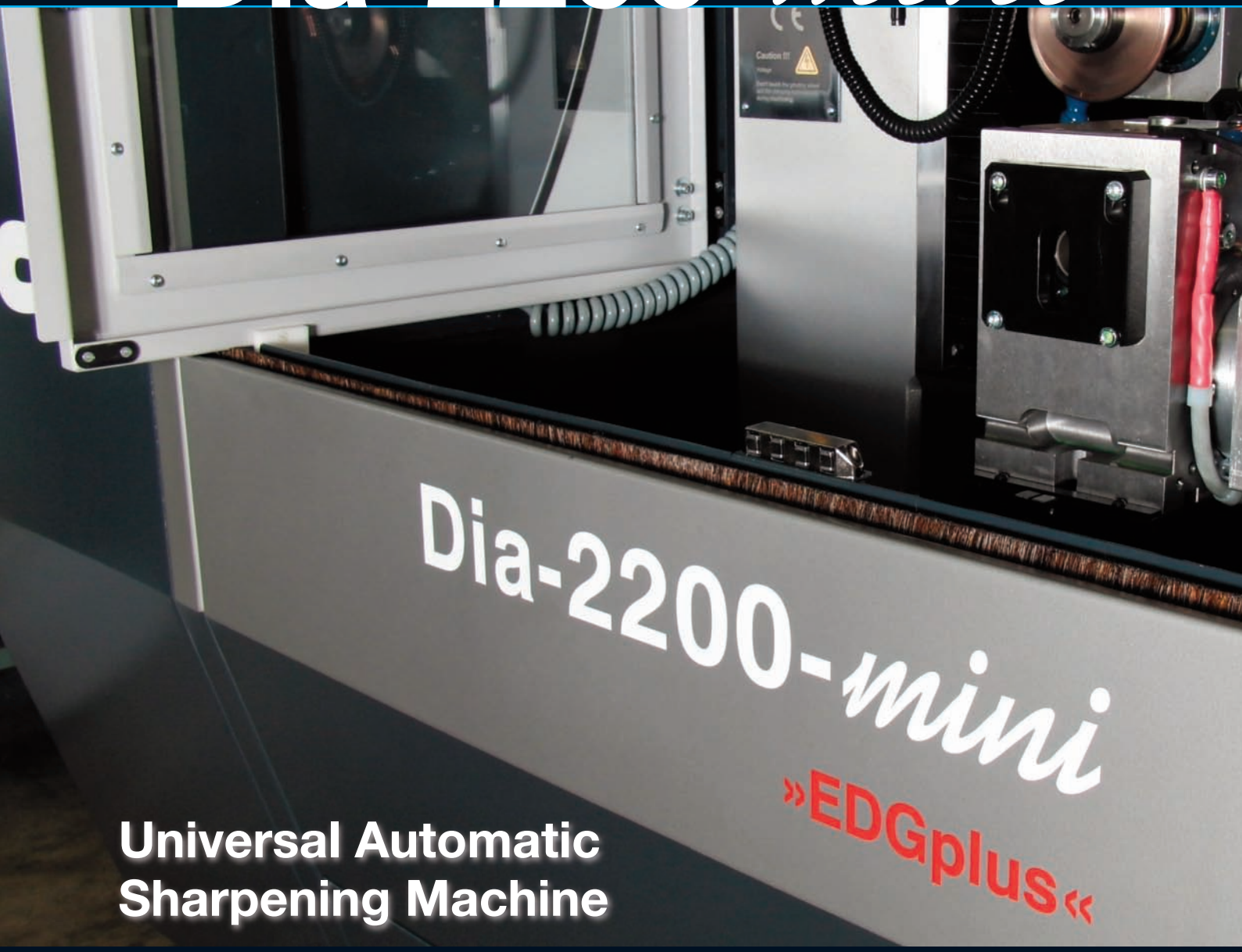
»Dia-2200-*mini*«



Universal Automatic Sharpening Machine

LACH DIAMANT®
established 1922

More than 30 Years of Spark Erosion for Diamond Tooling

»Dia-2200-*mini*«

The new concept for
servicing diamond tools

… also a result of more than 30 years
successful constructing of EDG spark erosion
machines for PCD processing

LACH DIAMANT®

More than 30 years after the discovery of the spark erosion by LACH-DIAMANT we have a premiere again the "*mini*" the great alternative to the »Dia-2100-classic« for PCD processing.

