

Methods for classifying grain material in a drum with auto-oscillating loading to internal chamber, rotating about a horizontal axis, comprises feeding the material into the drum chamber, removing the fine fraction through a screening surface by passing the fine fraction through a layer of material to the surface, allowing the fine fraction particles to pass through calibrated openings in the surface while the openings self-clean, and removing the coarse fraction from the chamber. In this process, the granular feed is subjected to a pulsating motion with a variable amplitude across the chamber cross-section. The removal of the fine fraction through the screening surface is carried out by inducing self-excited oscillations of the feed in a rigid mode.