

genius 602

genius 700

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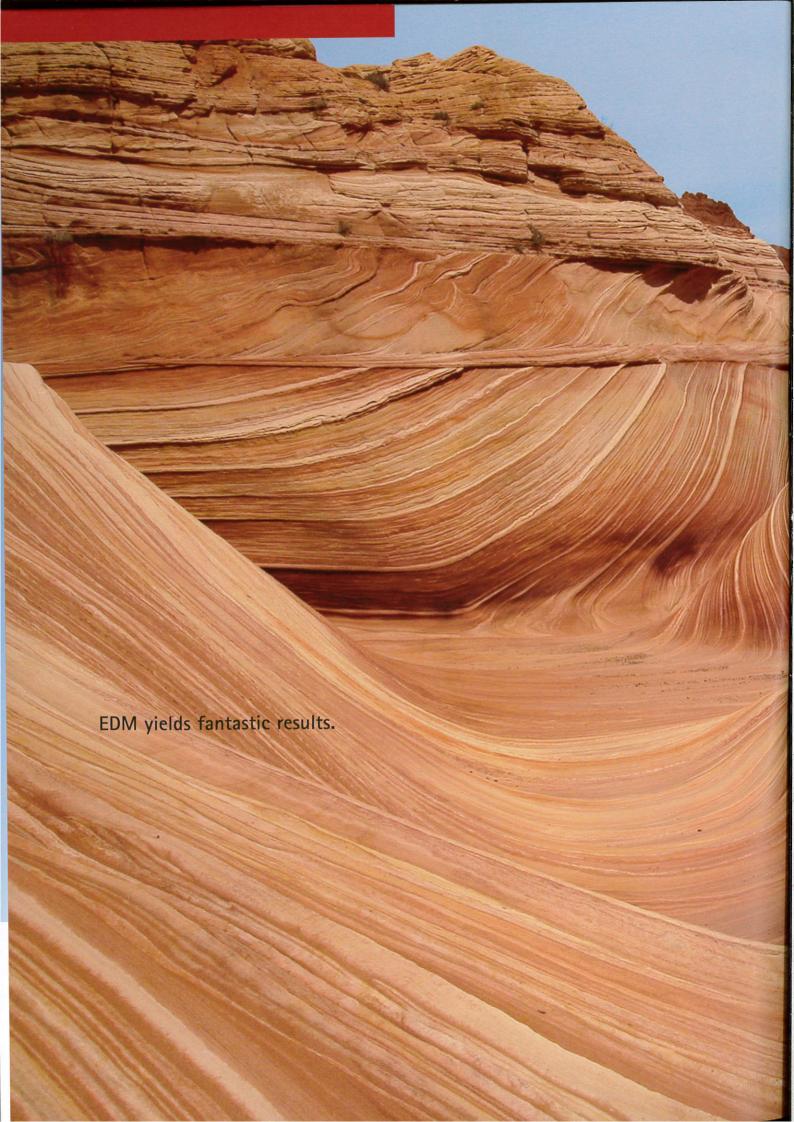
genius 850

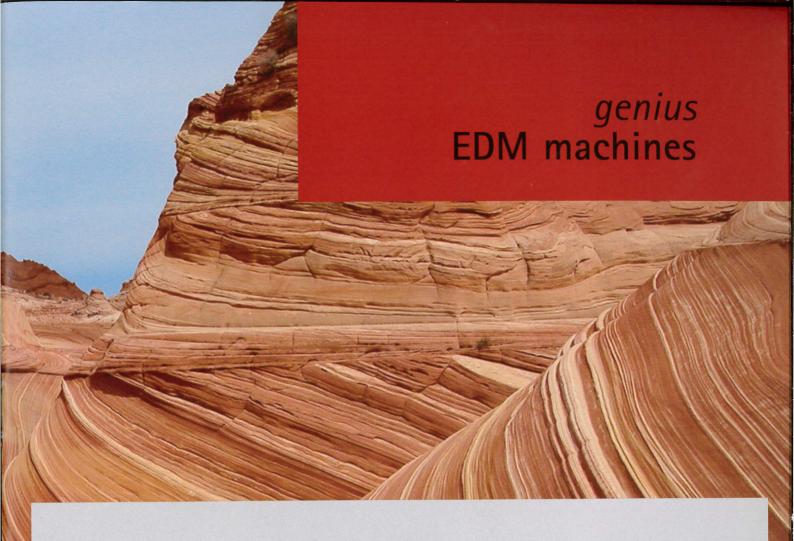


genius 1000 The Cube



genius 1200





Precision and speed - these characteristics determine the efficiency of your order processing during cavity sinking. Precision and speed - that's what the name genius stands for. Originally derived from our control system developed in 2002, it has now become synonymous with high-quality EDM machines. With the name "genius", all machines by Zimmer & Kreim prove not only the intelligence of the machine control system, but also the stability of the basic structure, the high precision and the compellingly simple programming. genius EDM machines meet the highest standards. With their compact design, they are the space-saving sensations in their respective machine class. Yet they still have all the features you need for perfect results and efficient processes in tool and mould making: a continuously adjustable work tank, easily accessible, fixed tables and - as standard issue - a C-axis.

All genius machines can be operated in manual, semi-automated or fully automated mode. Regardless of the type of operation, you can still always position the sleeve using the handwheel, without interfering with the programming. Commissioning is incredibly easy via plug-and-play. The result distinquishes the genius machines from all others. Highly customised workflows, safe handling and understanding of the system - the possible areas of use are as flexible as the tasks of your customers. This is also possible due to the completely modular design. Every genius machine is delivered in a minimum configuration so that it can then grow together with the development of your company. To do so, our systems also include other technologies and manufacturers. Integration is the key with which we are increasing process safety and efficiency in your company.



EDM machine genius 602

Are you looking for a machine that executes especially the precise, small EDM work with high long-term precision? With the *genius* 602, we offer a machine with the same control system as our large machines – and it shows in the precision. The difference: the *genius* 602 fits into every company. It is accessible from three sides, has a relatively low weight and is the most space–saving EDM machine on the market in its class. In relation to its size, it offers a maximum dielectric fluid height above the table, and the tank is integrated into the base, fully retractable and continuously variable.

