

The Optimization of the Spark Erosiv Removal Process – Dependencies and Benefits

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Abstract. There are numerous publications in the literature that deal with the optimization of EDM for a specific application. Due to the limitations of the plant technology, in particular the process energy source (PES), and an arbitrary parameter selection, it must be assumed that in many cases a maximum of one plant optimization has been made, which cannot be used for comparison with other manufacturing processes.

The paper shows where most restrictions and errors occur and how they influence the result. A distinction is made between permissible process parameter restrictions, which lead to a local extreme value analysis, but not to an optimization, and to impermissible process errors, which consist in not selecting the process parameters which are independent from each other. This requires a precise knowledge of the PES, the connection conditions and the regulation parameters. The PES properties can be determined by analyzing the pulse sequences, if necessary.

The aim of the optimization of EDM should always be to determine the adapted plant technology for the selected application in its process parameters. Therefore, comparisons with competing manufacturing are sufficiently possible.

Keynotes: optimization, EDM, process parameters, process energy source