HELITRONIC BASIC

The entry level to the world of premium tools

Key parameters

Within the HELITRONIC family, the HELITRONIC BASIC system embodies the ideal resharpening machine for rotationally symmetrical tools with a diameter from 3 to 320 mm and a length of up to 350 mm. Items can weigh up to 50 kg.
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.
With its 5 CNC axes, the HELITRONIC BASIC sharpens and grinds a wide spectrum of precision tools for metal and wood with the highest precision and quality. Short setup and idle times produce economic results from a batch size of 1 even in multiple shift operation with low staffing levels. For new entrants to the world of premium tools, this is a good recommendation.
### The HELITRONIC BASIC at a glance

**Application**
- Grinding rotationally symmetrical tools for metalworking and woodworking industries
- For production and/or regrinding
- Complete machining with only a single clamping cycle
- Machinable materials include HSS, carbide, cermet, ceramic

**The 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 three grinding wheels
- FANUC, the global standard for control equipment
- A variety of automatic loading systems
- Numerous efficiency options

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HELITRONIC BASIC – flexible to use thanks to its belt driven spindle with 2 ends and the Eco loader.
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

Flexibility for a wide spectrum of applications
There is no task on the market for precision tools for metal or wood which cannot be efficiently solved using the HELITRONIC BASIC system. This is why it is the first choice for resharpening companies.

Its field of applications covers all rotationally symmetrical tools to machine metal or wood, special tools as well as parts with complex geometries.

Belt-driven spindle
The belt-driven spindle with two ends can take up to six grinding wheels. The different grinding wheel sets are allocated to the relevant spindle along with the wheel measurement data.

WALTER gantry design
The WALTER gantry design with its high weight and extreme rigidity converts the high dynamic performance of the digital drives into low-vibration grinding precision.
Productivity and flexibility as the customer wants

“Eco loader” option
Up to 20 tools. 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 small businesses.

Example tools (from left to right):
T slot cutter, stepped drill bit, roughing cutter, bull nose cutter, Kevlar drill, profiled tool for wood, dual-cut milling tool, end mill, burr cutter, single point cutter
“Eco loader plus” option
Up to 165 tools. As the Eco loader plus pallets have been adapted to the Eco loader, it is possible to quickly change between an Eco loader and an Eco loader plus. This cost effective solution offers maximum flexibility and productivity.

“Torque motor 750 rpm” option
The torque motor on the A axis is an effective option to make the HELITRONIC BASIC system more flexible and more productive. At 750 rpm, the torque motor is adequately dimensioned to meet the high requirements of a wide variety of tool types. Profile grinding is no longer a problem with this option.

“Calibration” option
Calibration consists of a calibration ball and software. It is used to automatically calibrate the X, Y and Z axes of the machine with a loader. Any calibration time can be freely chosen in the loader program. Machines without a loading system can be calibrated manually.
HELITRONIC TOOL STUDIO adds operational convenience to all grinding applications

HELITRONIC TOOL STUDIO is the WALTER way to the perfect tool. According to the tried and tested method of “What you see is what you grind”, just a few mouse clicks are all that separate you from producing the perfect precision tool: Design, programming, simulation and production.

HELITRONIC TOOL STUDIO: This combines ease of programming with the greatest possible flexibility. With minimum complexity, machining steps and movement sequences for both rotationally symmetrical standard tools and for special tools can be programmed by the operator. The tool shown on the screen corresponds exactly to the tool which will then be produced. This means that, as early as the design phase, the result can be checked and, if necessary, corrected thanks to the true-to-life 3D simulation.