The temperature of the dielectric fluid is automatically controlled via a thermostat. The rigid cast iron construction with pre-stressed anti-friction guideways avoids vibrations and thus ensures stability. Even on unstable floors, the three-point set-up ensures a continuously uniform alignment. The travel range of the *genius* 602 optimally utilises the size of the table, making the machine suitable for a wide range of tasks. In addition, it also allows you to take a first step towards automation.

genius 602 magi 3 Machine with 16-fold electrode changer Guide and drive of the x-axis 3650 mm Floor space required for the smallest automated unit

Machine data

Travel distance X - Y	350 x 250 mm
Travel distance Z	315 mm
Table: Length x width	576 x 400 mm
Distance: Table - sleeve	550/240 mm
w/o chuck max./min.	(optional 615/305 mm)
Dielectric fluid above table	365 mm
Overall dimensions (wxdxh)	(900 x 1,680 x 2,540) mm
Total weight (w/o fluids)	2,000 kg
Workpiece weight	500 kg
Electrode weight w/o rot. head	50 kg
Electrode weight w. rot. head	50 kg with man. safety
Rapid traverse speed X - Y	2 m/min
Rapid traverse speed Z	4 m/min
Resolution X - Y - Z	0.001 mm
Resolution C	0.001°
Dielectric fluid consumption	250 litres
Generator	genius magic ³
Operating current	50 A
Suction capacity	200 m ³ /h (55 l/sec)
Required cooling capacity	2.5 kW
Floor load	3.5 N/mm ²
Number of adjustable feet	3
Weight per foot	1 t
Diameter of base plate	ø 60 mm
Flow rate (air)	10 I/min
Required air pressure	min. 6 bar
T-slots: number/width/distance	4 slots/10 mm/3 x 100 mm
Paper cartridge filter	3 pcs.
Flushing device	3 Pressure ports
	1 Suction connection
	1 Fine amount pressure port
PROG <i>mod</i> EDM	Programming software

Options

Electrode changer	16-fold, 50-fold
Change system	Robot system Chameleon:
Multi-Change	All-in-one solution for all Pallet
	and electrode combinations
Sleeve system, pallet system	EROWA, 3R, Hirschmann,
	POWERGRIP, Mecatool etc.
C-module	for carbide metal working
O-module	for very fine surfaces
Flush flow regulator	15-fold
Flushing device	expandable to 14 connections
Q-axis	5th EDM axis
Rotation head	up to 700 r/min
High pressure flushing device	possible
JOB <i>mod</i> EDM	order control system
IDENTmod	Identification
Temperature compensation	possible
High pressure flushing	possible



With the *genius* 700, you will enter a new dimension of cavity sinking. High travel speed and reduced idle times – this is how the *genius* 700 provides for especially speedy processing of your orders. The ratio of table size and travel distance is unique in its class. It enables the optimal utilisation of the table. The machine offers the by far largest dielectric fluid height above the table in its class. Feeding the dielectric fluid into the continuously movable tank is quick and easy. The machine has a high rigidity with pre-stressed anti-friction

guideways. The moment of inertia of the C-axis is comparatively high at 0.6 kg/m². In addition, it has a highly accurate measuring system. Even demanding EDM processes can be carried out economically and with high precision with the *genius* 700. The "on the fly" filter replacement prevents standstill, and the central lubrication system reduces maintenance times. The *genius* 700 can be connected from two sides, making flexible positioning possible. The height-adjustable control desk is ergonomically designed and allows working while seated.

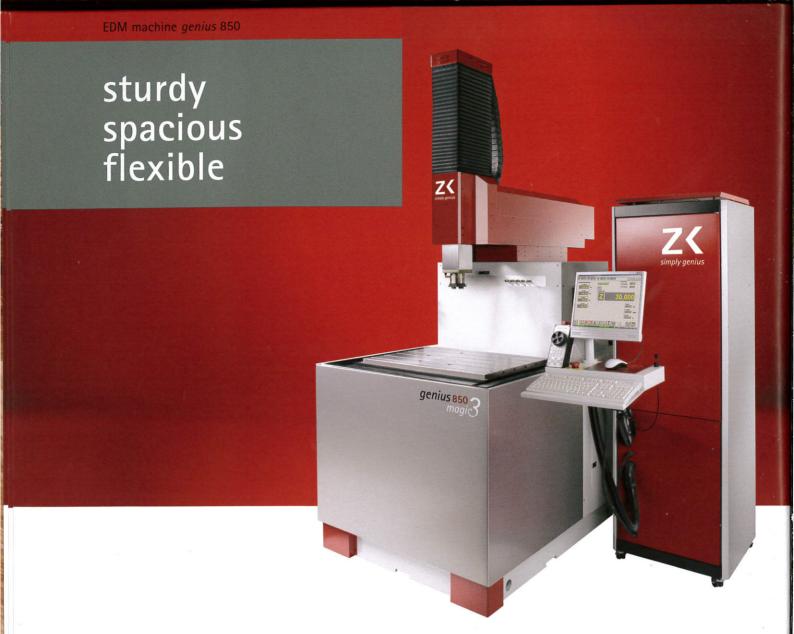


Machine data

Travel distance X - Y	400 x 350 mm
Travel distance Z	
113131313131313	350 mm 575 x 500 mm
Table: Length x width	
Distance: Table - sleeve	550/200 mm
w/o chuck max./min.	100
Dielectric fluid above table	420 mm
Overall dimensions (wxdxh)	(1,213 x 2,326 x 2,530) mm
Total weight (w/o fluids)	3,200 kg
Workpiece weight	700 kg
Electrode weight w/o rot. head	100 kg
Electrode weight w. rot. head	50 kg with man. safety
Rapid traverse speed X - Y	12 m/min
Rapid traverse speed Z	18 m/min
Resolution X - Y - Z	0,001 mm
Resolution C	0,001°
Dielectric fluid consumption	330 litres
Generator	genius magic ³ (integrated)
Operating current	80 A (+ 80 A with booster)
Suction capacity	200 m ³ /h (55 l/sec)
Required cooling capacity	2.5 kW
Floor load	ca. 2.1 N/mm ²
Number of adjustable feet	3
Weight per foot	2 t
Diameter of base plate	ø 110 mm
Flow rate (air)	10 I/min
Required air pressure	min. 6 bar
T-slots: number/width/distance	4 slots/10 mm/3 x 100 mm
Paper cartridge filter	2 x 2 pcs.
Flushing device	1 Pressure port
-	1 Suction connection
	1 Fine amount pressure port
Flush flow regulator	continuously variable
PROG <i>mod</i> EDM	Programming software

Options

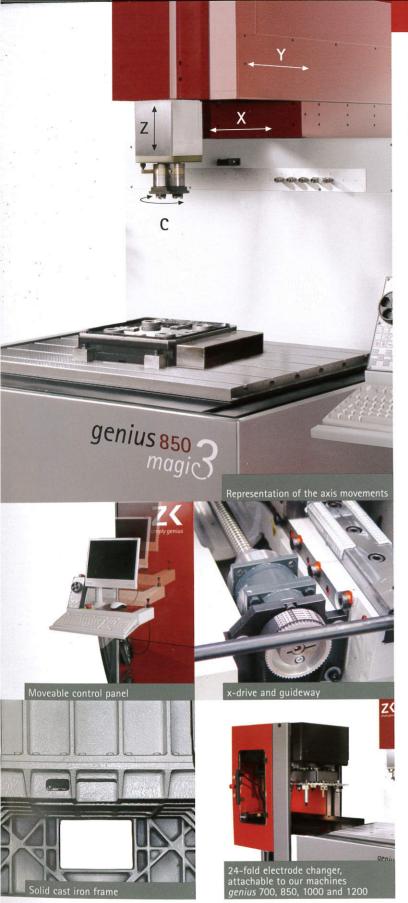
Electrode changer	24-fold, 50-fold
Change system	Robot system Chameleon:
Multi-Change	All-in-one solution for all pallet
	and electrode combinations
Sleeve system, pallet system	EROWA, 3R, Hirschmann,
	POWERGRIP, Mecatool etc.
C-module	for carbide metal working
O-module	for very fine surfaces
Flushing device	expandable to 12 connections
Q-axis	5th EDM axis
Rotation head	up to 700 r/min
High pressure flushing device	possible
JOB <i>mod</i> EDM	order control system
IDENTmod	Identification
Temperature compensation	possible
High pressure flushing	possible



