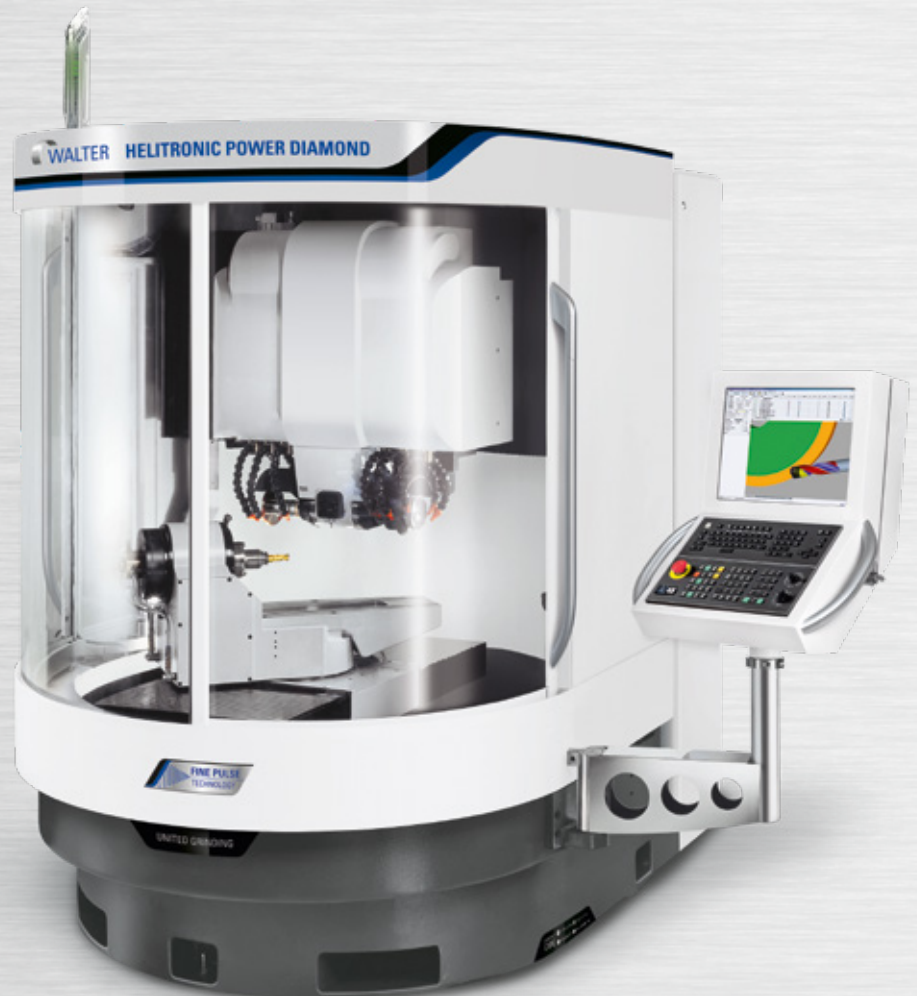


HELITRONIC POWER DIAMOND

Rotary eroding and grinding machine
Two-in-one



Key features

Switching between rotary eroding of PCD/CBN tools and grinding of HM/HSS tools is the particular strength of the HELITRONIC POWER DIAMOND within the HELITRONIC family. Tool diameter ranges from 3 to 400 mm, machine lengths can be up to 350 mm and each item may weigh up to 50 kg.



Grinding



Eroding



Laser



Measuring



Software



Customer Care

Walter Maschinenbau GmbH

WALTER has produced tool grinding machines since 1953. Today, our product range is supplemented by tool eroding machines and fully automated CNC measuring machines in the HELICHECK series for contactless complete measurement of tools and production parts.

Walter Maschinenbau GmbH is part of the UNITED GRINDING Group. Together with our sister company, Ewag AG, we consider ourselves to be a supplier of systems and solutions for the complete machining of tools and can offer a wide range of products, including grinding, rotary eroding, laser machining, measurement and software.

Our customer focus and our global sales and service network of company-owned locations and employees has been appreciated by our customers for decades.

HELITRONIC POWER DIAMOND

With belt-driven spindle for max. 6 electrodes/grinding wheels. This tailoring to customer requirements shows how productive the HELITRONIC POWER DIAMOND can be. It is at the forefront for surface quality and precision in a wide range of materials.



