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Res. Agr. Eng.

**D. Herák, V. Šleger, R.
Chotěborský, K.
Houška, E. Janča**

kinematical characteristic of mechanical frictional variable speed drive

Res. Agr. Eng., 52 (2006): 61-68

The paper describes a new system of mechanical spherical conical friction drive. In the present a row of simple friction, belt, chain, wave and differential variable speed drives is published. For the required range of speed variation they are altogether unfit. The currently used power transmissions are of low efficiency (60– 70%). Therefore the better power transmission efficiency is required. The possibility of multicontact power transmission appears as the most suitable principle of the power transmission. Using the designed function model, which was made according to the small tractor producers requirements, the real output kinematical characteristic was measured. It is derived the complete drive conversion unit kinematics and the theoretical kinematical characteristic design. The theoretical design is compared with the real

characteristic determined by measuring using the test station. From the measured values we determined that the geometrical characteristic, i.e. the relation between output speed and ring position, corresponds in the ring position range $(2.8 \div 14)$ mm to the theoretical premise.

Keywords:

variable speed drive; friction drive; kinematical characteristic; kinematical design

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