

Rotary Ultrasonic Machining of Ceramics Materials and Roughness Inspection Technological

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Abstract

Generally in the drilling of ceramics materials with superior properties for a number of high-temperature and demanding applications in aerospace, nuclear, automotive, and cutting tools. In this paper, rotary ultrasonic machining (RUM) is introduced into drilling holes and presents the results of a designed experimental investigation into RUM in ceramics. One limitation of the commercial RUM machines is that only circular holes can be efficiently machined. A three-variable factorial design is employed to reveal main effects as well as of three RUM process parameters (spindle speed, feed rate, and ultrasonic power). The surface roughness of the ultrasonically hole drilled workpiece were measured inspection.

The obtained resulted it can show that the application of ultrasonic vibration how can improve the holes quality.

Keywords : Rotary ultrasonic machining、Measured inspection、Ceramics