Grinding



Eroding



Software

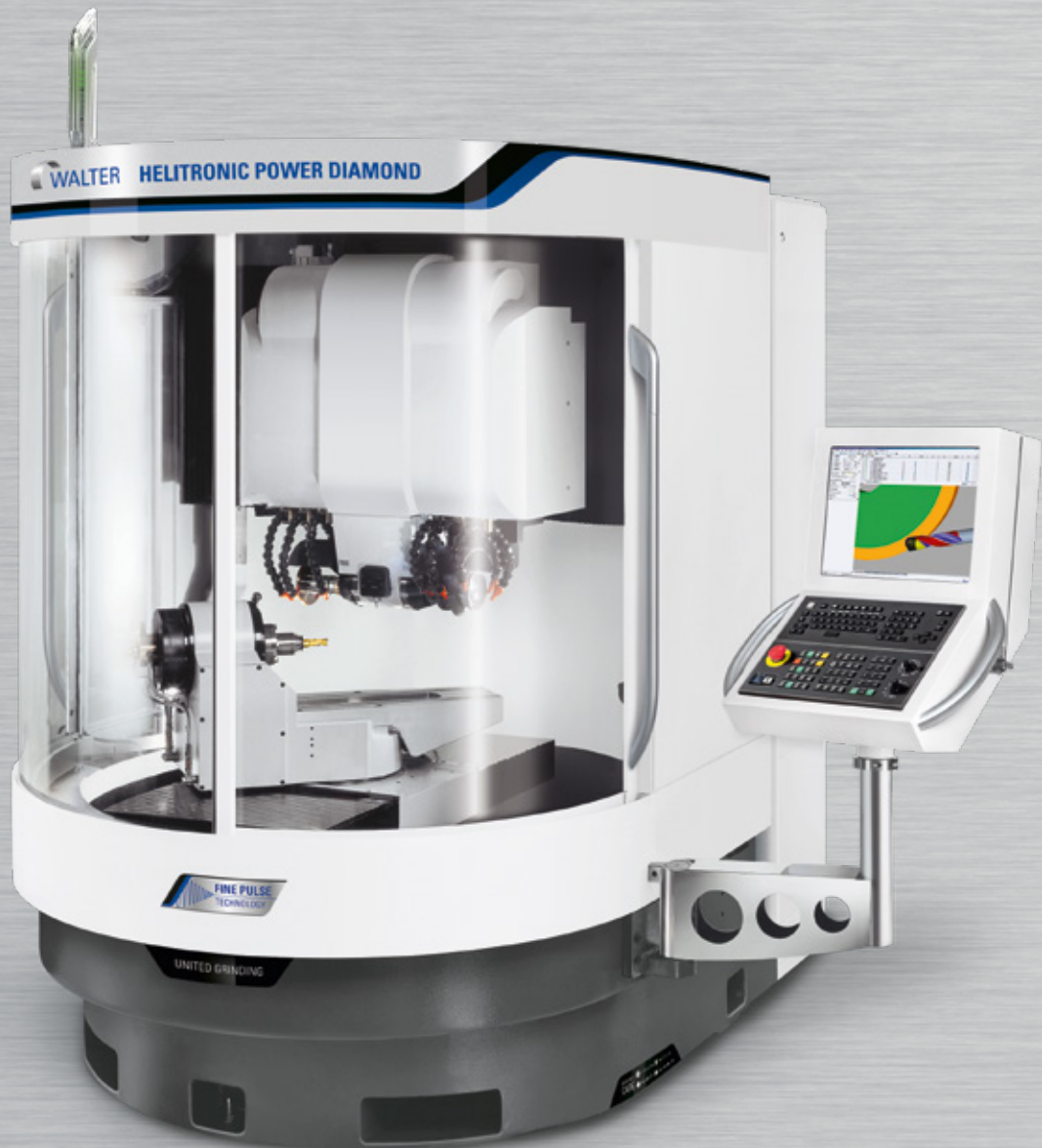
The HELITRONIC POWER DIAMOND at a glance

Application

- Rotary eroding and grinding of rotationally symmetrical tools for metalworking and woodworking industries
- For production and/or regrinding
- Fully automated, complete machining in a single clamping cycle
- Materials include PCD, CBN, HSS, carbide, cermet, ceramic

Machine

- Low vibration, solid grey cast iron, gantry type construction
- X, Y, Z linear axes with ball-type linear drive
- A, C rotating axes with worm drives
- Belt-driven spindle with two ends
- Each spindle end can take up to 3 rotating electrodes/grinding wheels
- FINE PULSE TECHNOLOGY for highest surface quality
- FANUC, the global standard for control equipment
- A variety of automatic loading systems
- Numerous efficiency options



HELITRONIC POWER DIAMOND – with a belt-driven spindle and two ends.

Software

- HELITRONIC TOOL STUDIO, CAD/CAM software for design, programming, simulation and production
- Walter Window Mode WWM
- Numerous software options to extend the system's performance and to increase its efficiency



HELITRONIC POWER DIAMOND with chain loader –
the high level, high-performance version for minimally-manned multi-shift operation.

