

Influence the effect of balancing the grinding set on the accuracy and roughness of the machined surface

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The article examines the effect of balancing the grinding wheel set on the accuracy and roughness of the machined surface during the production of cutting tools. Screw drills with a diameter of 12 mm were manufactured as well as samples in the shape of a recess with a width of 20 mm and a diameter of 18 mm. The workpiece material was sintered carbide (WC+Co). Properly balanced and unbalanced sets of cubic boron nitride (CBN) and synthetic diamond grinding wheels were used in the production of the tools and samples. A WZS 60 Reinecker tool grinder was used as the machine. The parameters of surface roughness and dimensional accuracy were measured in the experiment. Surface roughness was evaluated on a Zeiss Surfcot 5000 shape and contour measuring machine. Dimensional accuracy measurement was performed on an optical measuring machine Zoller Genius 3. In terms of dimensional accuracy, tools and samples produced by wheel balancing to a lower level of balance quality G show greater dimensional inaccuracy than tools and samples produced by wheel sets that were balanced to a higher quality level of balance G. From the point of view of evaluating the surface roughness, the results were not clear, but the tools and samples produced by CBN grinding wheels showed better surface roughness, regardless of the quality level of balance G.

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