EDM machine genius 850

You need precise results also for heavy work pieces. We designed the *genius* 850 to meet exactly these requirements. It is identical in construction and design to the *genius* 602, but has a larger table and greater travel range. However, the machine requires little space compared to the large machining surface. With the *genius* 850, you can clamp two work piece pallets of common pallet systems at the same time and realise unmanned operation, for example over the weekend. The work tank of the *genius* 850

is integrated into the base, fully retractable and automatically adjusts together with the table. The temperature of the dielectric fluid is automatically and consistently controlled via a thermostat. The space–saving design allows for easy handling both in manual and automated operation. Through the various extension options – for example a 5th axis on the table – this versatile machine can also be adapted to individual requirements within the company.

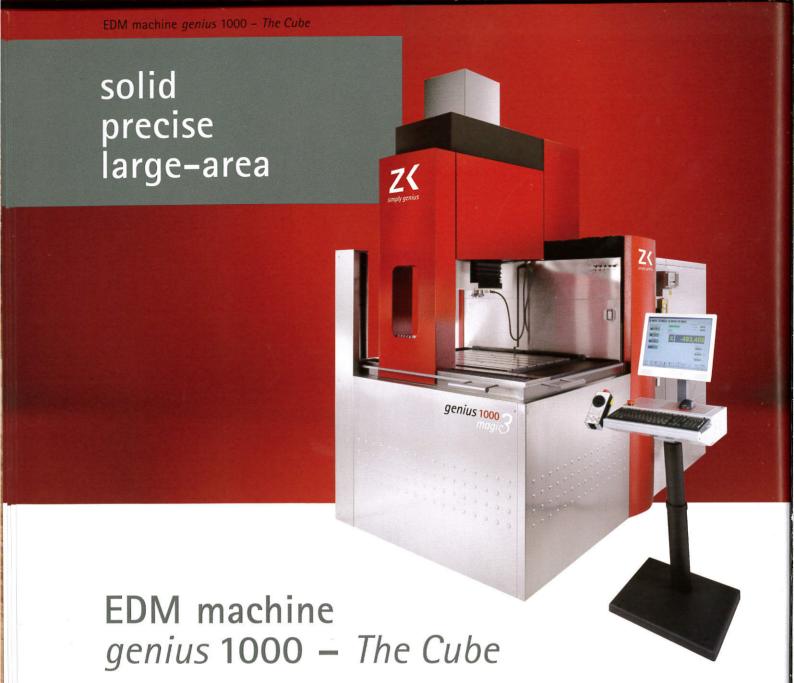


Machine data

Travel distance X - Y	570 x 400 mm
Travel distance Z	410 mm
Table: Length x width	840 x 600 mm
Distance: Table - sleeve	595/180 mm
w/o chuck max./min.	(optional 660/245 mm)
Dielectric fluid above table	360 mm
Overall dimensions (wxdxh)	(1,110 x 1,840 x 2,780) mm
Total weight (w/o fluids)	2,750 kg
Workpiece weight	1,000 kg
Electrode weight w/o rot. head	100 kg
Electrode weight w. rot. head	50 kg with man. safety
Rapid traverse speed X - Y	2 m/min
Rapid traverse speed Z	4 m/min
Resolution X - Y - Z	0.001 mm
Resolution C	0.001°
Dielectric fluid consumption	400 litres
Generator	genius magic ³
Operating current	80 A (+ 80 A with booster)
Suction capacity	200 m ³ /h (55 l/sec)
Required cooling capacity	2.5 kW
Floor load	ca. 4.5 N/mm ²
Number of adjustable feet	3
Weight per foot	1.2 t
Diameter of base plate	ø 60 mm
Flow rate (air)	10 I/min
Required air pressure	min. 6 bar
T-slots: number/width/distance	6 slots/10 mm/5 x 100 mm
Paper cartridge filter	4 pcs.
Flushing device	3 Pressure ports
	1 Suction connection
	1 Fine amount pressure port
PROG <i>mod</i> EDM	Programming software

Options

Electrode changer	16-fold, 24-, 50-fold
Change system	Robot system Chameleon:
Multi-Change	All-in-one solution for all pallet
	and electrode combinations
Sleeve system, pallet system	EROWA, 3R, Hirschmann,
	POWERGRIP, Mecatool etc.
C-module	for carbide metal working
O-module	for very fine surfaces
Flush flow regulator	15-fold
Flushing device	expandable to 14 connections
Q-axis	5th EDM axis
Rotation head	up to 700 r/min
High pressure flushing device	yes
JOB <i>mod</i> EDM	order control system
IDENTmod	Identification
Temperature compensation	possible
High pressure flushing	possible



How do you machine tall work pieces? The best way is with our *genius* 1000. It combines highest stability with rigidity through the construction in the mineral cast bed. As a modified half gantry with two synchronised digital drives in the x-axis, it provides an intelligent, control solution. It thus offers interesting proportions, which are designed specifically for machining tall work pieces – and with exemplary machine precision. All linear axes are equipped with glass scales. This way they achieve particular fineness even with large work pieces. With a dielectric fluid height of 500 mm above the

table, it offers an exceptional processing height, thus covering a wide size range of electrodes and work pieces. The travel range of the machine is also suitable for very large work pieces. The intelligent control system allows you to synchronously control 6 axes as EDM axes. This is a real advantage if you have to deal with complex geometries or free forms. At the same time, the machine allows for the organisation of more efficient processes with large quantities. Despite its size, the *genius* 1000 can be set up in surprisingly small spaces. Its compact design makes it easily accessible and loading with



a crane very simple. The connection to automation is possible from three sides, so that you can place this machine wherever you need it in your company. The height-adjustable control desk ensures ergonomic working for everybody regardless of height. Due to the great accessibility of the service unit, it is particularly easy to maintain and service, saving you even more time.

