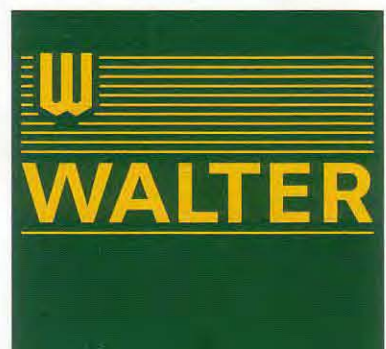


HELITRONIC POWER FAMILY



Simply No.1

**For Metallcutting Tools, for Wood-
working Tools and for Profiles
Production and Regrinding**



Helitronic Power Family

The leading group for complete machining of metalcutting and woodworking tools and of profiles

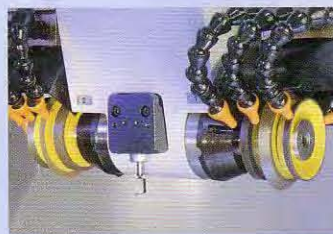
With the Helitronic Power, WALTER set a milestone. Worldwide. In flexibility, productivity and universality. Within the field of computer-aided grinding of metalcutting tools, woodworking tools, profile tools and broaches, the Helitronic Power is famous all over the world. It is leading in this domain.

At the end of this millennium the Helitronic Power series with the Windows NT operating system continues this successful story. Four models, each one absolutely top in its range of performance, enable WALTER to present themselves as the system partner for all solutions.

All four have in common their patented cast iron construction, without column, as a portal execution for a stable basis for high grinding accuracy. Furthermore, the grinding spindle with two ends and six grinding wheels enables the complete machining of intricate geometries in one single clamping. And last but not least the grinding software with tool-specific programme packages – the heart and soul for high efficiency. WALTER shows more than 25 years of software experience and is also leading in this domain.

Extremely high machine availability and productivity is achieved through the worldwide WALTER teleservice.

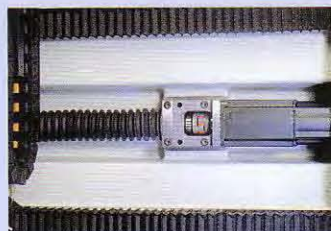
The universal application ensures outstanding efficiency and economic advantages. **The Helitronic Power Production, Helitronic Mini Power and Helitronic Power Regrinder** types can grind any metalcutting tool, any woodworking or profile tool. One machine for all, for complete machining of complex tools from batch sizes of 1 off – you can really count on it.



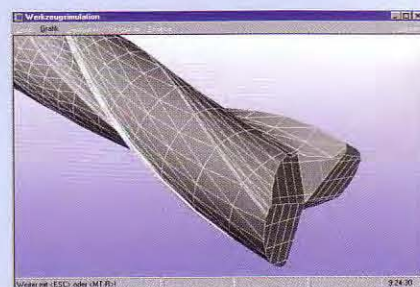
6 grinding wheels are standard. The ideal for grinding complex tool geometries in a single clamping.



With the new OMS option – optical measuring system – WALTER brings a revolutionary contribution to the optimisation of the grinding process-reliability and quality assurance.



Bellow-type coverings protect the ball screws from the ingress of dirt and coolant.



The WALTER software packages for entire workpiece families meet any requirement, with automatic tool positioning and flexible programming software.

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Helitronic Mini Power Production, complete for the production grinding of small tools



Helitronic Power Production, the new Power for the production grinding of larger tools



Helitronic Power BG, specialist for flat broaches – regrinding and production

Helitronic Power Regrinder, universal for the regrinding shop



All Helitronic Powers with patented machine construction.

Helitronic Power Production – A new standard for complete machining in grinding production

The new Helitronic Power Production is a high-performance unit with a powerful 24 kW grinding spindle motor. This motor and the stable portal construction combine the highest grinding accuracy with the highest dynamics. The grinding accuracy is supported by an incremental length measuring system in all linear axes, which compensates for any thermal influences.

The simple machine structure with few elements optimises access and handling. Short taper and face mounting provides the accurate coupling between the grinding spindle and the grinding wheel adaptor for high concentricity and maximum rigidity.