New performance class for PCD tools

1



With FINE PULSE TECHNOLOGY, HELITRONIC POWER DIAMOND is at the forefront when it comes to quality for PCD tools. It is an economic investment for both the production and resharpener of PCD/CBN tools in the diameter range of up to 320 (400) mm.

It is possible to save time by machining complex geometries in a single clamping cycle. The combination of rotary eroding & grinding provides a real step forward in terms of flexibility and quality. Furthermore, thanks to its two-in-one principle, the HELITRONIC POWER DIAMOND can be used as a grinding machine for the production and resharpener of carbide tools. The changeover from PCD to carbide tools is «on the fly», since it is possible to automatically change between PCD and carbide tools and back again.



Example tools (from left to right):

PCD end milling cutter, high-performance edge milling cutter, high-performance end milling cutter, PCD reamer, PCD drill, 2 x PCD multi-step tools, PCD stepped drill bit, PCD end milling cutter, PCD spiral drill, PCD stepped drill bit, compression router

Innovative WALTER grinding and rotary eroding equipment

1



WALTER gantry design

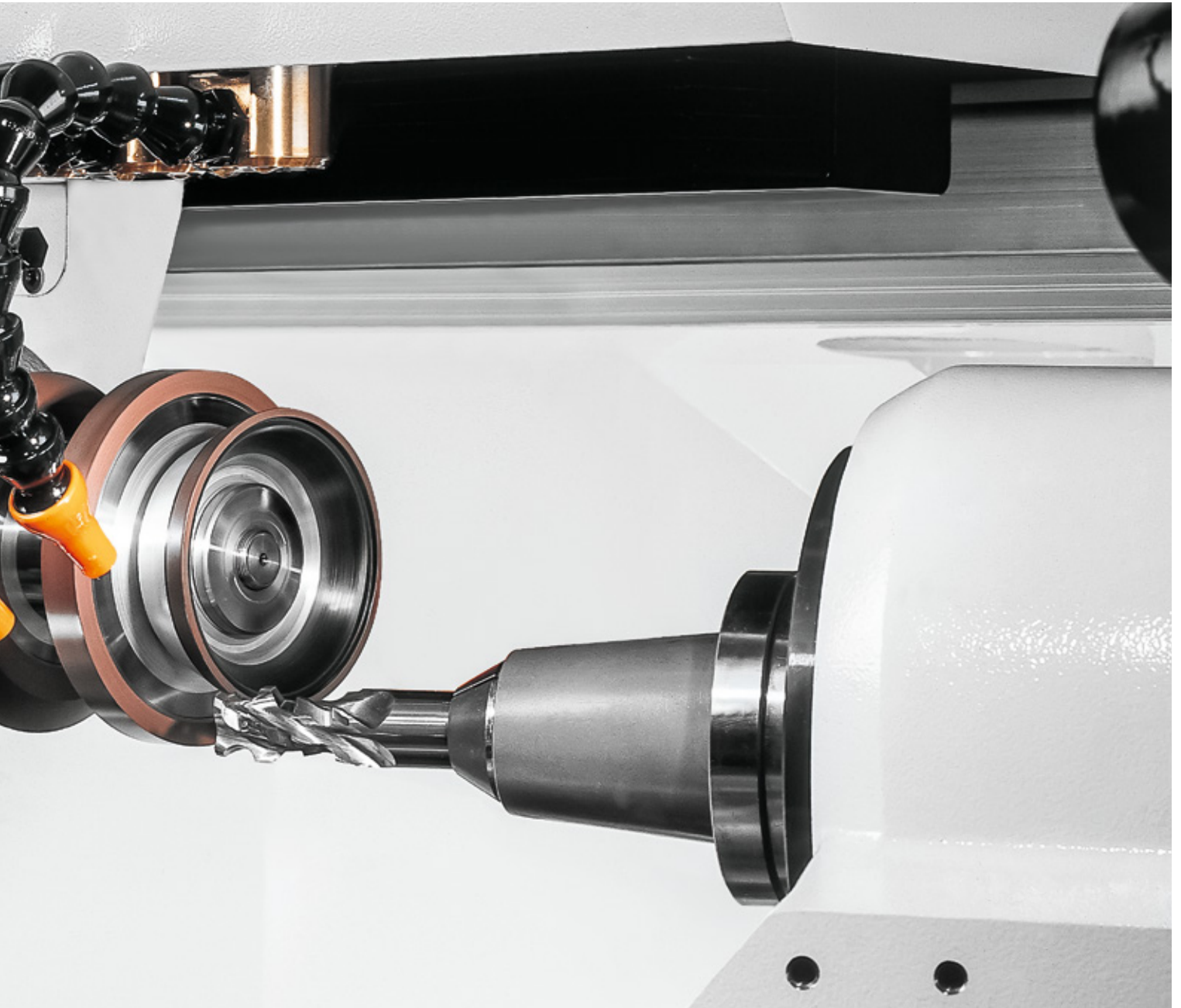
The WALTER gantry design with its excellent stability properties and extreme rigidity converts the high dynamism of the digital drives into low-vibration grinding precision.

