

ATTEMPTS OF BURNISHING FREE FORM SPATIAL SURFACES USING CNC MILLING TOOLS

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Abstract: *Following paper presents results of attempts of burnishing complex 3D surfaces with CNC milling machines using in first operation toroidal cutting tool and then thrust ball burnishing with spring-actuated pressure. Complex spatial surfaces was simulated by planes tilted with angle 30 and 60 degrees against milling tool table. Using different technological parameters of milling and burnishing 216 different burnished surfaces was obtained on 36 milled surfaces. In each case SGS (Surface Geometry Structure) was measured. Results show that using proper technological parameters of milling and burnishing roughness can be reduced to $R_a=(0.2\div0.4)\mu\text{m}$. Improperly selected parameters can be cause of worsen of SGS. Also an attempt of milling and burnishing of “bowl” using different strategies of burnishing was shown. The directions of work on burnishing tools was also indicated.*

Key words: *Burnishing; milling; free form 3D surfaces*



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