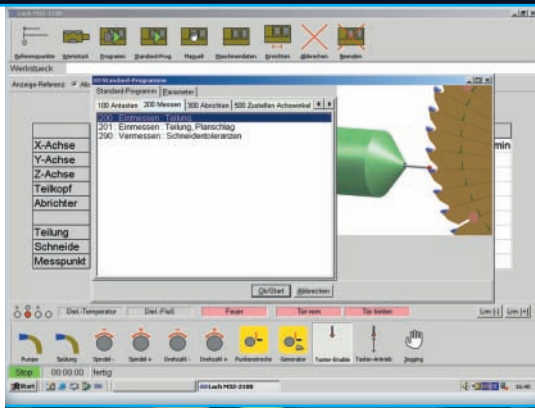
The concept of the »Dia-2200-*mini*« fulfills the worldwide increased and changed requirements for the service of diamond tools (PCD).

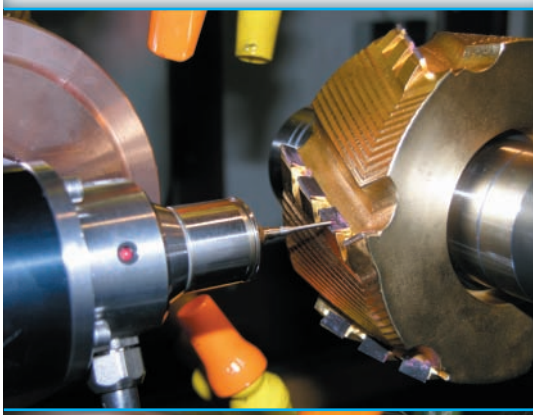
In the first place is this valid for diamond tools for the processing and machining of known wood and wood-like materials, PCB circuits board material, plastics and non-ferrous metals.

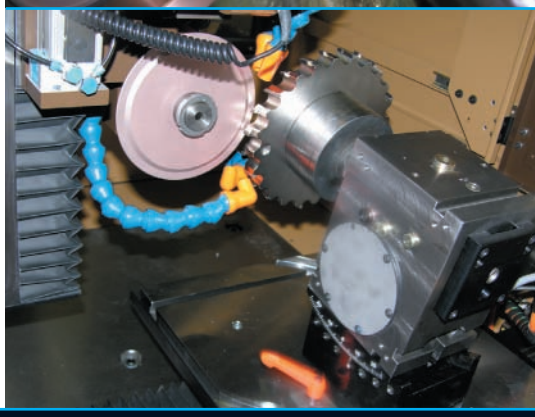
The tradition at LACH-DIAMANT started with the legendary »M-1050 automatic«, subsequently a number of special features were developed for the "*mini*" which facilitate an easy handling for diamond service operations.

Exemplary is

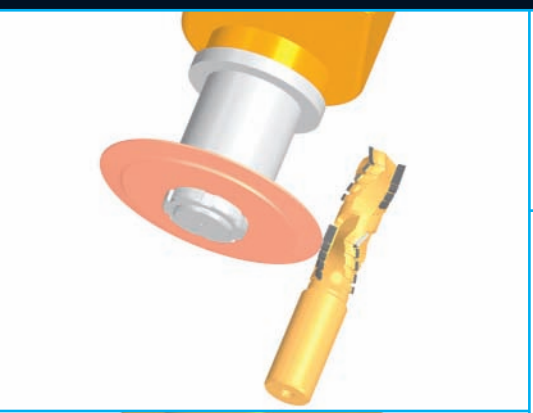
- the modern menu navigation on the monitor (see photo) based on Microsoft Windows®
- the precise 3-D calibration of individual tools or tool sets
- the simple and quick retrofitting of the machine for different tool types
- the ergonomic layout with the advantage of direct proximity to the machine and tool
- high production safety by the triple safeguarded fire protection system (fire warning + 2-times fire extinguishing system)
- the compact construction of the machine has been designed with a small foot print and all aggregates are easily accessible