The Helitronic Power Production is entirely dedicated to production grinding of large tools. With the appropriate WALTER software, its application is universal for metalcutting tools, wood-working tools or profile tools. The advanced WALTER control technology ensures an extremely high efficiency in any situation.

Technical highlights

- 24 kW grinding spindle motor
- grinding spindle with hybrid bearing
- number of revolutions 0–7.000 min⁻¹
- 6/20 bar coolant pressure
- incremental length measuring system
- tool dimensions:
 - max. workpiece diameter 320 mm
 - max workpiece length 370 mm
 - flute grinding 370 mm
 - max. workpiece length 320 mm
 - end face grinding 320 mm



A measuring probe which is rigidly mounted onto the grinding head performs the automatic tool positioning – shorter grinding cycle



Grinding example: Step tool



Grinding centre, control unit, coolant installation and electrical cabinet are integrated into a compact unit. Well arranged, easy to clean and comfortable to handle, such is the new Helitronic Power Production. A compact construction means a smaller footprint of the machine, shorter axis travels and reduced non-productive times. Concentrated dynamics for excellent productivity.

Helitronic Mini Power Production – High-performance production grinding for small tools

The Helitronic Mini Power Production possesses the same advantageous properties as its big brother the Helitronic Power Production. It is still more compact and tailored for smaller tools.

The Helitronic Mini Power Production is also based on the advanced control technique of the Helitronic Power Production and the Windows NT operating system. The complete machining of complex tools in a single clamping and instant profitability from a batch size of 1 off, round up the image of a high-performance grinding centre.

Technical highlights

- 9 kW grinding spindle motor
- grinding spindle with hybrid bearing
- number of revolutions 0–9.500 min⁻¹
- 6 bar coolant pressure
- incremental length measuring system
- Tool dimensions:

max. workpiece diameter	100 mm
max. workpiece length flute grinding	270 mm
max. workpiece length end face grinding	200 mm

Online Tool Compensation OTC – Combination Helitronic Mini Power Production or Helitronic Power Production with the universal measuring machine Helicheck



The WALTER measuring technology, with non-contact, automatic multi-sensor measurement technique for complex precision tools and production workpieces meets the highest international standards. With the Online Tool Com-

pensation OTC, WALTER opens the way to an on-line link between the Helicheck measuring machine and one or several WALTER CNC grinding machines. This closed system between production and quality assurance shows to the tool

manufacturer or the tool regrinder that future-securing production methods are affordable.



Super-compact means for the Helitronic Mini Power Production a still smaller machine footprint, extremely short axis travels and reduced non-productive times. Concentrated dynamics for outstanding productivity in the production of small tools or intricate workpieces.

Helitronic Power Regrinder – Tool grinding in regrinding shops The universal solution

The Helitronic Power Regrinder was designed for regrinding shops looking for an universal solution for the complete machining of any type of tools. Its great force is its high flexibility thanks to the WALTER control technology and the “best practice” grinding software. Quick tool changes with minimum non-productive times are possible.

Further plus points are its easy operation and its multitasking ability. While tool X is reground, the machine operator prepares the grinding programme for tool Y.

For a minimally manned operation in several working shifts, the combination Helitronic Power Regrinder with loader is recommended.

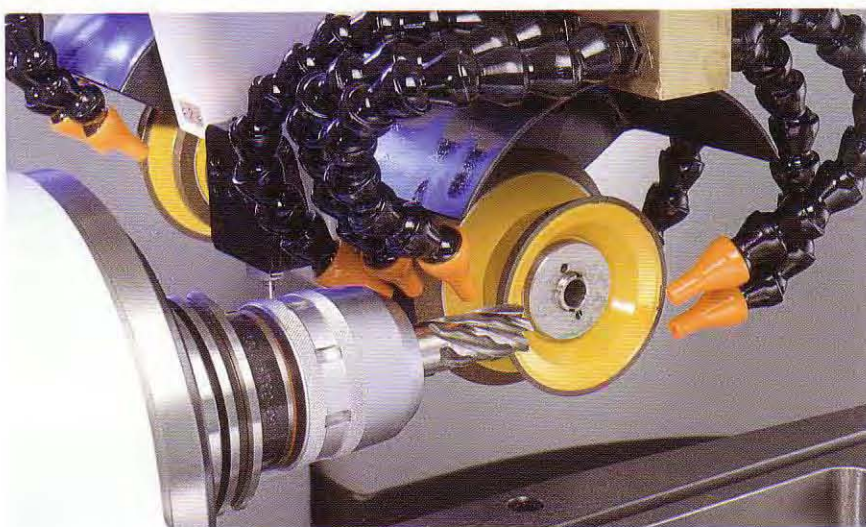
For the regrinding with profits the Helitronic Power Regrinder is the ideal instrument. Suitable for complete machining with a batch size of 1 off, it is unbeatable with regards to productivity and profitability.



