

2SB-10 IMPROVED DRYING EFFICIENCY BY IMPROVING THE INTERIOR OF THE DRYING DRUM

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Abstract: In cotton ginning enterprises, 2SB-10 drying drum is mainly used for drying seeded cotton. By changing the inner part of the 2SB-10 drying drum, the seeded cotton can be more tightly packed and the seeded cotton drying efficiency is increased.

Keywords: 2SB-10 drying drum, shovels, IICH-1.9, TG-1.5, SBO, SBT, pneumatic supply, electric motor, reducer, screw conveyor, VVD-8 fan.

Cotton drying equipment is designed for drying cotton with a moisture content higher than that specified in UzRST 615:2008. It is advisable to dry cotton in drum-type drying equipment. Drying equipment is installed at cotton receiving points for long-term storage of cotton before ginning and at cotton ginning plants for drying in preparation for receiving finished products from cotton [1].

Currently, drying drums of 2SB-10, SBT and SBO types are provided for drying seeded cotton in cotton mills and drying-cleaning departments and cleaning departments in cotton ginning enterprises. To ensure continuous operation of these drying drums, they are equipped with heat supply, transport device and supply systems. Seed cotton is fed into the drying drum together with heat (drying agent) using a feeder. Due to the rotation of the drum, the seed cotton rises to a certain height and is dried due to mixing with the drying agent as a result of falling. The used drying agent goes out through the transmission shaft [2].

Heat can affect wet cotton in three ways:



- a) Due to the process of mixing with hot air during the spilling of seed cotton from drum shovels;
- b) Due to the effect of heat on wet cotton falling between the shovels and on the shovels through the outer surface of the shovels;
- c) Due to the transfer of the heated parts of the drum and the heat of the drum to the seeded cotton.

The main working parts of the 2SB-10 drying drum are a pneumatic supply, a hot air transfer pipe, a guide surface, a drying drum, shovels, a used air exhaust shaft, a cotton discharge chute with dried seeds, an electric motor, a reducer and supports [3].

In recent years, TG-1.5 and ICh-1.9 heat generators have been used for drying cotton efficiently. By improving the drying drum 2SB-10, compared to the currently used form, the amount of screening and drying of large-seeded cotton will increase by a certain amount. The 2SB-10 drying drum has 12 blades, which are located inside the outer part of the drying drum with a diameter of 3200 mm and a height of 500 mm.

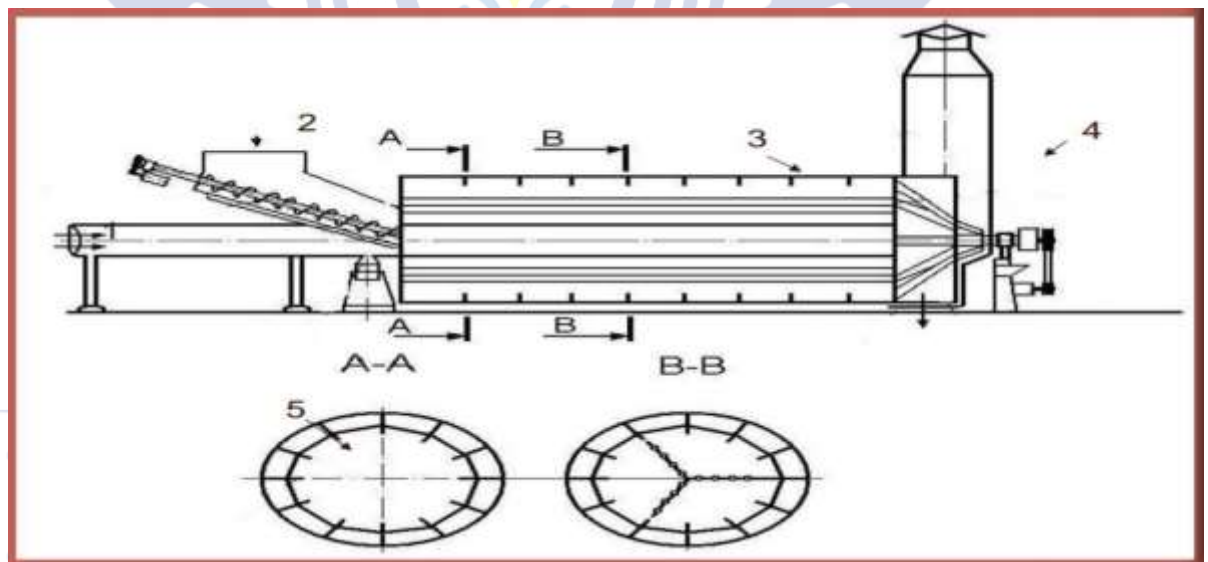


Figure 1. 2SB-10 Scheme of the drying drum [3].

Cylindrical piles 200 mm long are installed on the shovels of this drying drum. This ensures that more warm air reaches the seeded cotton than before due to the



increase in the degree of creasing, and it is the basis for the additional 2-3% moisture reduction in the seeded cotton.

Conclusions

In conclusion, it should be said that the difference of our proposed 2SB-10 drying drum with modified internal shovels from the current design is that compared to the current 2SB-10 drying drum, the seeded cotton is more crushed and dried. efficiency is 2-3% higher. This makes it possible to increase the efficiency of seed cotton drying without changing the amount of heat supplied.

References

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