Machine data

Travel distance Z Table: Length x width Distance: Table - sleeve w/o chuck max./min. Dielectric fluid above table Overall dimensions (w x d x h) Total weight (w/o fluids) Electrode weight w/o rot. head Electrode weight w. rot. head To m/min Resolution X - Y - Z O.001 mm Resolution C Dielectric fluid consumption Flow rate (air) consumption Floor load To l/min Required cooling capacity Electrode weight w. rot. head Electrode weight w. rot. head Diameter of base plate ### In the min with the m	Travel distance X - Y	700 x 500 mm
Distance: Table – sleeve w/o chuck max./min. Dielectric fluid above table Overall dimensions (w x d x h) Total weight (w/o fluids) Workpiece weight Electrode weight w/o rot. head Electrode weight w. rot. head Rapid traverse speed Z Rapid traverse speed Z Resolution X - Y - Z O.001 mm Resolution C Dielectric fluid consumption Generator Generator Operating current 80 A (+ 80 A with booster) Suction capacity Ploor load 3.5 N/mm² Number of adjustable feet Weight per foot Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter 2 pcs. Flushing device Flush flow regulator 650/150 mm (1,650 x 3,064 x 3,050/1,825) mm (100 kg Electrode weight w. rot. head 100 kg 18 m/min 8 A/min 10 l/min 10 l/min 10 l/min 11 Flow mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flush flow regulator	Travel distance Z	500 mm
w/o chuck max./min.500 mmOverall dimensions (wxdxh)(1,650 x 3,064 x 3,050/1,825) mmTotal weight (w/o fluids)5,200 kgWorkpiece weight1,500 kgElectrode weight w/o rot. head100 kgElectrode weight w. rot. head50 kg with man. safetyRapid traverse speed X - Y10 m/minRapid traverse speed Z18 m/minResolution X - Y - Z0.001 mmResolution C0.001°Dielectric fluid consumption700 litresGeneratorgenius magic³Operating current80 A (+ 80 A with booster)Suction capacity200 m³/h (55 l/sec)Required cooling capacity2.5 kWFloor load3.5 N/mm²Number of adjustable feet3Weight per foot2 tDiameter of base plateØ 110 mmFlow rate (air)10 l/minRequired air pressuremin. 6 barT-slots: number/width/distance6 slots/12 mm /T-slots: number/width/distance150 mm, 3 x 100 mm, 150 mmPleated paper filter2 pcs.Flushing device1 Pressure port1 Suction connection1 Fine amount pressure portFlush flow regulatorcontinuously variable	Table: Length x width	900 x 700 mm
Dielectric fluid above table Overall dimensions (w x d x h) Overall dimensions (w x d x h) Total weight (w/o fluids) Workpiece weight I,500 kg Electrode weight w/o rot. head Electrode weight w. rot. head To m/min Rapid traverse speed Z Rapid traverse speed Z Resolution X - Y - Z Dielectric fluid consumption Generator Operating current Suction capacity Required cooling capacity Floor load Number of adjustable feet Diameter of base plate Flow rate (air) Pleated paper filter Flushing device Flush flow regulator Flush flow regulator Flush flow regulator Signum (1,650 x 3,064 x 3,050/1,825) mm (100 kg Electrode weight 100 m/min 8 m/min 9 and 9 m/min 8 ba A (+ 80 A with booster) 200 m³/h (55 l/sec) 2.5 kW Floor load 3.5 N/mm² Number of adjustable feet 3 Weight per foot 2 t Diameter of base plate 9 110 mm Flow ma 10 l/min 8 equired air pressure 10 l/min 150 mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Continuously variable	Distance: Table - sleeve	650/150 mm
Overall dimensions (w x d x h) Total weight (w/o fluids) Workpiece weight Electrode weight w/o rot. head Electrode weight w. rot. head 50 kg with man. safety Rapid traverse speed Z Rapid traverse speed Z 18 m/min Resolution X - Y - Z 0.001 mm Resolution C Dielectric fluid consumption Generator Generator Operating current 80 A (+ 80 A with booster) Suction capacity 200 m³/h (55 l/sec) Required cooling capacity 2.5 kW Floor load 3.5 N/mm² Number of adjustable feet 3 Weight per foot 2 t Diameter of base plate Ø 110 mm Flow rate (air) 10 1/min Required air pressure min. 6 bar T-slots: number/width/distance 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator	w/o chuck max./min.	
Total weight (w/o fluids) Workpiece weight Electrode weight w/o rot. head Electrode weight w. rot. head Electrode weight w. rot. head Electrode weight w. rot. head To kg Electrode weight w. rot. head Electrode weight w. rot. head To kg Electrode weight w. rot. head Electrode weight w. rot. head To kg Electrode weight w. rot. head To m/min Resolution x Y - Z To woon1 mm To 0.001° To 0.001° To 0.001° To 0 litres To 0.001° To 0 litres To 0.001° To 0 litres To 0 kg Electrode weight w. rot. head To 0 kg Electrode weight w. rot. head To 0 kg Electrode weight To m/min Electrode weight To 0 kg Electrode weight To 0 kg Electrode weight To 0 kg Electrode weight To m/min Electrode weight To 10 m/min Pleated paper filter To 10 l/min Pleated paper filter To slots: number/width/distance To slots/12 mm / To mm, 3 x 100 mm, 150 mm Pleated paper filter To pcs. Theresure port To Suction connection Thine amount pressure port To Suction connection Thine amount pressure port Continuously variable	Dielectric fluid above table	500 mm
Horkpiece weight Electrode weight w/o rot. head Electrode weight w/o rot. head Electrode weight w. rot. head Electrode weight w. rot. head Electrode weight w. rot. head So kg with man. safety Rapid traverse speed Z Rapid traverse speed Z Resolution X - Y - Z Resolution C Dielectric fluid consumption Generator Operating current So A (+ 80 A with booster) Suction capacity 200 m³/h (55 I/sec) Required cooling capacity Ploor load 3.5 N/mm² Number of adjustable feet Weight per foot Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter Plushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator Flush flow regulator To l/min Pressure port 1 Suction connection 1 Fine amount pressure port	Overall dimensions (wxdxh)	(1,650 x 3,064 x 3,050 / 1,825) mm
Electrode weight w/o rot. head Electrode weight w. rot. head Electrode weight w. rot. head Electrode weight w. rot. head Rapid traverse speed X - Y Rapid traverse speed Z Resolution X - Y - Z Resolution C Dielectric fluid consumption Generator Operating current Suction capacity Ploor load Number of adjustable feet Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter Flushing device Flush flow regulator T-slots regulator Flush flow regulator 100 kg 100 km 100 km 100 kg 100 km 100 kg 100 km 100 km 100 kg 100 km 100 km 100 km 100 kg 100 km 1	Total weight (w/o fluids)	5,200 kg
Electrode weight w. rot. head Rapid traverse speed X - Y Rapid traverse speed Z Resolution X - Y - Z Resolution C Dielectric fluid consumption Generator Operating current Suction capacity Required cooling capacity Ploor load Number of adjustable feet Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter Flushing device Flush flow regulator Establish man. safety 10 m/min 10 m/min 10 mm 10	Workpiece weight	1,500 kg
Rapid traverse speed X - Y Rapid traverse speed Z Resolution X - Y - Z Resolution C Dielectric fluid consumption Generator Operating current Suction capacity Required cooling capacity Floor load Number of adjustable feet Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter Flush flow regulator Flush flow regulator 10 m/min 10 m/min 10 m/min 10 m/min 10 m/min 10 mm 1	Electrode weight w/o rot. head	100 kg