Technical highlights

- 11,5 kW grinding spindle motor
- grinding spindle with hybrid bearing
- number of revolutions 0–8.500 min⁻¹
- 6 bar coolant pressure
- Tools dimensions:

max. workpiece diameter	320 mm
max. workpiece length flute grinding	370 mm
max. workpiece length end face grinding	320 mm



Grinding example: Crest Cut



Helitronic Power Family with Loader

The new dimension in automation for production workshops

The automatic loading and unloading system for the CNC grinding machines of the Helitronic Power family enables even higher productivity for the company with few operators. Different loaders adapted to this high-performance machine are available:

Loader 1

Helitronic Mini Power Production

Workpiece dimensions:
range of diameters from 1 to 12.7 mm,
max. length 160 mm
Loader capacity:
up to approx. 630 workpieces,
depending upon diameter

Loader 2

Helitronic Power Production

Workpiece dimensions:
diameters from 3 to 32 mm,
max. length 220 mm
Capacity:
up to approx. 280 workpieces,
depending upon diameter
The workpieces are arranged vertically
in the pallet.

Loader 3

Helitronic Power Regrinder

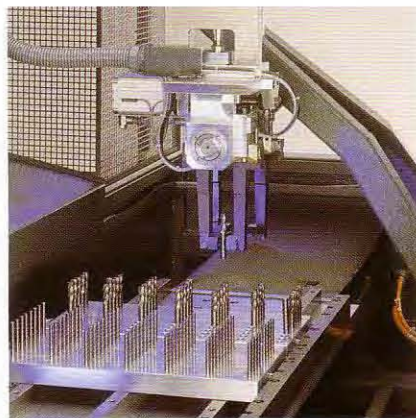
Workpiece dimensions:
diameters from 3 to 32 mm,
max. length 220 mm
Capacity:
up to approx. 280 pieces,
depending upon diameter

Loader 4

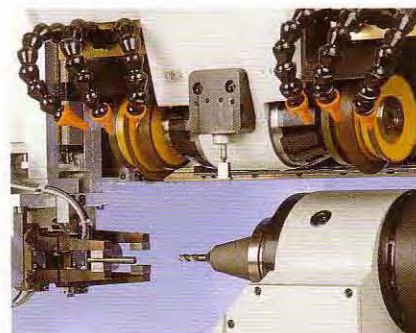
"Mushroom" loader for the Helitronic Power Family

For tools having a shank diameter
smaller than their tool diameter,
a "mushroom" loader is available.

