

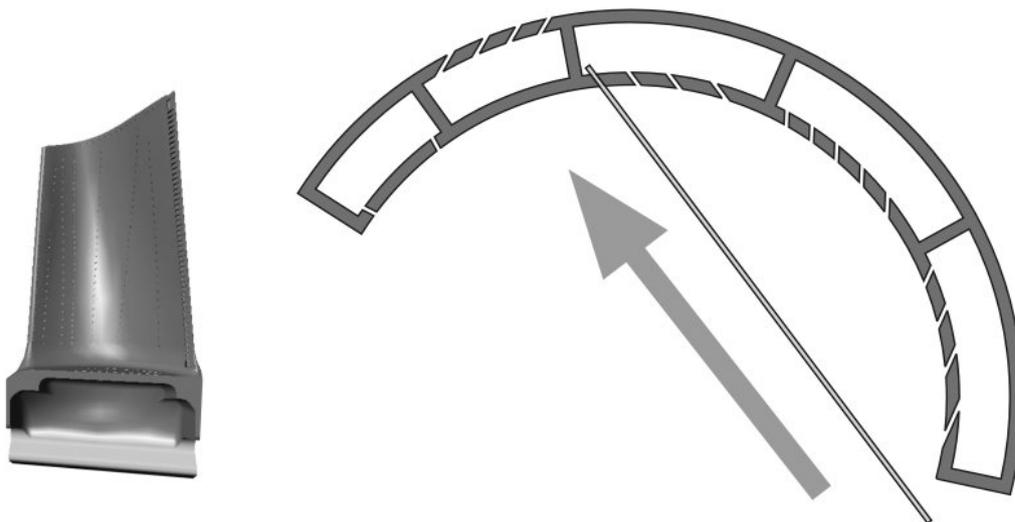
# Breakthrough is detected!

## Revolutionary new development by Heun company in the field of EDM drilling.

After a development phase of several years, Heun successfully generated a system to detect the breakthrough of the electrode, independent from the electrode wear and to initiate respective actions via the control system of the machine, to influence depth and eroding characteristics during the further drilling process.

It is a well-known, process-related problem, that the electrode is subject to varying wear during eroding and that due to this an exactly repeatable eroding depth is almost impossible. Furthermore the conditions of the eroding process are changing basically during breakthrough. This causes, that continuation of drilling during breakthrough process of about 2-3 mm can take as long as the actual drilling of i.e. 100 mm itself. This in turn has influence on the exactness of the diameter of the drilling and the geometry of the electrode regarding cone and concentricity.

Heun company has found a method to eliminate these problems. Originally this problems appeared in the manufacture of turbine blades. Well-known producers are working with the Heun machines to insert coolant holes into turbine blades with an extremely steep entry and exit angle. The task or requirement for Heun was to guarantee the breakthrough of the drilling without damage of the close rear panel, even though the material thickness is not known. This requirements cannot be fulfilled with a normal depth programming, which is used generally.



The breakthrough detection consists of hardware components with a respective intelligent software solution. This software enables several actions after detection of breakthrough of the electrode, also according to specifications of the customer.

Also under other conditions, like in tool and mould making industry, this special breakthrough detection offers considerable ease and advantages. The operator has

not to take care for the observance of the wear of the electrode any more. He only chooses one of the selectable materials, electrode diameters and strategies. Everything else is executed by the control system within a split second.

Of course, all data can also be taken over from the CAD system. Drilling coordinates up to 5 axes, work piece height, drilling depth, detailed generator data or activation of the automatic generator, as well as extensive M-functions (help functions).

Visit our team during the EMO 2007 in Hannover for more detailed information or advice.

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