Rapid traverse speed Z Resolution X - Y - Z Resolution C Dielectric fluid consumption Generator Operating current Suction capacity Required cooling capacity Floor load Weight per foot Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter Flushing device T-slush flow regulator Resolution X - Y - Z 0.001 mm 0.001° 700 litres genius magic³ 200 m³/h (55 l/sec) 200 m³/h (55 l/sec) 2.5 kW 2.5 kW 2.5 kW 2.5 kW 2.10 mm² 3.5 N/mm² 2 t Diameter of base plate Ø 110 mm Flow rate (air) 10 l/min 2 pcs. 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator Continuously variable	Electrode weight w. rot. head	50 kg with man. safety
Resolution X - Y - Z Resolution C Dielectric fluid consumption Generator Operating current Suction capacity Required cooling capacity Ploor load Number of adjustable feet Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter Flushing device Policy I in the sesolution of the state of the suction connection 1 Fine amount pressure port Flush flow regulator O.001 mm 0.001° 0.	Rapid traverse speed X - Y	10 m/min
Resolution C Dielectric fluid consumption Generator Generator Operating current Suction capacity Required cooling capacity Floor load Number of adjustable feet Diameter of base plate Flow rate (air) T-slots: number/width/distance Flushing device Operating current BO A (+ 80 A with booster) 200 m³/h (55 l/sec) 2.5 kW 3.5 N/mm² N/mm² Number of adjustable feet 3 Weight per foot 2 t Diameter of base plate Ø 110 mm Flow rate (air) 10 l/min Required air pressure min. 6 bar T-slots: number/width/distance 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator Continuously variable	Rapid traverse speed Z	18 m/min
Dielectric fluid consumption Generator Generator Operating current Suction capacity Required cooling capacity Floor load Number of adjustable feet Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter Flushing device Dienerator Operating current 80 A (+ 80 A with booster) 200 m³/h (55 l/sec) 2.5 kW 3.5 N/mm² Number 2 t Dimme 10 l/min 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator	Resolution X - Y - Z	0.001 mm
Generator Operating current 80 A (+ 80 A with booster) Suction capacity Required cooling capacity 2.5 kW Floor load 3.5 N/mm² Number of adjustable feet 3 Weight per foot Diameter of base plate Flow rate (air) Required air pressure T-slots: number/width/distance Pleated paper filter Flushing device Plush flow regulator genius magic³ 80 A (+ 80 A with booster) 91 A (+ 80 A with booster) 92 A (+ 80 A with booster) 93 A (+ 80 A with booster) 94 A (+ 80 A with booster) 94 A (+ 80 A with booster) 95 A (+ 80 A with booster) 95 A (+ 80 A with booster) 96 A (+ 80 A with booster) 96 A (+ 80 A with booster) 97 A (+ 80 A with booster) 97 A (+ 80 A with booster) 98 A (+ 80 A with booster) 98 A (+ 80 A with booster) 99 A (+ 80 A with booster) 90 A (+ 80 A	Resolution C	0.001°
Operating current Suction capacity Required cooling capacity Floor load Number of adjustable feet Diameter of base plate T-slots: number/width/distance Pleated paper filter Flushing device Page 100 m³/h (55 l/sec) 2.5 kW 3.5 N/mm² 3.5 N/mm² 10 l/min 10 l/min 6 slots/12 mm/ 150 mm, 3 x 100 mm, 150 mm Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator Continuously variable	Dielectric fluid consumption	700 litres
Suction capacity Required cooling capacity Floor load Number of adjustable feet Weight per foot Diameter of base plate Flow rate (air) T-slots: number/width/distance Pleated paper filter Flushing device Plush flow regulator 200 m³/h (55 l/sec) 2.5 kW 3.5 N/mm² Number 10 l/mm² 10 l/min min. 6 bar 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator Continuously variable	Generator	genius magic ³
Required cooling capacity Floor load 3.5 N/mm² Number of adjustable feet Weight per foot Diameter of base plate Flow rate (air) Required air pressure T-slots: number/width/distance Pleated paper filter Flushing device Plush flow regulator 2.5 kW 3.5 N/mm² 3 to mm 6 slots/10 mm 150 mm, 3 x 100 mm, 150 mm 2 pcs. 1 Pressure port 1 Suction connection 1 Fine amount pressure port Continuously variable	Operating current	80 A (+ 80 A with booster)
Floor load Number of adjustable feet Weight per foot Diameter of base plate Flow rate (air) Required air pressure T-slots: number/width/distance Pleated paper filter Flushing device T-slots: number/width / distance 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator 3.5 N/mm² 3.5 N/mm² 8 110 mm 9 110 mm 10 1/min 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm 1 Fressure port 1 Suction connection 1 Fine amount pressure port	Suction capacity	200 m ³ /h (55 l/sec)
Number of adjustable feet Weight per foot Diameter of base plate Plow rate (air) Required air pressure T-slots: number/width/distance Pleated paper filter Flushing device T-slots: number/width/distance 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator	Required cooling capacity	2.5 kW
Weight per foot Diameter of base plate Plow rate (air) Required air pressure T-slots: number/width/distance Pleated paper filter Plushing device T-slots: number/width/distance 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator	Floor load	3.5 N/mm ²
Diameter of base plate Ø 110 mm Flow rate (air) 10 I/min Required air pressure min. 6 bar T-slots: number/width/distance 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator continuously variable	Number of adjustable feet	3
Flow rate (air) Required air pressure T-slots: number/width/distance 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator continuously variable	Weight per foot	2 t
Required air pressure min. 6 bar T-slots: number/width/distance 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator continuously variable	Diameter of base plate	ø 110 mm
T-slots: number/width/distance 6 slots/12 mm / 150 mm, 3 x 100 mm, 150 mm Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator continuously variable	Flow rate (air)	10 I/min
Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator continuously variable	Required air pressure	min. 6 bar
Pleated paper filter 2 pcs. Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator continuously variable	T-slots: number/width/distance	6 slots/12 mm/
Flushing device 1 Pressure port 1 Suction connection 1 Fine amount pressure port Flush flow regulator continuously variable		150 mm, 3 x 100 mm, 150 mm
1 Suction connection 1 Fine amount pressure port Continuously variable	Pleated paper filter	2 pcs.
1 Fine amount pressure port Flush flow regulator continuously variable	Flushing device	1 Pressure port
Flush flow regulator continuously variable		1 Suction connection
3		1 Fine amount pressure port
PROG <i>mod</i> EDM Programming software	Flush flow regulator	continuously variable
	PROG <i>mod</i> EDM	Programming software