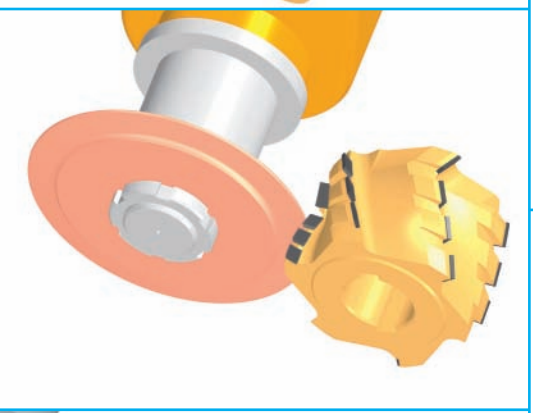




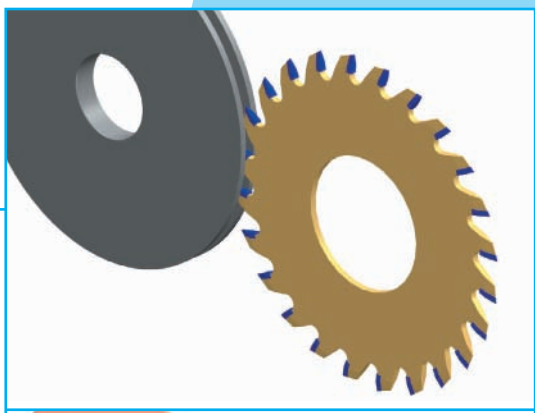
»Dia-2200-*mini*« – All in one



Diamond router bits – shear cut

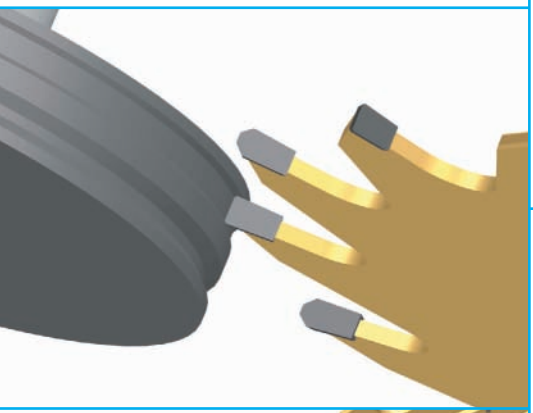


Diamond jointing cutter – shear cut



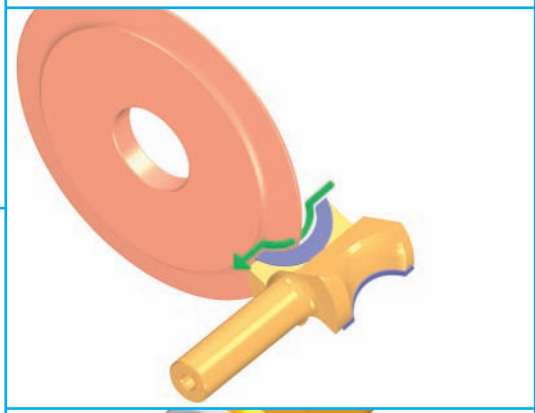
Diamond scoring tools – pointed tooth

(high manufacturing accuracy and little eroding time due to plunging process)

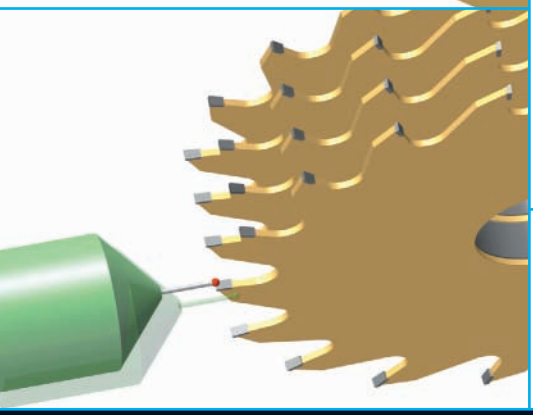


Diamond saws – different tooth shapes

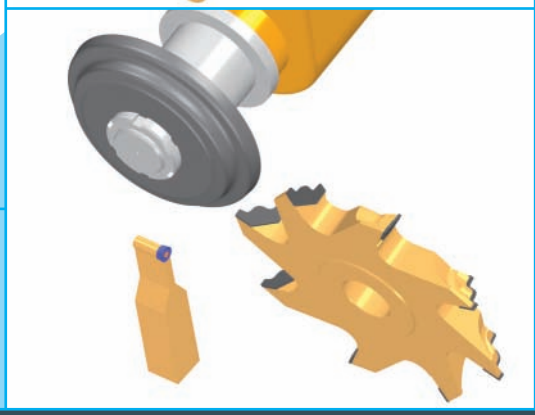
(fully automatic function including compensation for the diameter and axial run-out)



