

Reduction in Corner Dullness of Machined Microhole by EDM Using Assisting Plate

by

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Abstract

When hole and microhole machinings are carried out by electric discharge machining (EDM) using a straight electrode, the hole and microhole diameters become different at the inlet and outlet of the machined hole. This shape irregularity is caused by the wear of the electrode and debris. A method was proposed for reducing the diameter difference between the hole and the microhole by EDM using a stepped electrode. Experiments showed that the difference in diameter between a hole and a microhole is reduced by EDM using a stepped electrode but the corner dullness of the machined hole and microhole is caused by electrolysis. In a previous paper, a new method was proposed for reducing the corner dullness of a machined hole by EDM using an assisting plate. Experiments showed that the corner dullness of a machined hole is reduced by EDM using an assisting plate.

This paper describes the application of this assisting plate method to microhole machining. The following experimental results were obtained. (1) The corner dullness of a machined microhole is reduced by EDM using an assisting plate. (2) Microholes of the desired diameter and without corner dullness can be machined by EDM using an assisting plate.

Keywords: EDM, Microhole, Microholes, Assisting plate, Corner dullness

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