RESEARCHES REGARDING THE INFLUENCE OF THE PIECE SPEED ROTATION ON THE QUALITY PARAMETERS OF PROCESSED SURFACES THROUGH COLD PLASTIC DEFORMATION

Constantin Cărăuşu[1], Octavian Pruteanu[1], Ionel Sarbu[1], Radu Coman[2] & Valerică Huşanu[3]

[1]Technical University "Gheorghe Asachi" of Iasi-Romania, Department of Machine Manufacturing Technology
[2] Winterthur Technology Group – U.S.A.
[3] *S.C. Rulmenti SA Barlad*

Corresponding author: Octavian Pruteanu, pruteanu@tcm.tuiasi.ro

Abstract: This paper presents the results of the theoretical and experimental researches obtained at the processing through cold plastic deformation of the means of bearing rings rolling. It is being presented the influence of the piece speed rotation on the quality parameters: roughness, oval shape and circularity of processed surfaces. Experimental results show that increasing piece speed rotation increases the ovality shape and surface circularity. For speed values comprise in domain 80-95 rot/min, roughness decreases with the piece speed rotation increasing. The roughness varies in a very restricted area, 0.03 µm; the oval shape varies in very close limits, 0.09 mm; the circularity also has variations in a very restricted area of around 12 µm.
Key words: cold plastic deformation, speed rotation, bearing, roughness.