

UDC 631.363.2**LUBRICANTS FOR THE MAIN COMPONENTS OF PELLET PRESSES**

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Wood is becoming increasingly important as a fuel worldwide. Wood pellets are considered a true replacement for fossil fuels. Both private and public entities are increasingly switching to the use of wood pellets for heating as a substitute for petroleum products, a trend supported and encouraged by European governments.

Providing the domestic wood processing market with high-quality lubricants is a priority.

Lubricants for Pellet Mill Gearboxes. Large industrial pellet mills operate continuously and under maximum loads. This operating mode is only possible with trouble-free operation of the gearbox bearings, which is ensured by high-quality transmission oils and a fault-free lubrication system.

Pellet mill gearboxes are subjected not only to constant loads but also to a number of adverse factors:

- high temperatures;
- heavy dust;
- humidity.

All these conditions increase the demands on the transmission oils used. Granulators operate at fairly high temperatures. The housing can reach temperatures of up to 90°C, so it's recommended to use oil that operates in temperatures ranging from -30°C to +100°C. To prevent the oil from overheating and losing its density, a gear pump station circulates it through an air cooler. Another station circulates the oil through bearings located above the oil bath.

Key characteristics of granulator gearbox oils:

- High extreme-pressure properties;
- Anti-corrosion properties;
- Anti-friction properties;
- High kinematic viscosity;
- High flash point.

Gearbox oil must maintain high load-bearing capacity in steel gears, as well as in bearing lubrication systems using oil mist and splash lubrication, and must possess thermal and oxidative stability and anti-friction properties.

Oil is changed according to the schedule in the lubrication chart or when its properties deteriorate or completely disappear.

Lubricant for husk granulator rollers. The lubricant supply to the rollers must be continuous, using mechanical and pneumatic stations with

plunger pumps.

During pellet production, the product is moistened (by approximately 10%), requiring high anti-corrosion properties for protection. Rollers constantly operate in dusty conditions, and the mechanical stability of the lubricant must ensure adequate sealing, as bearing reliability and service life are directly affected by contamination. High kinematic viscosity is essential here, as the roller operating temperature reaches 100°C.

The rollers are treated with a high-viscosity, low-speed grease, VG500, made with base oils and a lithium complex thickener, designed for the extreme conditions of roller bearings. It offers a stable structure under high-temperature, shock, and vibration conditions, and excellent flow through the lubrication channels.

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