

CONTRIBUTIONS TO THE OPTIMIZATION OF THE ASSEMBLY OF WORKING PARAMETERS OF TURNING OF THE ROLLING MATERIAL

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Acting upon the parameters of the ways of splintering and upon the technologies of work, we can diminish the complex characteristics of the working process that were used in order that we obtain minimum effects regarding the main phenomena that accompany the splintering – use, plastic deforming, forces, splintering temperature, vibrations etc.

Knowing the size of the plastic deformations during the splintering is very important for obtaining the best results and the best conditions of work. The consumption of tools, of power, the cost and the productivity depend on these sizes.

To appreciate the size of the plastic deformations, we use methods that can be: experimental, analytical or theoretical and experimental [40]. There is a category of methods that can apply during the working process, others by the instantaneous stop of the splintering. The observation and the analysis of the splinters, measuring of the splinters, measuring of the forces are methods used to determine the plastic deformations in examining the processes of splintering.

The complex phenomena that appear during the process of splintering can be studied both theoretical and experimental. In the case of the experimental study, we have to obtain, in the end, certain conclusions in the form of tables, curves, relations.

The obtained tables contain the results of the experiments and can be interpreted directly, by seeing the variations of certain functions to the modification of certain variables.

On the basis of the present degree of research regarding the rolling material elements [3, 14, 20, 27, 30, 37, 38, 40, 43, 44, 55, 59, 69, 70, 75, 78, 79, 90, 91, 124, 134], of the conclusions, as well as of the demands imposed by the beneficiaries and the conditions of research and experimentation, we observe that for studying rigorously the dynamics of the splintering processes, we need to know, besides the real values, the medium values and the laws of variation of forces, of roughness, of the variations of the use of the splintering material in comparison with the types of splintering materials.

For this aim of the research to be possible to be realised, we considered necessary and opportune, mainly, the following directions of study:

- systematic approach of the turning process with round splinter plates of CSM of certain materials used to fabric the monoblock wheels for the railway wagons, materials obtained from S.C. SMR S.A. Bals (steels type GOST, AAR, UIC, R19, BV);
- the definition of the parameters and technological characteristics that determine the working process;
- the mathematical and experimental modelation of the working process;
- the definition and determination of some restrictions and indices of process regarding the sizes of the splinter, the roughness of the surfaces, splinter forces, the size of the use of the splinter part;
- the establishment of the influence of the main parameters on the technological characteristics of the working process;
- the discovery of the best parameters and the elaboration of some recommendations regarding the practical use of the results of the research.