Profile tool with copper disc – continuous path controlled



Diamond saws – multiple manufacturing



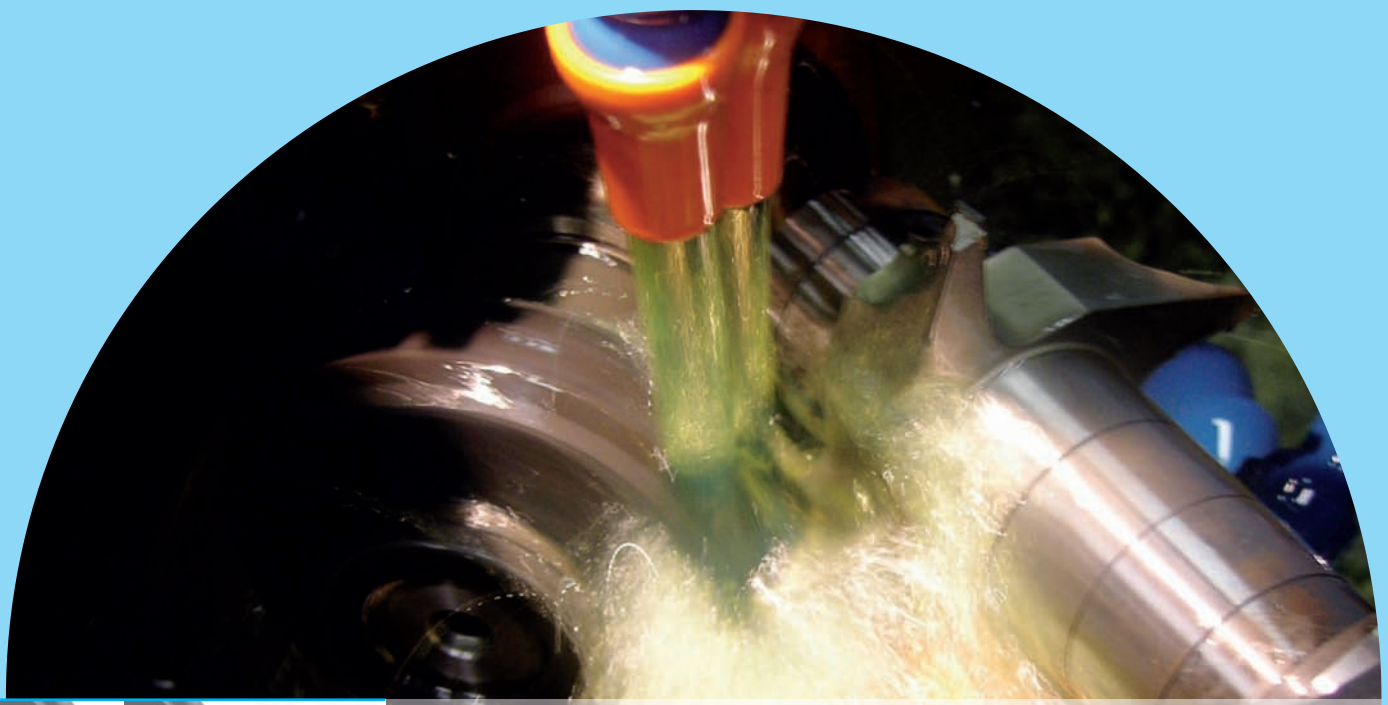
Profile tool with graphite disc – plunging process

(profiling of graphite disc with template/profile dresser or by way of continuous path control)

LACH DIAMANT®

»Dia-2200-*mini*«

»*mini* shows profile«
Three ways to profile



Explanation: * in two cycles			
Electrode Graphite / Copper	✔/✖	✔/✖	✔/✔
Simple open profile	✔	✔	✔
Profile with sharp edge (inside)	✔	✔	✖
Profile with sharp edge (outside)	✔	✖	✔
Closed profile	✖	✖	✔
Setup time	🏃	🏃🏃	🏃🏃🏃
Erosion time	🏃🏃🏃	🏃🏃🏃	🏃

Sharpening of universal profile tools

The »Dia-2200-*mini*« is used for the typical diamond service operation for all types of diamond tools including profile tools.