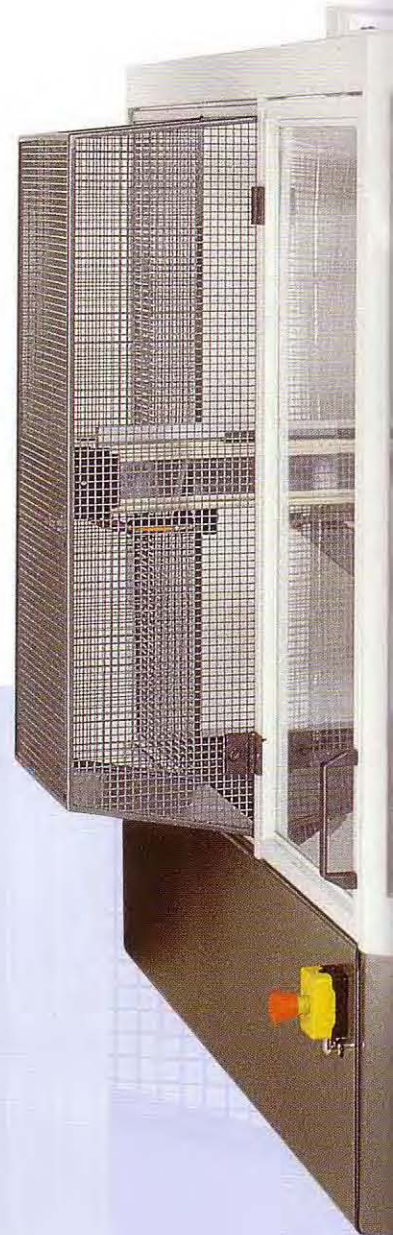
All loaders are directly attached to and form a single unit together with the grinding machine. The movements of the loader and of the pallet are driven by CNC axes. The workpieces are handled by a pneumatic double gripper. All loader functions are coordinated by the WALTER HMC 500 control.



*Different tools on one pallet – no problem!
They will be automatically machined*



*Working situation: Automatic tool changing
and tool diameter compensation with the
measuring probe*





Helitronic Power Production with production loader for automatic production grinding in several shifts. The grinding machine is programmed for the next pallet whilst the grinding of the tools on the pallet is completed. The grinding cycle starts immediately after the change of pallet.

Helitronic Power BG – Regrinding or production Specialist for flat broaches

The Helitronic Power BG with five CNC axes represents the top grinding technology for the regrinding and production of flat broaches.

In its construction size, it is identical with the Helitronic Power Regrinder. A magnetic plate on the C axis is used as the clamping system. The C axis enables the orientation of the broach to the required angle in respect to the grinding spindle. In place of the A axis, the Helitronic Power BG has the D axis, a swivelling axis for the grinding head.

This axis configuration allows the machining of the most intricate geometry in a single clamping with short grinding cycles thanks to the optimisation of the grinding operations.

Technical highlights

- 9 kW grinding spindle motor
- grinding spindle with hybrid bearing
- number of revolutions
0 – 12.000 min⁻¹
- 6 bar coolant pressure
- Dimensions of the broaches,
i.e. for straight teeth
length 610 mm, width 205 mm
for oblique teeth under 20 degrees
length 610 mm, wide 115 mm
- clearance angle max. 10 degrees
- tool orthogonal rake
max. 15 degrees



Grinding flat broaches requires high flexibility from the grinding head with the D axis.
It is visible here for grinding – from left to right – the flute, the clearance face and the chipbreaker

CNC WALTER HMC 500 Control

A class of its own

With Modem for Teleservice

The innovative characteristics of the new control generation WALTER HMC 500, a digital control and drive system based on PC are:

- clear and well-arranged control panel with a 15" screen – no double function of the control keys – reduced possibilities of errors, and push buttons with optical acknowledgement
- built-in PC in the machine control unit, ensuring
- easier and quicker control
- all computations take place directly in the control unit
- parallel data input thanks to multitasking system
- ZIP driver, Production series
- Windows NT operating system

With the Windows NT operating system, new control panels and a simpler, more understandable operating design, the WALTER HMC 500 is a generation for the future:

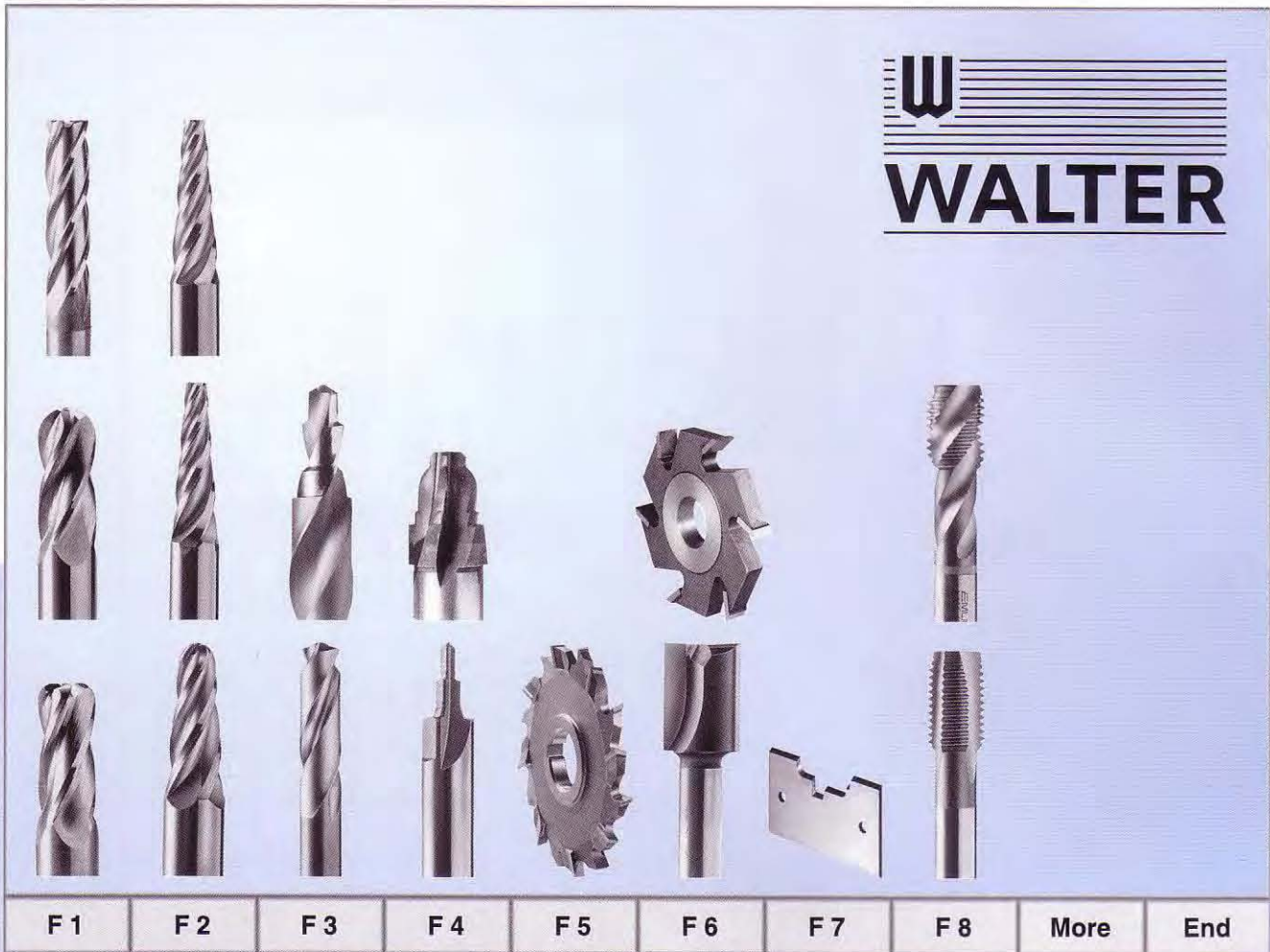
- for control comfort and quality
- for ergonomics and universality
- for performance and reliability

The standard modem allows a remote diagnostic from the WALTER Diagnostic Centre, anywhere in the world, no matter the distances.



WALTER Software Strategy

Software packages for tool families and for custom-made menus



Behind the WALTER software strategy there is an experience of 25 years in this domain. A unique know-how. Today, WALTER proposes programme packages for all of the usual tool families. In addition new programmes are continuously being developed, such as "Flexible Programming". In this way WALTER changes the tool grinder into the tool designer, without time-consuming training and with an immediately visible success. High speed for the grinding practitioner.

Pressing the corresponding function key is enough to go to the required programme package:

- P1 "Cylindrical milling cutters"
- P2 "Conical helical cutters"
- P3 "Drills and step drills"
- P4 "Step tools"
- P5 "Side and Face milling cutters"
- P6 "Woodworking tools"
- P7 "Profile tools"
- P8 "Taps"

The "Continue" key enables the following further programmes.