Belt-driven spindle

The belt-driven spindle has two ends for up to 3 electrodes and up to 3 grinding wheels or alternatively, for up to 6 grinding wheels. With this range, even complex geometries can be machined with just one clamping cycle for the workpiece. The complete sets of electrodes and grinding wheels are assigned to the spindle end concerned and are saved together with all of their data.

Automatic positioning and measurement system "Heli-Probe"

Heli-Probe records important tool parameters for a perfectly positioned tool in the shortest space of time. This is the best precondition for quick and accurate grinding, quality and productivity.



**Outstanding surface quality,
longer service life, more precision**

With FINE PULSE TECHNOLOGY, the eroding process is so tightly regulated that excellent surface qualities are achieved. This also results in a parallel vast improvement in chipping. For the user, the improved PCD quality offers longer service life and increased precision.

Glass scales

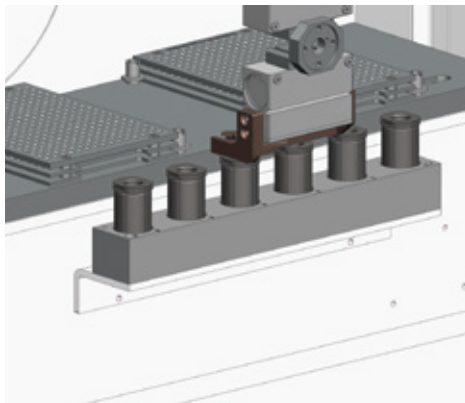
All linear axes are equipped with glass scales. The greater precision that results is fully implemented into grinding precision.

Automation options



Robot loader

The robot improves accessibility to the workpieces and makes special applications possible. Depending on the type of workpiece or the workpiece diameter, up to 7,500 workpieces can be loaded using the robot.



"Multi-Range" equipment package for robot loaders

The Multi-Range equipment package sets new standards in terms of flexibility. Large diameter coverages with a pair of gripper fingers and a collet replacement (Schunk bayonet) are possible with this equipment package.



"Combi" equipment package for robot loaders

Gripper rapid replacement system for handling cylindrical tools and tools with HSK-63 mounting shank. The word "Combi" is an exact description of the contents of this equipment package: Namely the two equipment packages "Cylindrical tools" and "HSK" plus the rapid replacement interface for fast, user-friendly retooling.

Advantages of the "Combi" equipment package

- Rapid replacement sequence thanks to only one cylinder head screw
- Pallets that have already been taught do not need to be taught again when grippers are replaced
- Pneumatics and teaching cable need to be connected only once (installation)
- Retrofitting at existing robots possible (software must be adapted)
- Easy handling
- Ergonomic form



Chain Loader 300plus

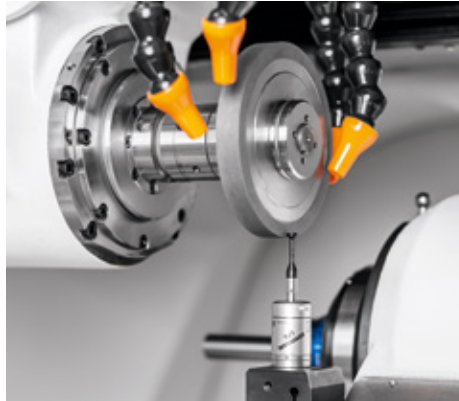
The chain loader with an HSK interface is designed for 70 tools up to a diameter of 63 mm, or 35 tools up to a diameter of 160 mm, or 21 tools up to a diameter of 320 mm. This is a globally unique system for the production and resharp-ening of rotationally symmetrical tools.



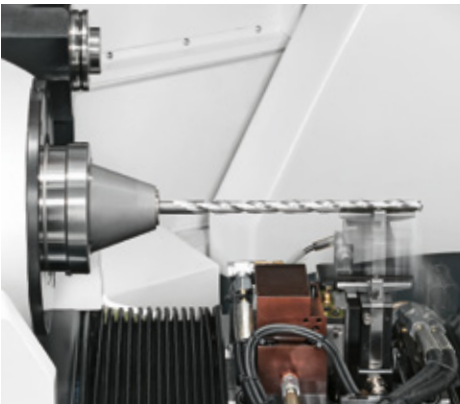
Eco loader/Eco Plus loader

With up to 20 tool positions as an Eco Loader. Also possible as an Eco Plus loader with up to 165 tool positions. The Eco Loader is mounted on the work table. The gripper is integrated into the grinding head. Preferred use is with single pieces and small series. This proximity to the grinding unit means short auxiliary process times. All loader functions are coordinated by the machine control unit. An effective automation measure for large and small businesses.