The operator can quickly find the tool type, the parameters to be entered and the tool by using the assistant. WALTER provides programme packages for all standard tool families, which make handling significantly easier.
Efficiency options

- Up to 30% time saved
- Optimum feed rate
- Optimize existing IDNs

Feedrate Optimizer
This enhancement to the HELITRONIC TOOL STUDIO provides the ideal options for feed control and for monitoring the grinding wheel and machine load. Depending on the tool type, the time savings can be up to 30%. Feed optimisation uses the findings entered into the HELITRONIC TOOL STUDIO in relation to grinding movements, and the grinding wheel and tool simulation model in order to calculate the current grinding wheel and machine loads and set the optimum feed at any time. Movements with low wheel loads will be accelerated and, this is particularly important, movements where the desired wheel load is exceeded are slowed down. Even existing IDNs can be conveniently optimised with just one click. First, the profile of the grinding wheel load is determined via a progressive simulation analysis. Then, the feed is optimised in such a way that the wheel load remains constant during the entire processing run.

- Analysis of the centre of gravity
- Balancing the tool

Tool Balancer
The Tool Balancer is an easy way to analyse, and balance out if necessary, centre-cutting tools with an odd number of flutes (unevenly divided tools) or special tools. The efficiency-increasing method has two core functions: One is to analyse the centre of mass and the other is to automatically balance the tool using different techniques. The approach is simple and can be mastered with just a few mouse clicks. Analysis during the development phase means that the process of prototype production can be significantly shortened. Balanced tools have a longer tool life, can machine at higher speeds, produce higher-quality surfaces and result in less wear-and-tear. Asymmetrical tools are well-suited to machining processes with high rotation speeds up to a point where significant imbalance forces occur.

- Determination of the rake angle, the outer diameter and the core diameter for cylindrical tools

Integrated Measuring System IMS
With the integrated measuring system IMS, the outside diameter, rake angle and core diameter can be measured using the probe ball without having to unclamp the tool. By setting the tolerances, HELITRONIC TOOL STUDIO can compensate for any deviation of the measured values, e.g. by thermal growth or wheel wear-and-tear, and adjust to the nominal measure and thus prevent scrap. The operator no longer needs to make active adjustments and the dressing cycle of the grinding wheels remains constant. Both increase the efficiency, especially when it comes to large-volume production.

Adaptive Control
By permanently comparing the machine loading, grinding can be made more efficient and simultaneously safer. If the load increases, the feed will be decelerated accordingly. If the load decreases, the speed is increased accordingly. With AC grinding, alternating loads on the grinding wheels will be prevented by a continual load. Any possible overloading of the grinding wheels is excluded.

- Permanent set-actual comparison for the torque
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.

Customer Care

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

<table>
<thead>
<tr>
<th>Axis</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>X axis</td>
<td>460 mm</td>
</tr>
<tr>
<td>Y axis</td>
<td>320 mm</td>
</tr>
<tr>
<td>Z axis</td>
<td>660 mm</td>
</tr>
<tr>
<td>Rapid traverse speed X, Y, Z</td>
<td>max. 15 m/min</td>
</tr>
<tr>
<td>C axis</td>
<td>± 200°</td>
</tr>
<tr>
<td>A axis</td>
<td>∞</td>
</tr>
<tr>
<td>Linear resolution</td>
<td>0.0001 mm</td>
</tr>
<tr>
<td>Radial resolution</td>
<td>0.0001°</td>
</tr>
</tbody>
</table>

Grinding spindle drive

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. grinding wheel diameter</td>
<td>150 mm</td>
</tr>
<tr>
<td>Grinding spindle speed</td>
<td>0 – 10,500 rpm</td>
</tr>
</tbody>
</table>

**HELITRONIC BASIC with belt-driven spindle**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spindle ends</td>
<td>2</td>
</tr>
<tr>
<td>Tool holder</td>
<td>NCT</td>
</tr>
<tr>
<td>Peak power</td>
<td>9 kW</td>
</tr>
<tr>
<td>Spindle Diameter</td>
<td>70 mm</td>
</tr>
</tbody>
</table>

Options

**Coolant system**

- On request – several types are possible

**Loading systems**

- Eco loader, Eco loader plus

**Others**

- 750 rpm torque motor, automatic clamping unit, automated work table, software etc.

