

Direction - Mechanical engineering
SPIRAL SEPARATOR OF BULK MATERIALS

Purpose and scope

The spiral separator is intended for separation of bulk materials into fractions or their mixtures into components in size or shape. The spiral separator can be used for separation of cereal mixtures, seeds, cereals and other agricultural materials, as well as raw materials and finished products in the food and processing industry.

Key features, the essence of the development

The rotation of the spiral working surface of the separator results in the movement of a loose material (mixture) along it, during which the material is stratified and the required fraction (component) as a result of the action of the centrifugal force passes through the apertures of the perforation of the spiral surface. The perforation is made with different sizes or different shapes along the spiral working surface. The spiral working surface divides the loose material (mixture) into several fractions (components). The spiral working surface provides the mobility of bulk materials with different physical and mechanical properties, which intensifies the separation process.

The design of the spiral separator provides a high degree of separation of 98-99% of bulk materials with different physical and mechanical properties without damage to them, with the possibility of separating one pass for several fractions (components).



Comparison with world analogues, the main advantages of the development

Application of the spiral separator of the proposed design in comparison with the world's analogues provides a high-quality separation of bulk materials at a lower metal concentration and energy intensity of the process.

Main advantages of the spiral separator: the spiral separator is compact, easy to operate, has a simple drive, which allows it to be used as a stationary machine or equipment of harvesting combine of various crops.

Intellectual property protection status

Five patents of Ukraine were obtained for the spiral separator.

Market demand

The separation of bulk materials is one of the most common processes in various industries, which determines the demand for development in agro production, processing and food industry.

The state of readiness of development

An active prototype of the spiral separator was made.

Coordinators for communication

Dudarev Igor, 43018, Ukraine, Lutsk, Lvivska st., 75, Lutsk National Technical University

E-mail: i_dudarev@ukr.net