1



2



Heli Contour Check HCC

Machine-integrated camera measurement system for measuring the tool contour directly after grinding, without re-chucking the tool for very high degrees of accuracy. This way the measured contour errors can be directly adjusted.

Automated work table

The automated work table option can be equipped with up to two upper slides: one automatic and one permanent. This way, long tools can be supported by a moveable steady rest and/or a tailstock. The surface quality and tool precision is increased thanks to the constant support at the contact point of the grinding wheel.

Automatic grinding wheel measurement

For even more efficient production. Normally the machine operator corrects the grinding wheel data in the production process manually so that the geometry of the tool can be maintained at its nominal dimension. With the automatic grinding wheel measurement, the wear on the bond of the grinding wheels can be determined automatically via tactile measurement, exactly documented and compensated for. The measurement is carried out during the production process. Diameter and length of the grinding wheel can be measured and compensated for. This means that the operator always has the optimum grinding wheel data at the desired time. Furthermore, the user can monitor the grinding wheel wear and thus influence the production process and optimise it.

The probe for the tactile measurement is fitted on the tool carrier and is mounted in place of the electrical dresser.

Automatic, electrical measurement of the machine reference (AEMDM)

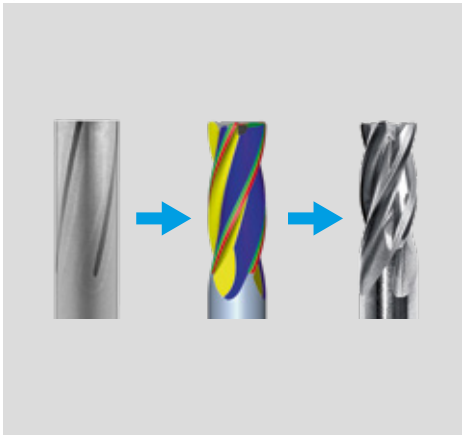
Now use the advantages of the automatic, electrical measurement of the machine reference in the grinding and eroding machines from WALTER.

Advantages of AEMDM

- Maximum precision of measurement results through exact positioning of the axes via electrical contact
- Significant time savings with automatic operation in comparison to the manual measurement method
- Valuable working time of the employees can be used for other tasks
- Eliminates errors caused by the human factor
- Short amortisation time for your investment

HELITRONIC TOOL STUDIO with Licence Erosion

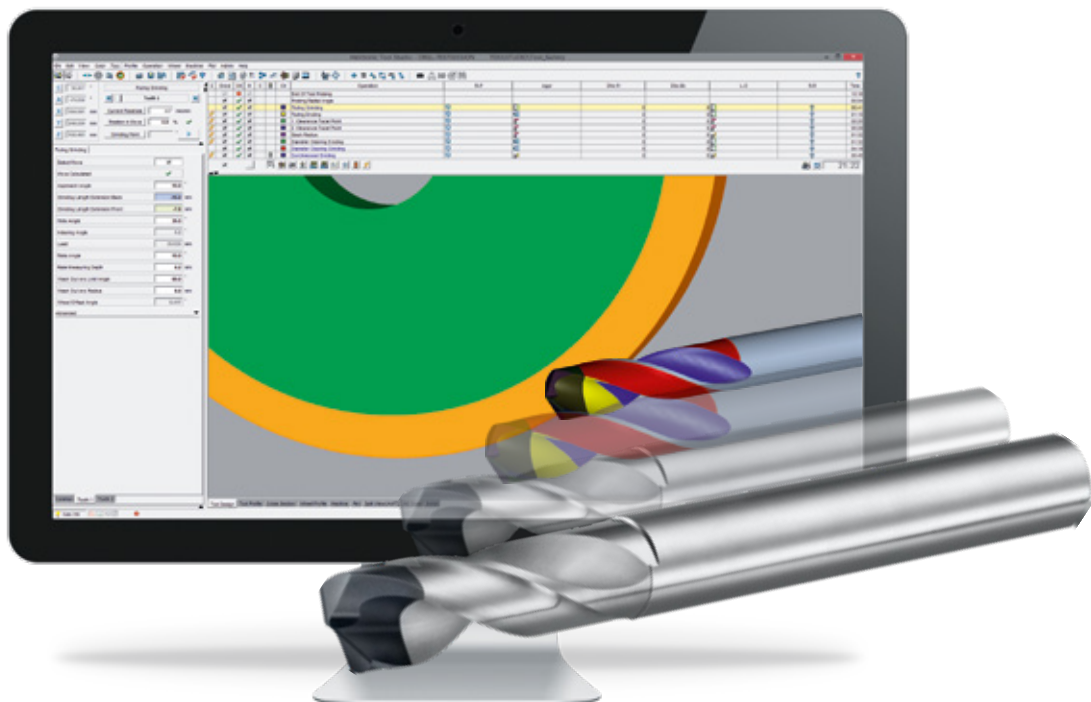
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- Time savings through comprehensible and simple operation
- Simulation of grinding and/or eroding operations directly on the machine or at the PC workstation
- High-precision integrated 3D-Live-Simulation – Real-time depiction of all parameter changes
- Click & Edit – simple selection of operations by clicking directly on the simulation model
- Flexible modular system – freely combinable and extendible operations for future further developments

