

## ***INNOVATION TECHNOLOGIES OF DETAILS' HARDENING***

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The efficiency increase of replacing parts of agricultural machinery (Drome) is one of the most difficult tasks of agricultural machinery, service and maintenance production. As the practical experience shows it is necessary to use the integrated approach to solve that task, taking into consideration many other indicators of the factors, such as metallurgical, operational, testing, design, tribotechnical, technological, dimensioned construction, environmental and economic.

The prognostic analysis shows that the steel bars in the foreseeable future will remain the manufacturing material of Drome. The potential of steel as a material for agricultural machinery is not fully used up. The use of steel with low and regulated hardening capacity (55PP, 60PP, 55RP, etc.) has a practical value in relation for Drome production. At the moment the domestic materials and technologies for hardening different Drome designs are developed and tested within production conditions.

The technical basis of Drom hardening technologies is the impulse hardening cooling liquid. The main purpose is to obtain ultrafine grains (~ 1 micron) of the matrix, reaching high strength and hardness, but not the transition zone of viscosity reduction.

The external surfaces of Drome friction, having a dispersed structure of martensite, also have high mechanical and tribological properties: hardness 60 HRC; resistance not less than 2000 MPa, impact strength more than 1 MJ / m<sup>2</sup>; the coefficient of relative abrasive wear resistance at least 3.0-3.5.

Drome constructed in accordance to the established technologies according to the technical standarts is competitive in comparison with the best foreign analogues.