Options

Electrode changer	24-fold
Change system	Robot system Chameleon:
Multi-Change	All-in-one solution for all pallet
	and electrode combinations
Sleeve system, pallet system	EROWA, 3R, Hirschmann,
	POWERGRIP, Mecatool etc.
C-module	for carbide metal working
0-module	for very fine surfaces
Flushing device	expandable to 12 connections
JOB <i>mod</i> EDM	order control system
IDENTmod	Identification
Swing/rotary table	5th + 6th simult. EDM axis
High pressure flushing	possible



We offer clean design combined with maximum stability. The *genius* 1200 is designed for the real big tasks. The machine is constructed in gantry style. Even very heavy work pieces can be processed with the highest precision due to the rigid cast iron design. Despite its size, you can set up the machine using comparatively little space, since it is easily accessible from all sides for maintenance and service work. The *genius* 1200 is equipped with a 5-axis CNC control system and has two simultaneous

drives, each with measurement systems for the gantry of the x-axis, which are directly attached. This allows you to process large electrode dimensions as well as small parts on large work pieces. The tank can be continuously lowered, saving you time. Interruptions for pumping, flooding or temperature adjustments are avoided and idle times reduced.

genius 1200 3 X_2 Representation of the axis movements Table substructure with pillars and supports Torsion-resistant cast iron machine bed x-guide with glass scale

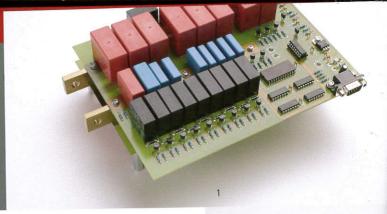
Electrode changer (can be mounted or attached)

Machine data

Travel distance X - Y	900 x 680 mm
Travel distance Z	405 mm
Table: Length x width	900 x 700 mm
Distance: Table - sleeve	650/235 mm
w/o chuck max./min.	(optional 750/325 mm)
Dielectric fluid above table	410 mm
Overall dimensions (wxdxh)	(1,540 x 1,520 x 2,710) mm
Total weight (w/o fluids)	3,700 kg
Workpiece weight	3,000 kg
Electrode weight w/o rot. head	100 kg
Electrode weight w. rot. head	50 kg with man. safety
Rapid traverse speed X - Y	2 m/min
Rapid traverse speed Z	4 m/min
Resolution X - Y - Z	0.001 mm
Resolution C	0.001°
Dielectric fluid consumption	900 litres
Generator	genius magic ³
Operating current	80 A (+ 80 A with booster)
Suction capacity	200 m ³ /h (55 l/sec)
Required cooling capacity	2.5 kW
Floor load	5.5 N/mm ²
Number of adjustable feet	3
Weight per foot	1.5 t
Diameter of base plate	ø 60 mm
Flow rate (air)	10 l/min
Required air pressure	min. 6 bar
T-slots: number/width/distance	6 slots/12 mm/5 x 145 mm
Paper cartridge filter	6 pcs.
Flushing device	3 Pressure ports
-	1 Suction connection
	1 Fine amount pressure port
PROG <i>mod</i> EDM	Programming software

Options

Electrode changer	16-fold, 24-fold, 50-fold
Change system	Robot system Chameleon:
Multi-Change	All-in-one solution for all pallet
	and electrode combinations
Sleeve system, pallet system	EROWA, 3R, Hirschmann,
	POWERGRIP, Mecatool etc.
C-module	for carbide metal working
0-module	for very fine surfaces
Flush flow regulator	15-fold
Flushing device	expandable to 14 connections
Q-axis	5th EDM axis
Rotation head	up to 700 r/min
High pressure flushing device	possible
JOB <i>mod</i> EDM	order control system
IDENTmod	Identification
High pressure flushing	possible



Options for EDM machines



¹ C-module

The C-module makes the optimal erosion with the rotation head or in case of exotic materials (Inconel, titanium, CBN) as well as tungsten copper/carbide and/or steel/steel possible.

² O-module

The O-module is permanently installed in the machine and used to increase efficiency for surfaces finer than RA 0.8.

3 Rotation head

The rotation head allows the fast and precise EDM of small, deep holes with tube electrodes of diameters between 0.6 mm and 6 mm. The rotation head is suitable for all current clamping systems and used via the electrode changer. The circulator turbine is supplied automatically through the machine. The rotation head is also available with high pressure flushing device.

⁴ Tube guides for high pressure flushing

For the production of highly accurate and deep bore holes starting at 0.1 mm in diameter, the rotation head and the C-module can be used together with an additional tube guide.

5 Q-axis

The Q-axis is a simultaneously running, standard fifth CNC-axis that you can clamp horizontally or vertically onto the machine table. You can position, rotate or simultaneously spark-erode with the axis. Automatic changing operation is possible with a robot like the *Chameleon*.

⁶ Heavy-load adapter

The heavy-load adapter is suitable for all machine types. It is used to attach particularly heavy electrodes to the sleeve. In this case, the C-axis is deactivated and the electrode is aligned manually.



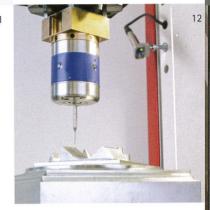
















7 Interface software for measuring machines

With the interface software for the measuring machines recommended by Zimmer & Kreim, for example by Zeiss or other measuring equipment manufacturers, you save time for set-up and alignment. The offset values are supplied to the control system for calculation and processed accordingly.

8 Cooling unit (not pictured)

An additional cooling unit supplies the heat exchanger that balances the temperature of the dielectric fluid with chilled water. It is suitable for both direct and external cooling.

9 Booster

The booster serves as power amplifier of the generators for a load increase from 80 A to 160 A (except *genius* 602). The booster can be connected to all *genius* machines and expanded by an additional 25 A.

10 Pallet truck

The pallet truck makes loading the transfer and cleaning station and the machines and measuring machines easier. The pallet truck carries all common pallets up to a size of 500 x 500 mm. The transfer weight including the pallet is 120 kg.

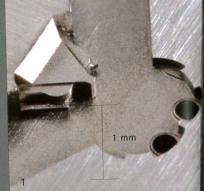
¹¹ genius transfer</sup>

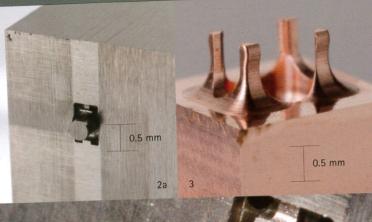
The joystick measuring device *genius*^{transfer} measures work pieces and electrodes without measuring cycles. Offset values are calculated directly in the control system.

12 Measuring sensor

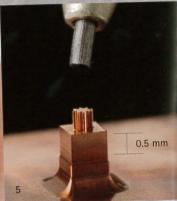
With a 3D probe and a laser, the tolerance of the electrode is measured to determine the dimensional accuracy. Any necessary corrections can be carried out immediately.

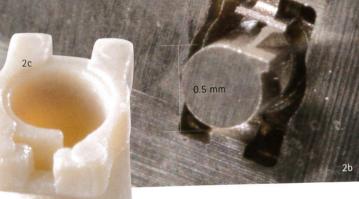
little wear precise contours very fine surfaces

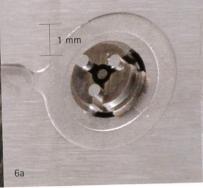














- 1 Slide mould fibre optic technology
- 2 a. 0.5 mm work piece
 - b. Enlargement of the work piece
 - c. Finished moulded part, final size 2 x 1.5 mm
- 3 Electrode, min. bar width 0.08 mm
- 4 Copper electrode for EDM polishing with narrow bars (0.03 mm) RA 0.07
- 5 Toothed electrode, 8 teeth; the specially modified generator control allows the precise and low-wear use of even the smallest electrodes.
- 6 a./b. Upper and lower form of the work piece
 - c. Insulating piece diameter 3 mm, height 1.7 mm, bars 0.25 mm