New benchmarks for tool design in PCD tools with HELITRONIC TOOL STUDIO

“What you see is what you grind” – This is the motto for grinding with the HELITRONIC TOOL STUDIO. If one would like to describe the advantages of Licence Erosion in a single sentence, then the best choice would be: “What you can grind, you can also erode”. Thanks to the wizard technology, the operator needs only a few mouse clicks for the production of a perfect PCD tool: Design, programming, simulation and production.



FINE PULSE TECHNOLOGY

New standard – new benchmark

- Greatly improved surface quality
- Perfect blade edge quality
- High process reliability even with difficult-to-erode PCD
- Maximum flexibility with different types of tools
- Short machining times
- Latest state-of-the-art technology
- Optimisation possibilities with all generator codes
- Savings potential in the production chain of PCD tools

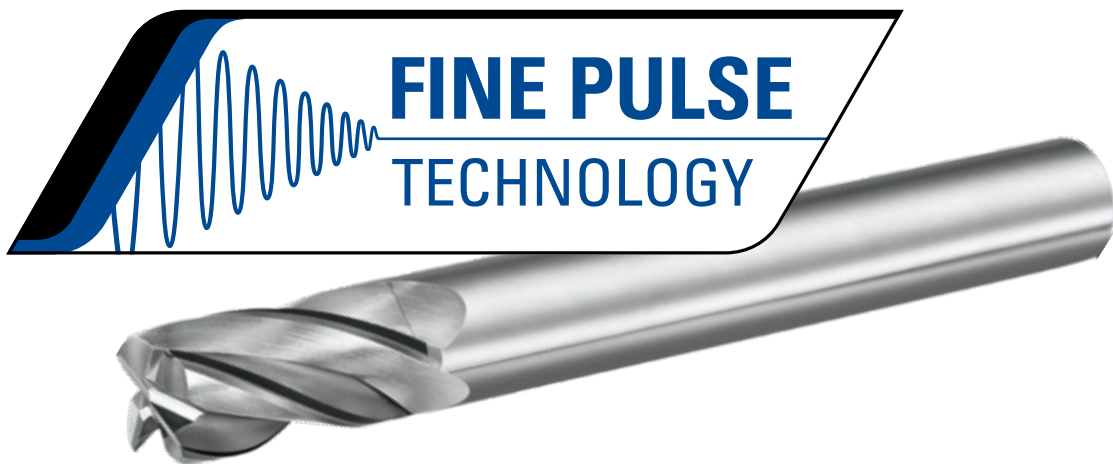


FINE PULSE TECHNOLOGY –

Visible improvement with the naked eye

The new "FINE PULSE TECHNOLOGY" eroding concept sets new standards in terms of the surface quality, cutting edge roughness and process reliability of PCD tools. The basis for this is the new liquid-cooled generator with an increased pulsation frequency. It is now standard-installed in all "Two-in-one" eroding and grinding machines from WALTER.

The difference to the other tools on the market can even be seen with the naked eye on the most common PCD types with 10 µm grain size. A tool produced with "FINE PULSE TECHNOLOGY" on a WALTER eroding machine shines on its free surface, similar to a polished (ground) tool.



Global standard of control technology



- Multi-processor system – high system security
- FANUC bus for digital drives – fault-free communication
- CNC and robots from a single manufacturer – no interface problems
- 19-inch touchscreen as standard

With the FANUC control unit, WALTER relies on the global standard of control technology. For the user, this means the highest degree of reliability, availability and operating comfort.

WALTER, famous for tool machining, and FANUC, the No. 1 in CNC control units, together make an unbeatable team.

Customer Care

WALTER and EWAG deliver systems and solutions worldwide for all areas of tool machining. Our claim is based on ensuring maximum availability of our machines over their entire service life. For this we have thus bundled numerous services in our customer care program.