The optional program package "*mini* shows profile", as with all program functions of the »*mini*«, can easily be learned and applied on the WINDOWS® user interface.

Extensive or previous CNC knowledge is not needed contrary to other sharpening machines on the market.

The application of the »*mini*« with the new programming package for path controlled profiling of diamond tools saves, in many cases, the additional purchase of an EDM wire machine. Furthermore, you have the advantages of a more rapid eroding time with the LACH spark eroding grinding process EDG* as compared to the EDM wire process.

Quick and easy determining of the starting position of the profile tool inside the machine by means of a camery system**

*EDG = electrical discharge grinding
**optionally obtainable

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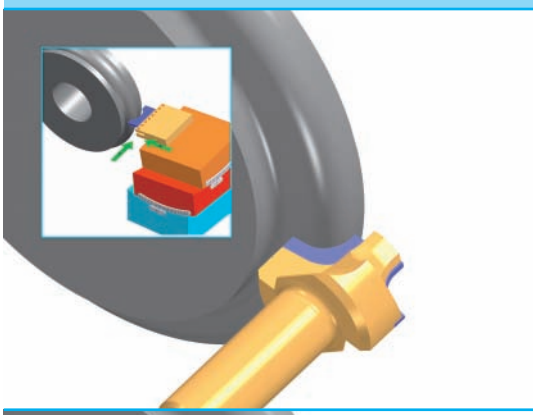
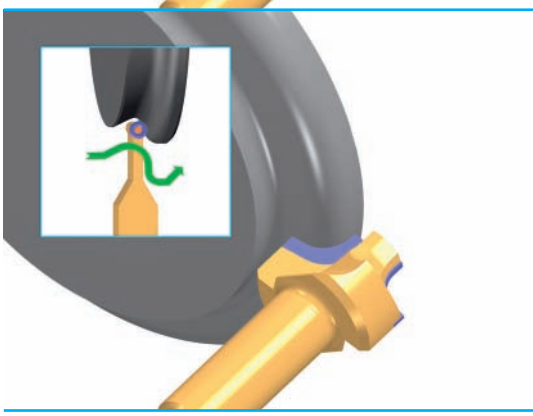
The Classic: Profiling of a graphite electrode with dressing tools

The proven process from the time of the legendary M-1050 sharpening machine was further developed with automatic dressing cycles and simplified operation. To this day, the process of plunging into the profile with the profiled dresser is unsurpassed in time savings. Further highlights are the eroding of sharp-edged profiles and the quick positioning of the diamond tool to the pre-profiled electrode.



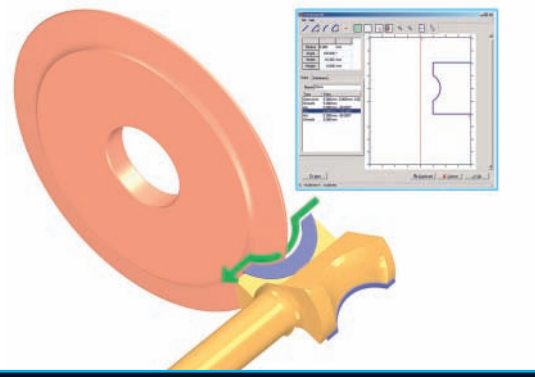
The Newcomer: Profiling of graphite electrode with continuous path control*

This classic process is paired with modern continuous path control. The tool-specific dresser is not needed for this process. The profiled contour is developed by way of an integrated profile editor (no special CAD knowledge required). Just the same, almost all advantages of the classic process are maintained, meaning simple positioning of the tool paired with extreme high processing speed.



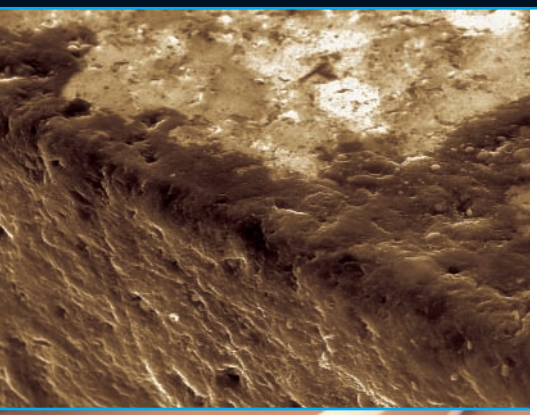
The Specialist: The copper electrode profiled by continuous path control*

The solution for the sharpening of intricate profiles. The profile is produced using a copper electrode with continuous path control.