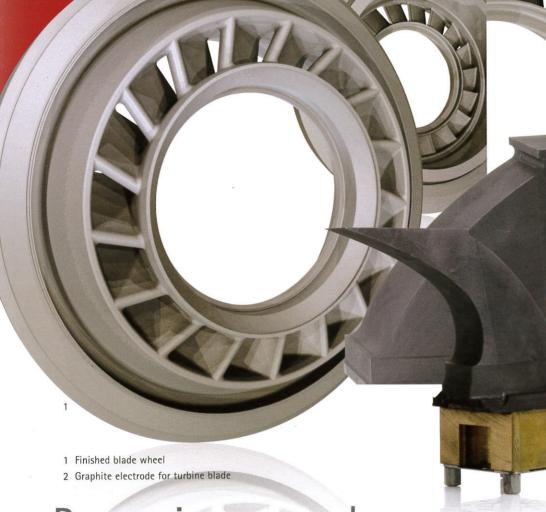


Processing examples of IT and medical technology

In IT and medical technology, minuscule parts with perfectly smooth surfaces are used. The requirements for the EDM process are above all highest precision with fast processing and low wear. With

the *genius* 602 Nano, Zimmer & Kreim has specialised in precise and low-wear machining with extremely small electrodes in the micro-range.

high erosion rates simultaneous 6-axis operation reduction of electrodes



Processing examples for the aerospace industry

During the EDM of blades and turbines, highperformance electrodes are needed to allow for high erosion rates and smooth surfaces during roughing. The forming of the sometimes very large work pieces is a complex process requiring at least four axes. Zimmer & Kreim machines demonstrate outstanding qualities in working with graphite, achieve particularly good results in erosion and surface quality, and offer a lot of space to move around. As the only manufacturer on the market, Zimmer & Kreim offers a machine control system that ensures the process and EDM in simultaneous 6-axis operation, thus significantly reducing the number of electrodes.

uniform structure very fine contours thin-walled electrodes









- 1 directly spark-eroded filter for fuel injection systems, finest contours and fine surfaces up to RA 0.01 mm
- 2 delicate work pieces with finished ABS-filter
- 3 precision stamp

- 4 delicate graphite electrode with thin bars for functional parts with corresponding injection mould
- 5 tiny work piece for large mass production with die-cast finished product

Processing examples for the automotive industry

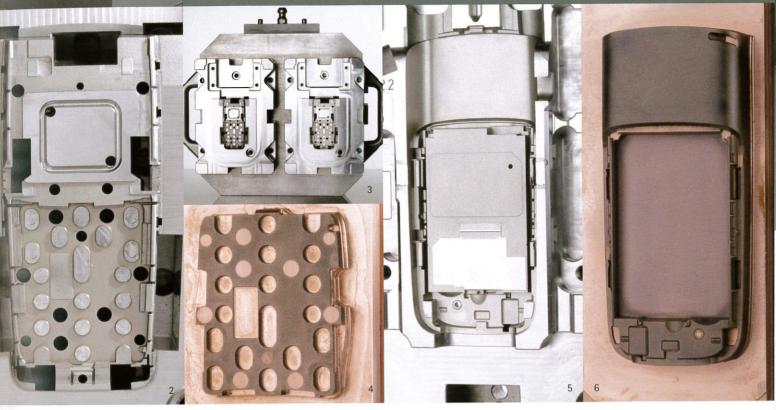
Different surfaces, but consistent surface quality.

Precise manufacturing of functional parts with small grooves and bars. Complex electrodes for difficult forms. Long processing times with high throughput at the same time.

The requirements in the automotive industry are complex and require highest precision and greatest efficiency. Especially with regard to diversity and large units, the automated solutions by Zimmer & Kreim prove their worth.

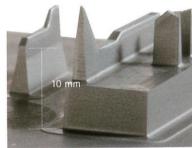


fine, smooth surfaces compatibility of the electrodes top graphite materials



- 1 graphite electrodes for very fine bars and minuscule grooves
- 2 tool for inner shell
- 3 tools mounted on a pallet
- 4 copper electrode for inner shell with thin bars and fine contours
- 5 top of tool

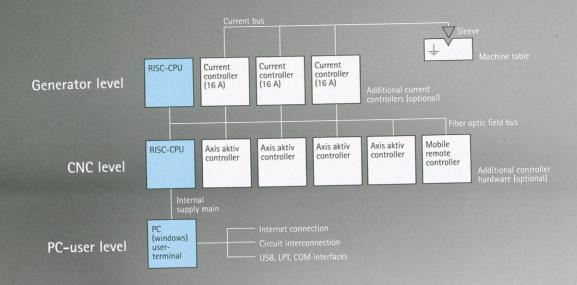
- 6 copper electrode for smooth surface treatment VDI 18/RA 0.8
- 7 graphite electrodes for very fine bars and minuscule grooves



Processing examples for the communications industry

The production of components for communications technologies requires the highest accuracy both regarding depth and surface quality as well as fast processing times – with electrodes made of different materials. Up to 1,000 electrodes may

be used for one tool. This is why the compatibility for the EDM process is a determining requirement. Zimmer & Kreim machines process graphite as well as copper and are optimally designed for the quick replacement of electrodes.



genius control system (schematic representation)

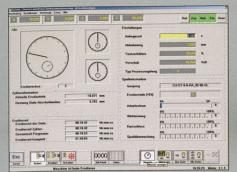
Generator technology genius magic³ control system

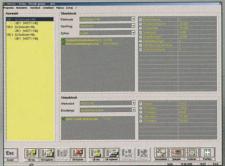
The heart of our well-known, excellent machines is the control system. It was designed specifically for EDM and contains our 25-year experience of building EDM machines. And it does what you expect from a Zimmer & Kreim machine: precision, speed, reliability, stability and flexibility and ease of operation.

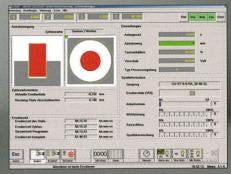
This means specifically: Our control system allows programming during the erosion process, ensures safe and easy operation, and allows the data transfer via various external interfaces. The control system has its own internal database and is designed as an open solution. It allows for EDM in stand-alone operation as well as for highest functionality in workshop groups.

Flexibility is one of the most important characteristics of our control system. The EDM process can be designed based on the requirements of the work assignments and remains comfortable and economical even in non-standard situations

With the magic³, our generator control system guarantees that EDM leads to equally good results in all three "material worlds". Whether graphite, carbide or copper processing – magic³ achieves







user interface genius control system

the best EDM results with almost zero wear and considerably improved times. With a Windows user interface and various graphical display options, our generator control system ensures greatest user friendliness. The 3D coordinate system handling allows for systematic error control. Calculating the work piece coordinates is also possible online in manual mode. The EASYPROG programming inter-

face also facilitates the processing of a wide array of technologies. The ZK generator control system can be equipped with various additional modules, thus offering solutions for both special applications and mass production. The operation of Ω -axes from other manufacturers, for example, is therefore possible without a problem.



Service

Whether it be machines, handling systems or software, we offer you a multitude of service options to ensure maximum availability and performance for your systems. We apply the following principle: We help you find the quickest way to be up and running again after any malfunctions without any major disruptions to production.

