

# Die erosion in a new dimension

Zimmer&Kreim introduces a brand new EDM machine genius 900 NOVA



1/ genius 900 NOVA

The „unique“ in the industry is Zimmer&Kreim based on more than 30 years experience as a specialist in the design of EDM machines. The genius series known on the market (for example with genius 700) has been steadily developed and improved over the years. Generator technology and controller are the 5th generation reliable core of all ZK machines and – like all technologies – come from Zimmer&Keim. The customers duly appreciate this; durability and reliability are precisely attributed to this combination, namely machine and control from a single source. „We were facing the question whether to continue with further reworking or start thinking

completely new“, says Klaus Kreim explaining the initial considerations of the development. New thinking is the part of the company DNA in Zimmer&Kreim. They were still among the first to redesign and implement the subject of automation in tool and mold making.

## To think new from the ground up ...

... was the motto for the development team which has now developed a completely new machine after a construction phase of just over two years. Based on the proven C-stand design; no longer made of gray cast iron but of thermosymmetrical mineral cast. The resulting relatively high

weight of the machine stand allows even faster axis movements. Furthermore, even more precise circular movement of the machine can be achieved using faster drives and optimized control engineering in combination with the mineral cast frame. The accuracy of the circle significantly determines the physically achievable maximum quality in the die erosion. The drive of the controlled C axis and the position of the coupling have also been adjusted. The goal is to shape the capacity and performance of the machine to the profile of a high-end machine. „We have set out to build the best machine in its class“, explains the plans Armand Bayer, Managing Director of Zimmer&Kreim. „We succeeded in doing so. For all customers eroding with a table size of 900 x 600 mm with 3µ on the component, genius 900 NOVA is the perfect machine“, says Armand Bayer. Of course, this power pack is also particularly suitable for those users who always have to achieve the same results, wear, time or surface quality with different materials. The interaction between ZK generator and ZK machine control guarantees optimum erosion results for all material pairs – and all previous series of machine have already proven this. Therefore, genius 900 NOVA is the perfect solution for all tasks of die sinking.

## Interaction between humans and machines

Zimmer&Kreim dealt intensively

with the question of future-proof HMI (Human Machine Interfaces) during the entire development phase. Intuitive operation – precise results: this is how our concept can be briefly summed up. So the previous genius user interface has been completely redesigned. It follows a systematic, intuitive user guidance with touchscreen in 16:9 image format based on Windows 10. The current trends of successful mobile app developments were combined with the claim of an industrial usage during development of the new interface. Just as new is the control panel, ergonomically designed and electrically adjustable in height, so that the users can always keep track even when sitting.

With the also completely newly developed hand held terminal genius NOVA, the

handling for left- and right- handers was realized via design studies as well as with a fully integrated display to make sure that specific parts of the user interface can be visualized in the set-up mode directly at the event. Now you can manually control essential operating functions and read status messages. The complete integration of the previous optional „genius transfer“ joystick into the hand held terminal genius NOVA enables users to quickly calibrate and measure quality directly on the machine as standard.

First of all, the designers have thought very much about the process security. A display in the quill casing visualizes definable status notifications when the monitor is switched off. It makes possible to have a quick look at the current process



2/ genius NOVA Interface



3/ genius NOVA Hand held terminal

continue quickly again.“ This includes numerous defined electrical plug connectors which reduce the replacement time of wearing parts to a minimum and ensure the best possible access to mechanical components during machine maintenance.

**And only ZK machines can do that**

Simply unique – the lowerable working tank: with genius 900 NOVA (as with all previous series), the dielectric fluid remains in the tank and does not have to be pumped off or pumped back into it. This is an enormous time advantage considering that some users make such changes up to 100 times per day (workpieces / electrodes). „This easily saves several hours of unnecessary idle time for the user every day“, says Klaus Kreim with confidence about this unique selling proposition. A new star on the erosion sky – this is the slogan of the launch campaign. And, indeed, all those interested can have a look at this „star“ at AMB in Stuttgart and test its capabilities. See and experience live eroding in another dimension.

without detailed knowledge of the machine. Furthermore, the side-mounted LED strips additionally indicate the production progress or the machine status. Users can also fall back upon different configurations here. When using this option, identification of the machine status can be easily done from a distance.

**Closer look at other essential details**

The machine is also equipped to protect against fine dust or difficult thermal external conditions: The entire thermosymmetrically constructed machine

and all erosion axes relating thereto are thermally monitored and, if necessary, compensated within the physical system limits. The complete electronics is dust-tight sealed and actively tempered via a water cooler. A single pressureless filter ensures an optimum quality of the dielectric fluid, easily accessible during operation and thus absolutely service-friendly. „We want that our users can work in stable process conditions“, emphasizes Armand Bayer. „For this purpose we have designed our machine in such a way that maintenance and service processes can run fast and our customers can

Machine data	<u>genius 900 NOVA</u>
Travel distance X – Y	<u>720 x 420 mm</u>
Travel distance Z	<u>350 mm</u>
Table: Length x width	<u>900 x 600 mm</u>
Distance: Table – sleeve w/o chuck max. / min.	<u>550/200 mm</u> <u>Opt.: 660/310 mm</u>
Dielectric fluid above table	<u>450 mm</u>
Overall dimensions (W x D x H)	<u>1800 x 2750 x 2650 mm</u>
Total weight (w/o fluids)	<u>Ca. 7000 kg</u>

4/ Machine characteristics (Pictures: Zimmer&Kreim GmbH & Co. KG, Brensbach, Germany)