

JACKRABBIT's Lower Dust Harvester With Constant Race Technology

Nut growers are all too familiar with the situation. Harvest time comes, dust clouds grow, air quality declines and complaints rise.

Dirt+Energy=Dust. Reduce the dirt and/or energy and you get lower dust.

Jackrabbit's new harvester is specially designed to let the grower impact both dirt and energy. A twin-rod pickup belt, common to the industry, is the first line of defense sifting some dirt as the nuts are picked up. A radically new, disk based cleaning section provides agitated conveyance of the product to the outload belt, also a twin rod. Along the way, a hydrostatically controlled fan permits the grower to adjust the variable exhaust fan's speed to clean product with the minimal airflow necessary.

The cleaning section is an important innovation. The disks, which are patent pending, are mathematically designed to maintain a constant gap between disks on adjacent shafts even as they are spinning. We call this "Constant Race" Technology. This agitates the product stream while conveying it to the outload chain. Agitating the product causes more dirt to fall out before reaching the exhaust fan which can impart a massive amount of energy and create the dust clouds associated with nut harvesting; Less dirt=less dust. The constant gap between naturally resists jamming. With no gap opening or closing, nothing can get wedged and no nuts can get crushed.

The disks are custom-injected molded from Acetal (ass'-e-tal). Acetal resin is a highly-crystalline engineering thermoplastic for high load mechanical applications, such as gears, guides, door systems, and conveyors. It combines low friction and high wear resistance with the stiffness and strength needed in parts designed to replace metal. It provides a wide operating temperature range (-40°C to 120°C), and good mating with metal and other polymers, as well as dimensional stability in injection molding operations.

The cleaning section is driven by a single hydraulic motor and kept in time by a set of driven metal gears and specially engineered plastic idler gears. The gears eliminate the wear and stretching of a chain and sprocket system.

The idler gears are made of a cast and machined Nylon-12 material specially formulated with Molybdenum Disulfide and an oil lubricant in the material matrix. The MoS2 provides higher compressibility and the lubrication which cannot dry out, drain out or spin out results in a low friction environment. This permits the use of gearing to manage precision timing without a messy oil bath.

Jackrabbit's twin rod belts and "Constant Race" agitated conveyance reduce the dirt. Combined with a hydrostatically controlled variable fan, Jackrabbit's new harvester puts into the grower's hands all the mechanical tools to reduce dust during the pickup operation.

Jackrabbit is an OEM manufacturer of agricultural equipment located in Ripon CA. For more information, contact Danny Thomas at danny@jackrabbit.bz or 209-373-9932.