The advantages of ZK's service at a glance:

- Help Desk: Our help desk will provide you with first aid and rapid support by telephone. We make sure that none of your queries goes astray from the moment we pick up the phone until you have received expert advice from a service specialist.
- Remote service: With the remote maintenance service we log into your systems and rectify errors directly online or perform updates and repair work.
- On-site service: Wherever you are we'll be there in a flash. Our on-site service ensures that your systems are working again as quickly as possible.

- Machine and software upgrading: The modular design makes this possible. We will adapt your machines and your software at any time to meet your company's requirements so that you are fully prepared for anything your customers require.
- Spare parts service: We keep large stocks of spare parts for you in our stores so that we can react quickly in an emergency.
- Preventative maintenance: Preventative maintenance helps improve the service life and quality of your machines.

And now the latest: 070000 genius Worldwide vanity service number.

By dialling the vanity call number 070000*genius* (070000436487) you will be put through directly to our staff in the telephone service department without having to select a country code. The short answer to rapid help.







Our skills support any process

Technology, which has much to offer, requires skills that can make use of any options. ZK offers you training on all aspects of process optimisation, technology, software and machines, thus enabling you to use all the potential in your company in the best possible way.

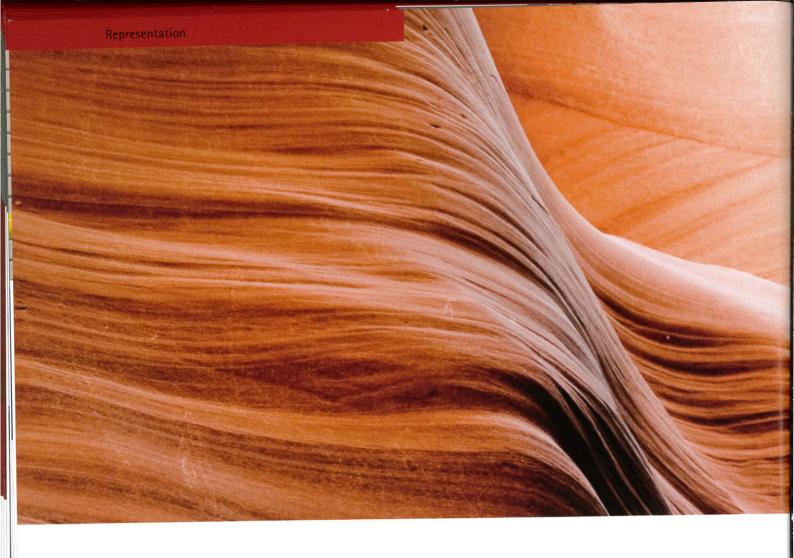
Training and further training sessions

- on technology, materials and tools
 (e.g. graphite processing)
- on software applications and use
 (e.g. data transfer from CAD/CAM)
- on machines (e.g. optimising processing results)
- on processes (e.g. improving process flows and running times or achieving data consistency)
- also cell manager training can be co-ordinated by our ZK Academy.

Step by step to better processes

- Process analysis: We analyse the processes in your company and make proposals for introducing or extending automation
- Project planning: A dedicated project team in our company will see your project through, ensure that it is on time and co-ordinate communication up to a successful conclusion.
- Installation and customising: Our service personnel will undertake commissioning on site with all the necessary configurations, tests and modifications until the process runs smoothly.
- Start up support: Even if your staff are still unsure after initial training – one call will do. Our service team will help you.
- Technology training: We adapt all standard technologies to your specific range of parts so that you get the best out of your hardware and software.





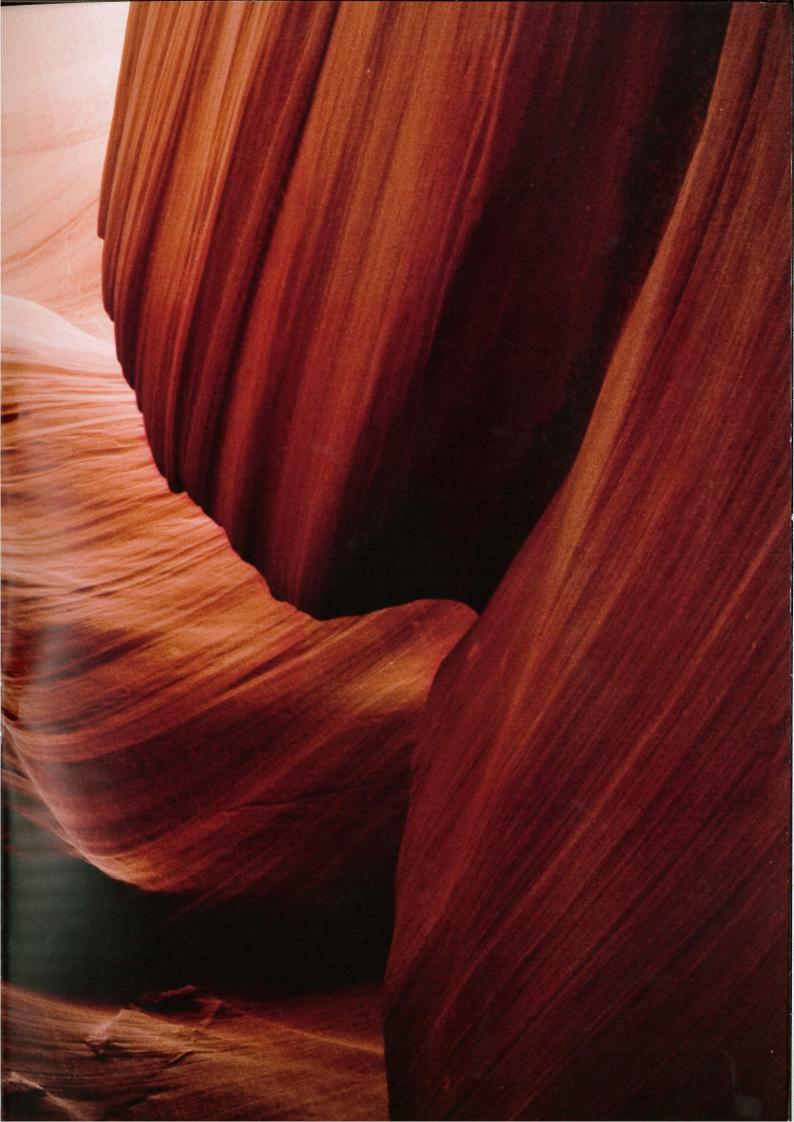
Partners without borders

Whether you work at home or abroad – we have built up sales partnerships for you in Germany, Europe, Asia and America. This means that we offer contacts that can expertly assist you in all aspects regarding Zimmer & Kreim systems in your native language. All our sales partners are carefully selected and brought up-to-date regarding our technology in regularly scheduled training sessions. They are also the right contact person for you in case of repairs

and are supplied by us with the necessary spare parts in the shortest of times. By the way: we are constantly expanding our sales partnerships so that you will find a contact person close by everywhere in the world.

You can find our partners and their contact details on our website.

www.zk-system.com





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