From "Start up" through "Prevention" to "Retrofit", our customers enjoy tailor made services for their particular machine configuration. Around the world, our customers can use helplines, which can generally solve a problem using remote service. In addition to that, you will also find a competent service team in your vicinity around the world. For our customers, this means:

- Our team is close by and can quickly be with you.
- Our team will support you to improve your productivity.
- Our team works quickly, focuses on the problem and its work is transparent.
- Our team solves every problem in the field of machining tools, in an innovative and sustainable manner.

**Start up**

Commissioning
Extension of the guarantee

**Qualification**

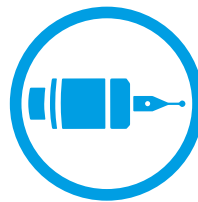
Training
Support for production

**Prevention**

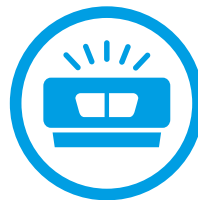
Maintenance
Inspection

**Service**

Customer service
Customer advice
Helpline
Remote service

**Material**

Spare parts
Replacement parts
Accessories

**Rebuild**

Machine overhauling
Refurbishing of assemblies

**Retrofit**

Conversions
Retrofitting parts
Taking machines back

Technical data, dimensions

Mechanical axes

X axis	460 mm
Y axis	320 mm
Z axis	660 mm
Rapid traverse speed X, Y, Z	max. 15 m/min
C axis	± 200°
A axis	∞
Linear resolution	0.0001 mm
Radial resolution	0.0001°

Grinding spindle drive

Belt-driven spindle (standard)

Max. grinding wheel diameter	200 mm
Max. diameter of rotating electrode	6 – 200 mm
Grinding spindle speed	0 – 10,500 rpm
Spindle ends	2
Tool holder	NCT
Peak power	11,5 kW
Spindle diameter	80 mm

High-performance belt-driven spindle with 24 kW (optional)

Max. grinding wheel diameter	200 mm
Max. diameter of rotating electrode	6 – 200 mm
Grinding spindle speed	0 – 7,000 rpm
Spindle ends	2
Tool holder	NCT
Peak power	24 kW
Spindle Diameter	80 mm

Others

Weight of machine including coolant system	approx. 4,600 kg
Power consumption at 400 V/50 Hz	approx. 25 kVA

Coolant system

Tank capacity	approx. 480 l
Frequency-controlled pump	max. 100 l/min at 3.5 – 7 bar

Tool data ¹⁾

Min. tool diameter	3 mm
Max. tool diameter	400 mm
Max. tool diameter with automation upper plate	290 mm
Max. workpiece length, peripheral grinding ²⁾	350 mm
Max. workpiece length, end face grinding ²⁾	280 mm
Max. workpiece weight	50 kg

Options

Coolant system

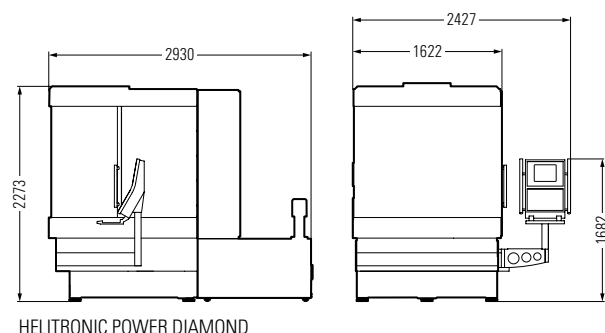
On request – several types are possible

Loading systems

Eco loader/eco loader plus, chain loader 300plus, robot loader

Others

Frequency-controlled pump 80 – 120 l/min at 7 – 20 bar, belt-driven spindle with 24 kW peak power, high-frequency spindle, torque motor 750 rpm. Heli Contour Check HCC, automation upper plate, software, automatic grinding wheel measurement, automatic electrical measurement of the machine reference, etc.



¹⁾ The maximum tool dimensions depend on the type of tool and its geometry, as well as the type of machining.
²⁾ Starting from the theoretical taper diameter of the tool carrier.

Dimensions in mm, subject to modifications due to technical progress and errors.
 No guarantee is provided for this information.

Creating Tool Performance

WALTER and EWAG are globally acting market-oriented technology and service companies, and are system and solution partners for all areas of tool machining. Our range of services is the basis for innovative machining

solutions for practically all tool types and materials typical for the market with a high degree of added value in terms of quality, precision, durability and productivity.



