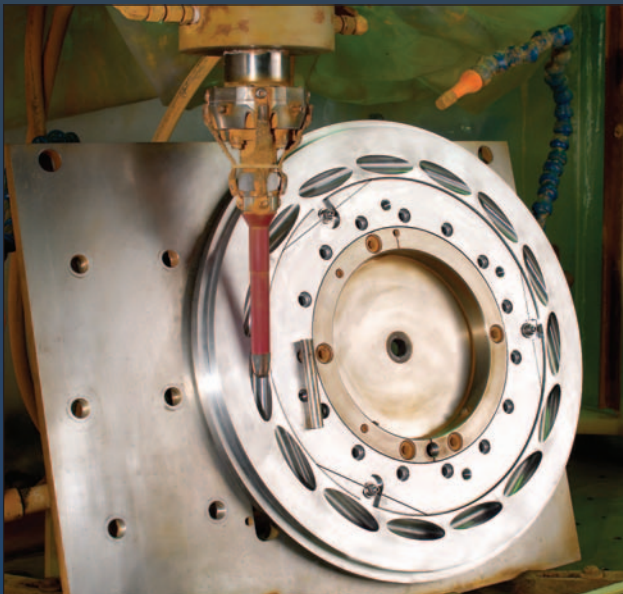
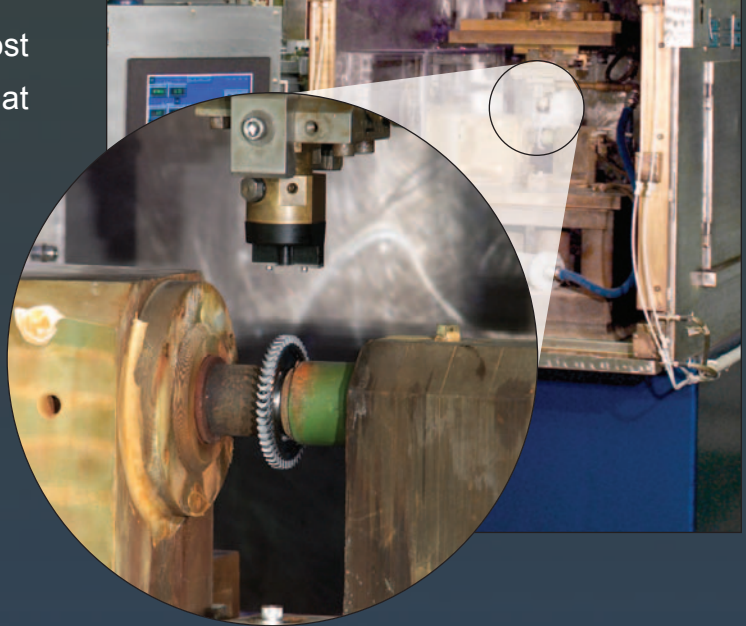


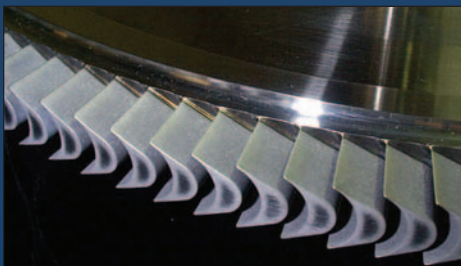
Electrochemical Machining (ECM)

Electrochemical Machining is a rapid, cost effective, stress free machining process that produces a high quality finish. It is used when complex components must be rendered from difficult-to-machine alloys. Barber-Nichols routinely machines turbine blisks, axisymmetric turbine nozzles, and various components with internal helical splines for the aerospace, energy, and medical equipment industries.



ECM Benefits

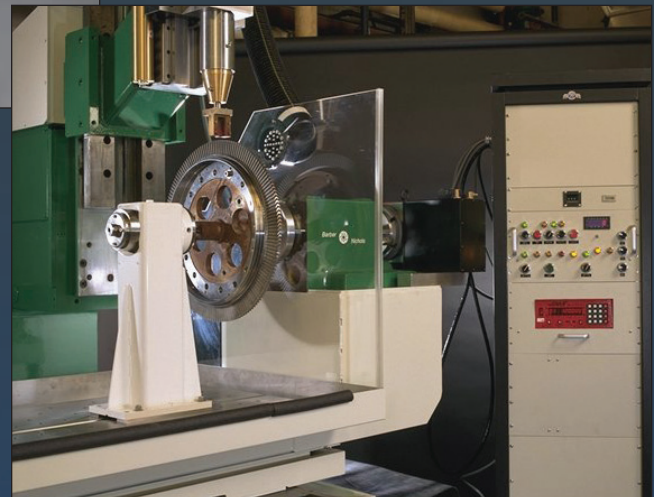
- Complex Geometric Shapes Are Quickly Rendered from Difficult-To-Machine Alloys
- Components Are Not Subjected to Machining Stress or Left with a Recast Layer
- Secondary Processes Such as Deburring and Grinding Are Eliminated
- Total Production Costs Are Minimized
- Components Can Be Machined with Extremely Flat Approach Angles





difficult-to-machine alloys such as Inconel[®], Hastelloy[®], titanium, and hardened tool steel are machined much faster than is possible by conventional methods. Internal helical splines, through-holes, trepanned configurations and other complex geometric configurations are machined with a high degree of accuracy and repeatability.

ECM is a deplating process that utilizes the principles of electrolysis. The ECM tool (cathode) is positioned close to the workpiece (anode) and a low voltage, high amperage DC current is passed between the two via an electrolyte. Material is removed by dissolution and then carried away by the electrolyte. Because the tool does not come into direct contact with the work piece, materials are not subjected to mechanical or thermal stress; additionally, the process does not produce a recast layer. Because Electrochemical Machining is a fast, single pass process which can achieve 16 μ inch surface finishes, manufacturing time is minimized and secondary processes such as deburring and grinding are eliminated. Finally,



Barber-Nichols is an AS 9100B:2004 and ISO 9001:2000 registered company and as such, product quality and customer satisfaction are top priorities. A comprehensive quality system tracks jobs from quotation to delivery. To learn more about Electrochemical Machining and how it can benefit you, please call us or visit our web site.



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