PROCESS FOR TREATMENT SURFACE BY USING GRANULAR VIBRO-IMPACT

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ABSTRACT
Vibrating strengthening processing (VSP) is a mechanical or mechanochemical process of smoothing of asperities due to their plastic deformation of particles of the working environment. Process is accompanied by a consistent application of the surface details of a large number of particles microimpact working environment for their mutual collisions and sliding. Strokes are caused by the action of vibration tells the camera. Scheme of vibratory processing is presented in figure 1.

Fig.1 - The diagram of the machine tool for VSP

Keywords: Frequency, Vibration, Amplitude, Roughness, Surface Hardening.

INTRODUCTION
Improvement of products quality is difficult to get a development in mechanical engineering field. These preventions can be avoided by introducing new processes, which include a surface treatment by vibration to result a superficial plastic deformation by granular flexible particles. Recently, these procedures are useful and reliable in different stages of industries when high surface quality requirements. Present work focused and based on an experimental model can be used for strengthening and in surface finishing process by granular flexible particles, which that enhance the quality of the surface layer for the test pieces. The resulting model allows representing each index as a function of initial data setting, which are: material properties and controlling process parameters. These relationships give as an initial step to determine the optimum process parameters.

During production series, the surface finishing process and strengthening treatment for granular test pieces are present. It should be noted that the treatment is based on plastic deformation of a thin surface layer (finishing-hardening treatment) with a granular flexible working environment. When compared with other methods of surface treatment finishing, it
shows a number of advantages: preserves the integrity of fibers and metal formed fine-grained structure in the surface layer, there is no bile work surface and there is no thermal defects, allowing for stable surface; provided an opportunity to achieve the minimum altitude surface roughness parameters as heat-treated steels, nonferrous alloys, and high-strength materials, create a favorable form of asperities with a large share of the bearing surface at the level of asperity; favorable compressive residual stresses in the surface layer, gradually and steadily increased the micro hardness of the surface. As a rule, strengthening processing by the flexible granulated working environment (SP FGWE) does not require application of the complex equipment and equipment. SP FGWE details of varied forms and the sizes, made of various materials can be exposed.

CONCLUSION
VSP, used for achievement of strengthening or stabilizing effect, the is carried out mainly in the environment metal and firm alloy.

VSP is a universal method of processing. Most felt its advantages at processing details of complex shape, as well as at hardening the big party of details of the small sizes. Thus uniform hardening a thin superficial layer of all elements of a detail, furnish and a rounding off of sharp edges, smoothness of transitions is reached.

REFERENCES