* part of the optional program package »*mini* shows profile«

Digital Generator of the latest Generation



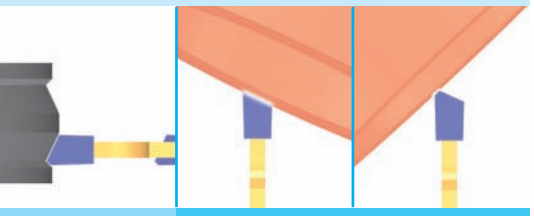
Surface quality up to Ra < 0,2 µm

The wanted surface qualities are easily obtained with the digital generator of the latest generation, either with copper or graphite electrodes EDGplus.

Example: Saw tooth

Copper or graphite electrodes – you have the choice

Take advantage of the particular electrode. With the help of the modern software and the HSK 50 spindle collet it only takes seconds to change from one electrode to the other.



Graphite – back and chamfer in one step

Copper – back and chamfer in two steps

Recognize and utilize advantages

Graphite electrode

Its largest benefit is that it can easily be formed. Tool geometries can be impressed simply on the electrode and additionally save time-consuming working steps.

Recognize and utilize advantages

Copper electrode

The best benefit is the high dimensional stability which minimizes dressing cycles. This is shown on straight-edge tools such as router bits and jointing cutters.

Example: Routerbit

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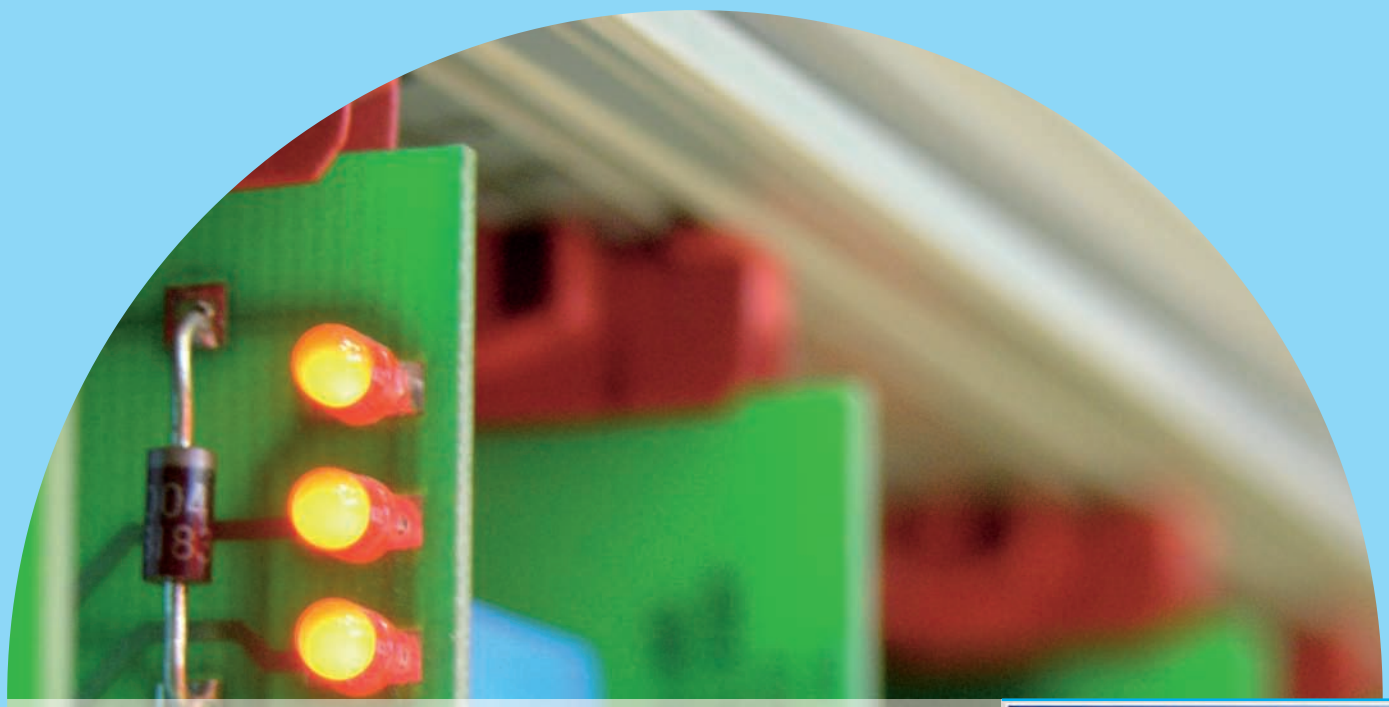