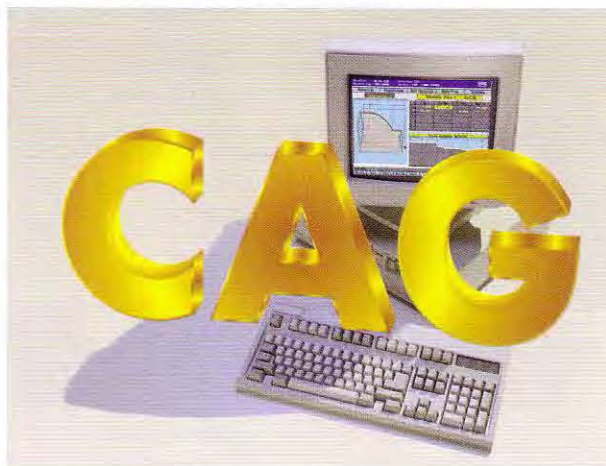
- P11 "Crest Cut milling cutters"
- P13 "Reamers"
- P ...



Handling comfort according to WALTER: only the operation-relevant parameters are displayed. A graphics-aided grinding wheel management system ensures the grinding wheel choice in accordance with the requirements.

Computer Aided Grinding

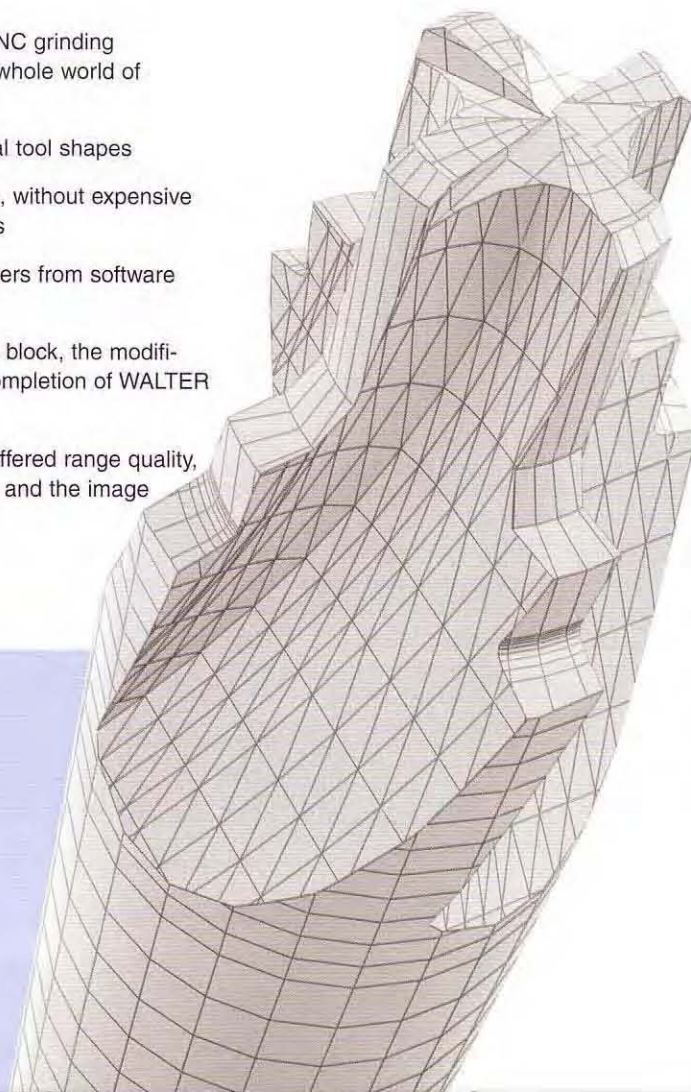
An important step towards the future is the further improvement of the well-proven WALTER software under the general title WALTER CAG "Computer-Aided Grinding" technology. This software greatly simplifies the way from the CAD design via the software or the grinding machine to the precision tool. The tool contours are simulated in a dxf file. Data handling and software generation are also supported, and the grinding cycles are reduced. The advantages, such as increased profitability and flexibility, are particularly important for intricate tool geometries.



