Scraper sheller design

Sunflower shelling machine can replace manual shelling, greatly improving sunflower shelling efficiency. To solve the problems of unstable machine performance, poor adaptability, poor versatility and low utilization of sunflower sheller, a scraper type sunflower sheller was designed. The rotational speed of the rotating shaft components and the power of the sheller were calculated. The electromagnetic speed regulating motor was selected for belt drive and the rotating shaft was designed. By using microwave drying machinery and different sizes of concave screen, the universality of sunflower sheller is improved, and the adaptability and utilization rate of sunflower sheller are also improved. Because the controller of electromagnetic speed regulating motor has speed negative feedback system, the motor can be made.

The output speed is basically unchanged, which improves the stability of the performance of the sheller during operation. The scraper sheller has impact during operation, so the critical speed of the rotating shaft component is checked. The results show that the structure of the designed rotating shaft component is reasonable, and its running speed is lower than the minimum critical speed of the rotating shaft component. Value.

Sunflower is a highly competitive oil crop and an important foreign exchange earning agricultural product in China. China is the world's largest exporter of sunflower, ranking first in the world in total output, and occupies an important position in the world's sunflower production and international trade. Shelling is a necessary process for sunflower before eating, processing and planting. The traditional sunflower shelling method is shelling by hand, with low efficiency and heavy labor, which seriously affects economic efficiency. Sunflower sheller is a kind of shelling machine which removes the shell of sunflower fruit to get sunflower kernels. Compared with manual shelling, it can greatly improve the efficiency of sunflower shelling.

However, due to the physiological characteristics of sunflower itself, it is impossible for sunflower shelling to be combined with field harvesting, and only after the moisture content of sunflower fruits has been reduced to a certain extent can it be shelled. At present, the shelling rate of sunflower shelling machinery is low in technical performance and operation links. After shelling, the breakage rate of nuts is high, the loss is large, the machine performance is unstable, the adaptability is poor, the versatility is poor and the utilization rate is low.

Aiming at the problems of unstable machine performance, poor adaptability, poor versatility and low utilization of sunflower sheller, this paper designs a scraper type sunflower sheller. By improving the existing technical scheme, the stability, adaptability, versatility and utilization of the sheller are improved. The design scheme is also given. And the design parameters have great reference value for the design of other sunflower shelling machines.