-130 SAW

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### **Abstract**

This study aims to improve the efficiency of seed output from the working chamber of the 5DP-130 saw by designing and implementing an auxiliary acceleration device. Efficient seed extraction is critical for agricultural productivity, and this project seeks to optimize the process by augmenting the saw with an additional mechanism. Through careful consideration of design factors such as mechanism selection, integration with the saw, compatibility with different seed types, and efficiency and safety measures, the goal is to enhance overall operational efficiency and throughput. This research contributes to advancements in agricultural processing technology, offering a practical solution to streamline seed extraction in the 5DP-130 saw.

In this article, we made changes to the seed comb of the 5DP-130 chainsaw genie. In this case, we can increase the productivity of the gin equipment and seed output to a certain extent, and it also allows us to control the density of raw materials.

**Keywords:** raw materials, seed, density, seed comb, gin, 5DP-130.

### **Introduction**

The 5DP-130 saw plays a pivotal role in agricultural processing, but the rate of seed output from its working chamber can be a bottleneck in achieving optimal productivity. This project addresses this challenge by proposing the development of an auxiliary acceleration device. By seamlessly integrating this device with the saw,

the aim is to expedite the seed extraction process, thereby maximizing efficiency and throughput [1-3].

The Saw gin is the main technological machine of the cotton ginning plant, and its task is to separate the cotton fibre from the seed. Sawing gins mainly separate medium fibre cotton from fibre. Depending on the number of the working chamber, they are divided into one-chamber and two-chamber demons (Moss Gordin company). In order to separate the fibre from the saw tooth, the gins are mainly equipped with brushes and air apparatus. In addition, depending on the location of the saw cylinder in relation to the horizontal axis, the air apparatus is divided into upper and lower fibre separators [4-7].

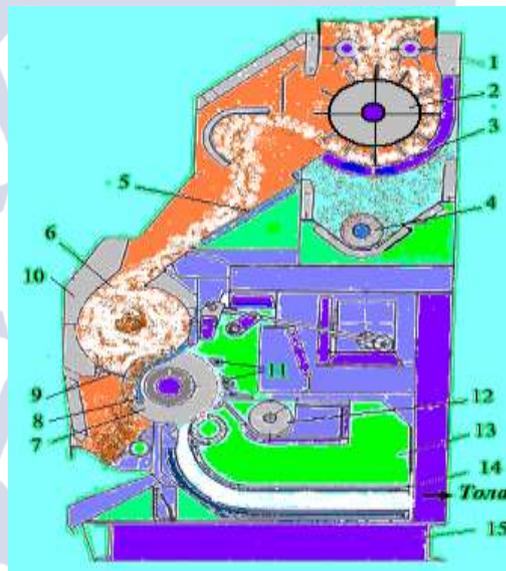


Figure 1: Cross-section of the 5DP-130 demon

1. Supply rollers
2. Pile drum
3. Mesh surface
4. Dirt auger
5. Chute
6. Working chamber
7. Saw cylinder
8. Coulter
9. Seed comb
10. Front apron
11. Coulter grid
12. Waste transfer screw
13. Air chamber
14. Fibre transmission pipe
15. Frame (base).

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and one of its main useful aspects is that it increases the seed output from our equipment by a certain percentage and also controls the density of the raw material. depending on the density of our seed, if its density exceeds the norm, our seed comb opens automatically according to the density of the raw material and accelerates the output of the seed, bringing the density of the raw material to the norm.

### Summary

In this article, we have designed the sawing gin equipment by improving the seed comb to be economically profitable and to obtain the seed output at a low speed. can also be applied to gins we think that we have achieved at least a partial acceleration of seed production and we think that we can achieve better fibre quality than the previous situation in our proposed saw gins. This project focuses on enhancing the efficiency of seed output from the working chamber of the 5DP-130 saw by designing an auxiliary acceleration device. Efficient seed extraction is crucial for agricultural productivity, and this study aims to optimize the process by integrating an additional mechanism with the saw. Key considerations include selecting an appropriate mechanism, seamlessly integrating it with the saw, ensuring compatibility with different seed types, and prioritizing efficiency and safety. By addressing these factors, the auxiliary device aims to expedite seed extraction, thereby improving overall operational efficiency and throughput in agricultural processing. This research contributes to advancements in agricultural technology by offering a practical solution to streamline seed output in the 5DP-130 saw, ultimately benefiting agricultural productivity and efficiency.

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