
Charmilles Form 2 Lc Znc Maintenance Manual

Injection Mould Design
Electrical Discharge Machining (EDM)
Electrical Maintenance Manual
Complete EDM Handbook
Electronics Projects Vol. 20
The EDM Handbook
Product/Process Fingerprint in Micro Manufacturing

*Charmilles Form 2 Lc
Znc Maintenance
Manual*

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The continuous miniaturization of products and the growing complexity of their embedded multifunctionalities necessitates continuous research and development efforts regarding micro components and related micro manufacturing technologies. Highly miniaturized systems, manufactured using a wide variety of materials, have found application in key technological fields, such as healthcare devices, micro implants, mobility, communications, optics, and micro electromechanical systems. Innovations required for the high-precision manufacturing of micro components can specifically be achieved through optimizations using post-process (i.e., offline) and in-process (i.e., online) metrology of both process input and output parameters, as well as geometrical features of the produced micro parts. However, it is of critical importance to reduce the metrology and optimization efforts, since process and product quality control can represent a significant portion of the total production

time in micro manufacturing. To solve this fundamental challenge, research efforts have been undertaken in order to define, investigate, implement, and validate the so-called “product/process manufacturing fingerprint” concept. The “product manufacturing fingerprint” concept refers to those unique dimensional outcomes (e.g., surface topography, form error, critical dimensions, etc.) on the produced component that, if kept under control and within specifications, ensure that the entire micro component complies to its specifications. The “process manufacturing fingerprint” is a specific process parameter or feature to be monitored and controlled, in order to maintain the manufacture of products within the specified tolerances. By integrating both product and process manufacturing fingerprint concepts, the metrology and optimization efforts are highly reduced. Therefore, the quality of the micro products increases, with an obvious improvement in production yield. Accordingly, this Special Issue seeks to showcase research papers, short communications, and review articles that focus on novel methodological developments and applications in micro- and sub-micro-

scale manufacturing, process monitoring and control, as well as micro and sub-micro product quality assurance. Focus will be on micro manufacturing process chains and their micro product/process fingerprint, towards full process optimization and zero-defect micro manufacturing.

Electrical Discharge Machining (EDM)

EFY Enterprises Pvt Ltd

Electrical Discharge Machining (EDM) is one of the earliest and most widely used non-conventional machining processes. In recent years, the use of EDM has increased significantly in industries, mainly due to the extensive use of hard and difficult-to-cut materials, i.e. hardened steels, carbides, titanium alloys, nickel super alloys and so on. The EDM process is being used extensively for many important applications in die and mold, aerospace, automotive, micro-electronic and biomedical industries. As a result, extensive research has been carried out on various aspects of EDM. Taking those facts into consideration, this book aims to provide a comprehensive overview of the various types, technologies and applications of EDM. The book starts with chapters on the two major types of EDM: die-sinking

EDM and wire-EDM. Subsequently, several EDM-based hybrid machining processes, such as: ultrasonically aided EDM, powder-mixed EDM, and simultaneous micro-EDM/ECM have been discussed in detail. This book includes chapters on the detail of EDM surface and modeling and simulation of the EDM process. This book also contains chapters on the novel and innovative applications of EDM as well as machining of newer materials, such as: shape memory alloy, reaction-bonded silicon carbide, metal matrix composites, silicon based semiconductors, and non-conducting polymers. It is a useful resource for students and researchers who are planning to start their research on the area of EDM and related processes. It can also serve as a reference for students, academics, researchers, engineers, and working professionals in non-traditional manufacturing processes related industries.

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