

Analysis of the Theoretical Values of Several Characteristic Parameters of Surface Topography in Rotational Turning

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Abstract : In addition to the increase of the material removal rate or surface rate, or the improvement of the surface quality, which are the main aims of the development of manufacturing technology, a growing number of other manufacturing requirements have appeared in the machining of workpiece surfaces. Among these, it is becoming increasingly dominant to generate a surface topography in finishing operations which meet more closely the needs of operational requirements. These include the examination of the surface periodicity and/or ensuring that the twist structure values are within the limits (or even preventing its occurrence) in specified cases such as on the sealing surfaces of rotating shafts or on the inside working surfaces of needle roller bearings. In the view of the measurement, the twist has different parameters from surface roughness, which must be determined for the machining procedures. Therefore in this paper the alteration of the theoretical values of the parameters determining twist structure are studied as a function of the kinematic properties.

Keywords : kinematic parameters, rotational turning, surface topography, twist structure

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