Grinding – Grinding of rotationally symmetrical tools and workpieces

WALTER machines	Use	Materials	Tool dimensions ¹⁾ max. length ²⁾ / diameter
HELITRONIC ESSENTIAL	P R	HSS TC C/C CBN	255 mm / Ø 1 – 100 mm
HELITRONIC MINI POWER	P R	HSS TC C/C CBN	255 mm / Ø 1 – 100 mm
HELITRONIC MINI AUTOMATION	P R	HSS TC C/C CBN	255 mm / Ø 1 – 100 mm
HELITRONIC BASIC	P R	HSS TC C/C CBN	350 mm / Ø 3 – 290 (320) mm
HELITRONIC POWER	P R	HSS TC C/C CBN	350 mm / Ø 3 – 290 (320) mm
HELITRONIC POWER 400	P R	HSS TC C/C CBN	520 mm / Ø 3 – 315 mm
HELITRONIC VISION 400	P R	HSS TC C/C CBN	370 mm / Ø 3 – 315 mm
HELITRONIC VISION 400 L	P R	HSS TC C/C CBN	420 mm / Ø 3 – 315 mm
HELITRONIC VISION 700 L	P R	HSS TC C/C CBN	700 mm / Ø 3 – 200 mm
HELITRONIC MICRO	P R	HSS TC C/C CBN HSS TC C/C CBN	120 mm / Ø 0.1 – 12.7 mm 120 mm / Ø 3 – 12.7 mm

EWAG machines	Use	Materials	Tool dimensions ¹⁾ max. length ²⁾ / diameter
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	200 mm / Ø 0.2 – 200 mm
PROFILE LINE	P R	HSS TC C/C CBN	255 mm / Ø 1 – 100 mm
WS 11/WS 11-SP	P R M	HSS TC	– / up to Ø 25 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø 25 mm



Eroding – Electrical discharge machining and grinding of rotationally symmetrical tools

WALTER machines	Use	Materials	Tool dimensions ¹⁾ max. length ²⁾ / diameter
HELITRONIC DIAMOND EVOLUTION	P R	HSS TC C/C CBN PCD	185/255 mm / Ø 1 – 165 mm
HELITRONIC POWER DIAMOND	P R	HSS TC C/C CBN PCD	350 mm / Ø 3 – 290 (400) mm
HELITRONIC POWER DIAMOND 400	P R	HSS TC C/C CBN PCD	520 mm / Ø 3 – 380 mm
HELITRONIC VISION DIAMOND 400	P R	HSS TC C/C CBN PCD	370 mm / Ø 3 – 315 mm
HELITRONIC VISION DIAMOND 400 L	P R	HSS TC C/C CBN PCD	420 mm / Ø 3 – 315 mm



Software – The intelligence of tool machining and measuring for production and regrounding



Customer Care – Comprehensive range of services

Use: **P** Production **R** Regrinding **M** Measuring

Materials: **HSS** High speed steel **TC** Tungsten carbide **C/C** Cermet/ceramics **CBN** Cubic boron nitride **PCD** Polycrystalline diamond **CVD-D** Chemical vapour deposition **MCD/ND** Monocrystalline diamond/natural diamond



Grinding – Grinding of indexable inserts

EWAG machines	Use	Materials	Indexable inserts ¹⁾ Inscribed / circumscribed circle
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	Ø 3 mm / Ø 50 mm
PROFILE LINE	P R	HSS TC C/C CBN	Ø 3 mm / Ø 50 mm
COMPACT LINE	P R	HSS TC C/C CBN PCD	Ø 3 mm / Ø 50 mm
INSERT LINE	P R	HSS TC C/C CBN	Ø 3 mm / Ø 75 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø 25 mm



Laser – Laser machining of indexable inserts and/or rotationally symmetrical tools

EWAG machines	Use	Materials	Tool dimensions ¹⁾ max. length / diameter
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	250 mm / Ø 0.1 – 200 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	250 mm / Ø 0.1 – 200 mm

EWAG machines	Use	Materials	Indexable inserts ¹⁾ Inscribed / circumscribed circle
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	Ø 3 mm / Ø 50 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	Ø 3 mm / Ø 50 mm



Measuring – Contactless measurement of tools, workpieces and grinding wheels

WALTER machines	Use	Tool dimensions ¹⁾ max. length / diameter
HELICHECK PRECISION	M	420 mm / Ø 1 – 320 mm
HELICHECK ADVANCED	M	420 mm / Ø 1 – 320 mm
HELICHECK PRO	M	300 mm / Ø 1 – 200 mm
HELICHECK PRO LONG	M	730 mm / Ø 1 – 200 mm
HELICHECK PLUS	M	300 mm / Ø 0.1 – 200 mm
HELICHECK PLUS LONG	M	730 mm / Ø 0.1 – 200 mm
HELICHECK 3D	M	420 mm / Ø 3 – 80 mm
HELISSET PLUS	M	400 mm / Ø 1 – 350 mm
HELISSET	M	400 mm / Ø 1 – 350 mm

¹⁾ Maximum tool dimensions are dependent on the tool type and geometry, as well as the type of machining.

²⁾ From the theoretical taper diameter of the workpiece holder.



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