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Improved Design of a Worm Type Instrument for Final Machining of Evolvent Gear Teeth

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Abstract

© 2017 The Authors. Published by Elsevier Ltd. In connection with the absence of possibility to process gear-wheels with large allowance at machining of disk shavers (for example, after the preliminary rolling-up of points), N.V. Smorkalov et al. have worked out the construction of a worm type instrument with a continuous spiral cutting edge. The limitations of this construction were unfavorable terms of cutting wedge work for lack of the structurally executed rake which resulted in the subzero treatment productivity. For simplification of the procedure, regrinding of this instrument and minimization of the nascent "organic" error at regrinding on the outward cylindrical surface, a decision was made to bring in the instrument construction developed by N.V. Smorkalov et al. of positive rake γ , form a radius ditch and two antihunt ribbons breadthways I executed on an outward cylindrical surface. Thus, threading-in of the instrument gets better in metal with shaving deformation diminishing and its tails get better, while the force and cutting power are deminished.

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Keywords

design, finish machining, gear wheel, tool of worm type

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