WALTER Software "Flexible Programming"

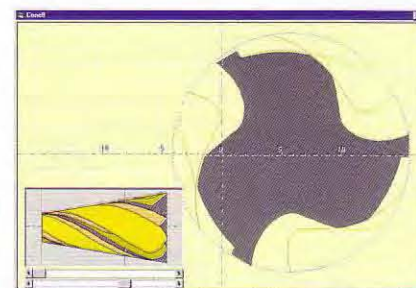
This software brings the tool grinding specialist an important instrument for securing his future. Flexible programming

- opens to the CNC grinding specialists the whole world of special tools
- realises unusual tool shapes
- is easy to learn, without expensive training courses
- releases the users from software suppliers
- enables via NC block, the modification or the completion of WALTER programmes
- increases the offered range quality, the productivity and the image



Simulation Programmes

The simulations of grinding operations contribute to a reduction of the non-productive and auxiliary times as well as of the costs per workpiece. They offer to the user decisive advantages such as the computation of the grinding time, the analysis of collisions or checking of the geometry. Together with the standard WALTER software, simulation programmes increase the flexibility, the accuracy and the performance. The following programmes i.e. are available



Flute computation programme "Heli-Flute + Cone"

for cylindrical and conical tools

Flute computation programmes "Heli-Drill"

for peel grinding the lead of a tap as well as of helical drills and step drills

Technical specifications

Helitronic Power Family

Type		Power Production	Mini Power Production	Power Regrinder	Power BG ¹⁾
Order no.		306 082-597	306 086-597	305 975-597	300 390-597
Colour		RAL 7035/7043	RAL 7035/7043	RAL 7035/7043	RAL 7035/7043
axis					
X axis	Longitudinal traverse	490 mm	350 mm	490 mm	490 mm
	Max. speed	15 m/min	15 m/min	15 m/min	15 m/min
Y axis	Vertical motion	320 mm	200 mm	320 mm	320 mm
	Max. speed	15 m/min	15 m/min	15 m/min	15 m/min
Z axis	Cross traverse	660 mm	470 mm	660 mm	660 mm
	Max. speed	15 m/min	15 m/min	15 m/min	15 m/min
C axis	Rotation				
	Swivelling range	± 200 degrees	± 200 degrees	± 200 degrees	± 200 degrees
	Max. speed	120 degrees/s	120 degrees/s	120 degrees/s	120 degrees/s
A axis	Length	175 mm	150 mm	175 mm	
	Workpiece holder	ISO 50	ISO 50	ISO 50	
	Rotation axis	∞	∞	∞	
	Height of centres (with/without upper work table)	145/190 mm	130/160 mm	145/190 mm	
	Max. tool dia. ø	320 mm ²⁾	100 mm ²⁾	320 mm ²⁾	
	Max. tool length				
	Contour grinding	370 mm ³⁾	270 mm ³⁾	370 mm ³⁾	
	Max. workpiece length				
D axis	Grinding head				
	Swivelling range				120 degrees
	Max. speed				40 degrees/s
Accuracy					
Linear resolution		0,0001 mm	0,0001 mm	0,0001 mm	0,0001 mm
Radial resolution		0,0001 degrees	0,0001 degrees	0,0001 degrees	0,0001 degrees
Grinding spindle with 2 ends for the grinding wheels					
Spindle diameter		80 mm	70 mm	70 mm	70 mm
Max diameter		200 mm	150 mm	200 mm	150 mm
per end for grinding wheels		3 coolant valves	3 coolant valves	3 coolant valves.	1 coolant valves
Peak power		24 kW	9 kW	11,5 kW	9 kW
revolutions of the grinding spindle		0–7.000 min ⁻¹	0–9.500 min ⁻¹	0–8.500 min ⁻¹	0–12.000 min ⁻¹
Weight					
Grinding machine including coolant system		approx. 4.650 kg	approx. 3.600 kg	approx. 4.450 kg	approx. 4.450 kg
Power					
requirements for 400 V/50 Hz		approx. 35 kVA	approx. 25 kVA	approx. 25 kVA	approx. 25 kVA
Built-in coolant system					
Tank capacity		approx. 500 l	approx. 350 l	approx. 500 l	approx. 500 l
Pump capacity		80–120 l/min for 6/20 bar	120 l/min for 6 bar	120 l/min for 6 bar	120 l/min for 6 bar