**Tool data**

- Min. tool diameter: 3 mm
- Max. tool diameter: 320 mm
- Max. tool diameter with automated work table: 290 mm
- Max. workpiece length, peripheral grinding: 350 mm
- Max. workpiece length, end face grinding: 280 mm
- Max. workpiece weight: 50 kg

Others

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight of machine including coolant system</td>
<td>approx. 4,200 kg</td>
</tr>
<tr>
<td>Power consumption at 400 V/50 Hz</td>
<td>approx. 25 kVA</td>
</tr>
</tbody>
</table>

**Coolant system**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank capacity</td>
<td>approx. 480 l</td>
</tr>
<tr>
<td>Pump</td>
<td>120 l/min at 6 bar</td>
</tr>
</tbody>
</table>

Notes:

1) The maximum tool dimensions depend on the type of tool and its geometry, as well as the type of machining.

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

Measurements in mm. Subject to modifications due to technical progress and errors. We accept no responsibility for the correctness of any information given.
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.

### Gridding – Grinding of rotationally symmetrical tools and workpieces

<table>
<thead>
<tr>
<th>WALTER machines</th>
<th>Use</th>
<th>Materials</th>
<th>Tool dimensions (^1) max. length / diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>HELITRONIC ESSENTIAL</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>255 mm / Ø 1 – 100 mm</td>
</tr>
<tr>
<td>HELITRONIC MINI POWER</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>255 mm / Ø 1 – 100 mm</td>
</tr>
<tr>
<td>HELITRONIC BASIC AUTOMATION</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>255 mm / Ø 1 – 100 mm</td>
</tr>
<tr>
<td>HELITRONIC BASIC</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>350 mm / Ø 3 – 290 (320) mm</td>
</tr>
<tr>
<td>HELITRONIC POWER</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>350 mm / Ø 3 – 290 (320) mm</td>
</tr>
<tr>
<td>HELITRONIC POWER 400</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>520 mm / Ø 3 – 315 mm</td>
</tr>
<tr>
<td>HELITRONIC VISION 400 L</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>420 mm / Ø 3 – 315 mm</td>
</tr>
<tr>
<td>HELITRONIC VISION 700 L</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>700 mm / Ø 3 – 200 mm</td>
</tr>
<tr>
<td>HELITRONIC MICRO</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>120 mm / Ø 0.1 – 12.7 mm</td>
</tr>
<tr>
<td>HELITRONIC MICRO</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>120 mm / Ø 0.1 – 12.7 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EWAG machines</th>
<th>Use</th>
<th>Materials</th>
<th>Tool dimensions (^1) max. length / diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWAMATIC LINEAR</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>200 mm / Ø 0.2 – 200 mm</td>
</tr>
<tr>
<td>PROFILE LINE</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>255 mm / Ø 1 – 100 mm</td>
</tr>
<tr>
<td>WS 11/WS 11-SP</td>
<td>T L</td>
<td>HSS / TG</td>
<td>– / up to Ø 0.25 mm</td>
</tr>
<tr>
<td>RS 15</td>
<td>T L</td>
<td>HSS / TG</td>
<td>– / up to Ø 0.25 mm</td>
</tr>
</tbody>
</table>

### Eroding – Electrical discharge machining and grinding of rotationally symmetrical tools

<table>
<thead>
<tr>
<th>WALTER machines</th>
<th>Use</th>
<th>Materials</th>
<th>Tool dimensions (^1) max. length / diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>HELITRONIC DIAMOND EVOLUTION</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>185/255 mm / Ø 1 – 185 mm</td>
</tr>
<tr>
<td>HELITRONIC POWER DIAMOND</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>350 mm / Ø 3 – 290 (400) mm</td>
</tr>
<tr>
<td>HELITRONIC POWER DIAMOND 400</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>520 mm / Ø 3 – 380 mm</td>
</tr>
<tr>
<td>HELITRONIC VISION DIAMOND 400 L</td>
<td>T L</td>
<td>HSS / TG / CG / CCM</td>
<td>420 mm / Ø 3 – 315 mm</td>
</tr>
</tbody>
</table>

### Software – The intelligence of tool machining and measuring for production and regrinding

### Customer Care – Comprehensive range of services
For worldwide contact details, please visit
www.walter-machines.com