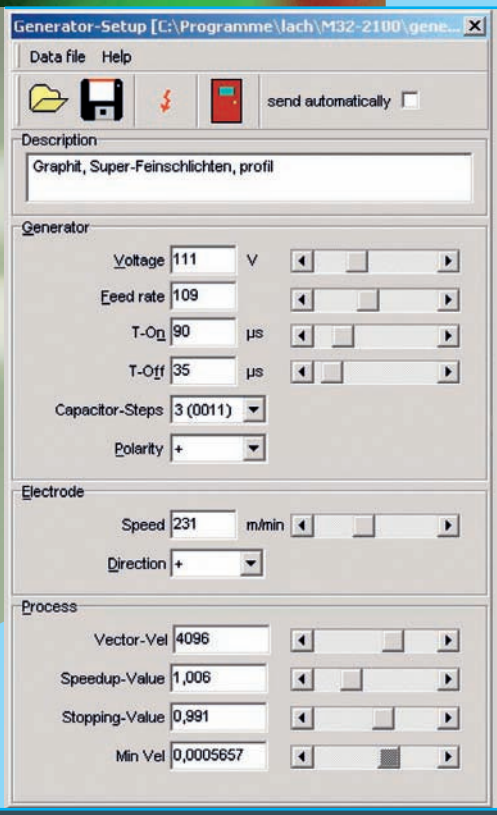
»digital flexible« replaces conventional roughing, finishing, fine finishing

The digital generator of the »Dia-2200-*mini*« is digitally addressed by the control and thus reaches flexibility not known up to now.

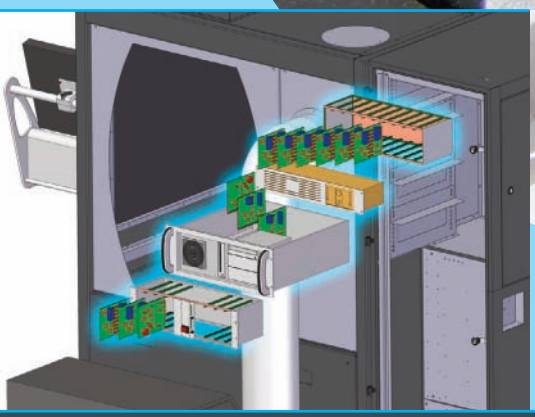
The respective generator stage is represented by a file on the hard drive of the control. This process offers a multiple number of variants and exceeds by a wide margin the classic processing steps such as roughing, finishing and fine finishing.

This gives you the security for present and future PCD variants and types of electrodes.

Please remember you will always benefit from the experiences of the pioneer LACH-DIAMANT in the processing and manufacturing of PCD tools since 1973.



A control with affection for detail



Complex technology hidden behind an easy to operate user interface

The operation of the »Dia-2200-*mini*« supports the newcomer with the new generation monitor (Microsoft® system) in the expanding diamond service business through concise, clear menu navigation.

Assistance for an assured sharpening process is provided by integrated illustrations, photos and short videos.

The control of the »Dia-2200-*mini*« has been designed for around the clock (24 hours) operation.

The modular configuration of the »Dia-2200-*mini*« assures high reliability.