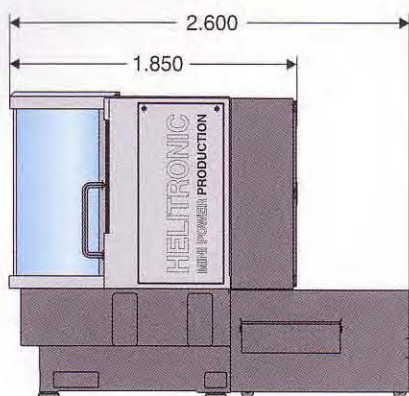
¹⁾ In place of the A axis, the Helitronic Power BG has the D swivelling axis

²⁾ Dependent on tool type

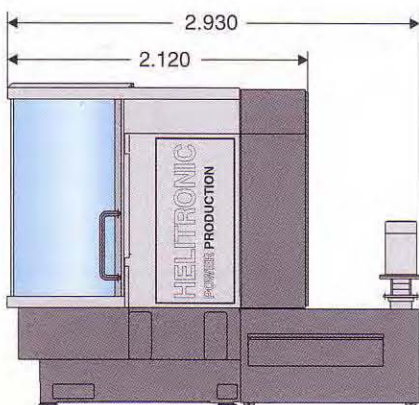
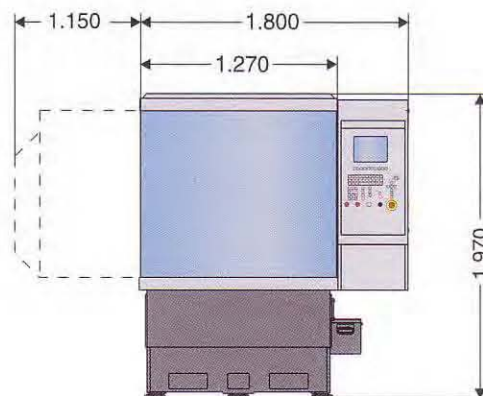
³⁾ From the gauge line of workhead

Dimensions

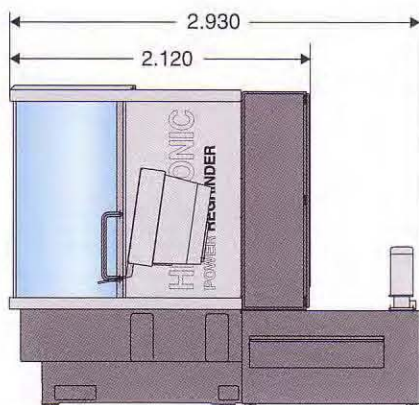
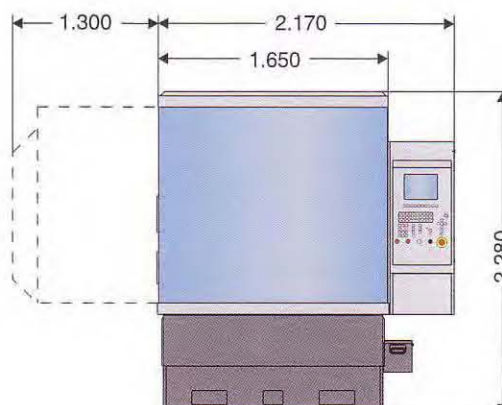
Helitronic Power Family



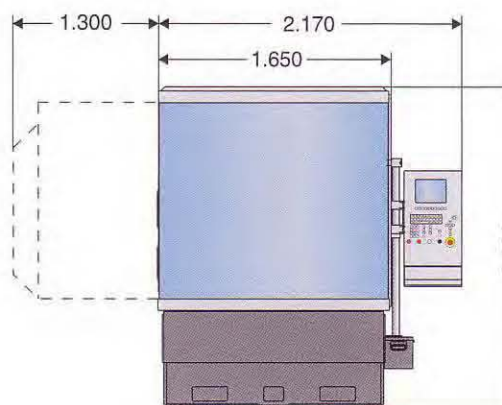
Helitronic Mini Power Production



Helitronic Power Production



Helitronic Power Regrinder/BG



All dimensions are in mm: dimensions for all machines without oil mist extraction device