Cutting Tool Wear Monitoring

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Cutting tool wear monitoring is one of key problems in automation of machining processes. Apart from the cutting tool wear monitoring for the cutting tool change and cutting tool failure, cutting tool wear monitoring may be one of the components for the adaptive control of a machining process. This paper is focused on the design of turning cutting tool wear sensors of the system flap – jet principal with increased extend. On the geometric principles in cutting with a turning cutting tool, the relations among the output of jet mouth, clearance angle and cutting tool wear were expressed. Two variants of turning cutting tool sensors were designed and experimentally verified. The results of experiments have proved the possibility to apply cutting tool wear sensor of the system flap – jet principal with increased extend in practical use.

Keywords: Machining, Cutting tool wear, Monitoring.

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