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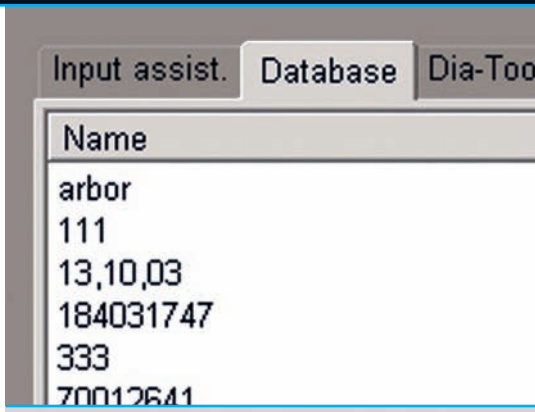
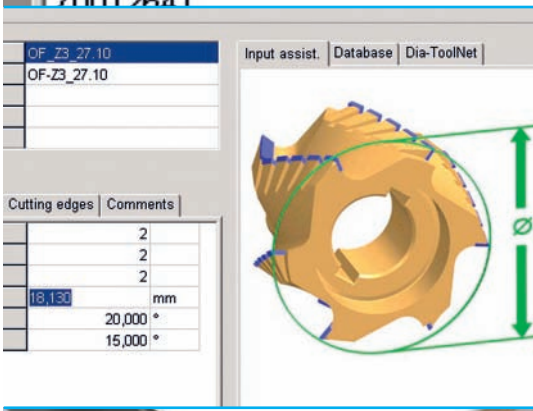
A program developed for the service of diamond tools

The integrated data bank is able to call up any tool data which were ever produced or sharpened on your "*mini*".



We won't leave you alone

Almost all programs and parameters are backed up by clear graphics and even videos which greatly simplify the operation of the machine.



Two are better than one

All LACH-DIAMANT sharpening machines and measuring instruments based on Microsoft Windows® are equipped with two hard drives. These drives automatically protect all files.

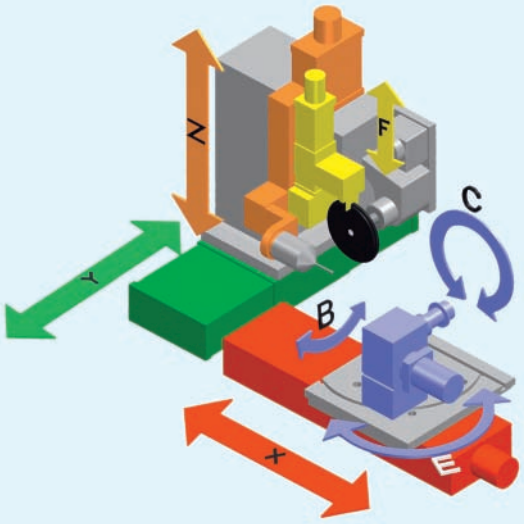
»Dia-ToolNet« station – get the maximum of your »Dia-2200-*mini*«

With the help of the »Dia-ToolNet« station the measuring of tools can be carried out in seconds. Transfer measured tool data directly via the network cable to the tool editor of each connected »Dia-2200-*mini*« or the »Dia-2100-classic«. Inspect tools with the same ease as you would with higher priced measuring instruments. Generate CAD drawings with profile tools directly at the »Dia-ToolNet« station. The program, "*mini* shows profile" and the »Dia-ToolNet« station work beautifully in combination with each other.

Technical Data

Axes

X-Axis	320 mm
Y-Axis	430 mm
Z-Axis	270 mm
C-Axis	360°
B-Axis	± 22°
E-Axis	150°
F-Axis	80 mm
Positioning accuracy of CNC-Axes	0.001 mm
Repeat accuracy of CNC-Axes	0.001 mm
Worktable	420 x 460 mm
Electrode Width	Up to 70 mm
Diamond tools/saws-ø	400/480 mm
Shear cut	Up to 45°
Tool collet	ISO 40/SK 40
Electrode collet	HSK 50/32
HSK 50/10 for very narrow tooth spacing	



Control

Industrial PC with Multi-Axes processor
max. 8 axes

Operating System	Microsoft Windows®
Touch screen	17” LCD-TFT Monitor

Measuring

3-D Measuring System

Dimensions

Machine	2000 x 1300 x 2200 mm
Weight	2300 kg
Work space requirement	6000 x 4000 x 3000 mm

Ventilation

Air Capacity	800 m^3/h
Filter Class	F9H13 activated carbon

Safety Systems

Double safety through two self-sustaining fire warning systems.

At impending danger the eroding process is automatically stopped at once

Fire extinguishing system CO_2 — Fill-up quantity 6 kg

Electrical Data

Input voltage	8 kW 230/400 V-50 Hz/60 Hz
Fuse	400 V/20 A
Electrical network	TN-S System

Color

RAL 7016 / 9006 / 9007

LACH-DIAMANT reserves the right to make product improvements and technical changes!

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