HELITRONIC MINI POWER

Flexibly produce and resharpen tools with smaller diameters

Key parameters

With the HELITRONIC family, the HELITRONIC MINI POWER is well suited for small to medium tool diameters. It will grind and/or sharpen rotationally symmetrical tools with a diameter in the range from 1 to 100 mm. Tool lengths up to 255 mm, items may weigh up to 30 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.
The HELITRONIC MINI POWER grinds and sharpens tools in the low to medium range of diameters for the metalworking and woodworking industries with only one clamping cycle. Frequent tool changes and complex geometries are every day matters for the HELITRONIC MINI POWER. With its compact design and low weight, it is a real alternative for the best use of your production space.
The HELITRONIC MINI POWER at a glance

<table>
<thead>
<tr>
<th>Application</th>
<th>The machine</th>
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<tbody>
<tr>
<td>• Grinding rotationally symmetrical tools with low to medium diameters for</td>
<td>• Low vibration, solid grey cast iron, gantry type construction</td>
</tr>
<tr>
<td>the metalworking and woodworking industries</td>
<td>• X, Y, Z linear axes with ball-type linear drive</td>
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<td>• For production and/or regrinding</td>
<td>• A, C rotating axes with worm drives</td>
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<td>• Complete machining with only a single clamping cycle</td>
<td>• Belt-driven spindle with two ends</td>
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<td>• Machinable materials include HSS, carbide, cermet, ceramic</td>
<td>• Each spindle end can take up to three grinding wheels</td>
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<td>• FANUC, the global standard for control equipment</td>
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<td>• Various loading systems</td>
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<td>• Grinding wheel changer</td>
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<td>• Numerous efficiency options</td>
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</table>

HELITRONIC MINI POWER – the space-saving version 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

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

“Shank/support steady” option
High precision V blocks and the fine adjustability ensure precise and reliable grinding results for longer tools. A tool’s bending during the grinding is reduced to a minimum.

Example tools (from left to right):
hinge hole drill, thread milling drill, dowel hole drill, stepped drill bit, carbide reamer, carbide twist drill, medicinal drill, deep medicinal drill, rotary milling cutters, micromilling cutter
“Integrated Measuring System IMS” option – automatic compensation during production

With this option and the measuring probe integrated into the machine, the five most important quality parameters of cylindrical tools in series production are automatically measured and any deviations are compensated. All measurements are shown in a measurement log on the screen.
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

- Analysis of the centre of gravity
- Balancing the tool

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

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.

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.

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 load, 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.
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, well known in 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.
Technical data, dimensions

### Mechanical axes

<table>
<thead>
<tr>
<th>Axis</th>
<th>Dimension (mm)</th>
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<tbody>
<tr>
<td>X axis</td>
<td>330</td>
</tr>
<tr>
<td>Y axis</td>
<td>200</td>
</tr>
<tr>
<td>Z axis</td>
<td>470</td>
</tr>
<tr>
<td>C axis</td>
<td>± 200°</td>
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<tr>
<td>A axis</td>
<td>∞</td>
</tr>
<tr>
<td>Linear resolution</td>
<td>0.0001 mm</td>
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<tr>
<td>Radial resolution</td>
<td>0.0001°</td>
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</tbody>
</table>

### Rapid traverse speed

- X, Y, Z: max. 15 m/min

### Grinding spindle drive

- max. grinding wheel diameter: 150 mm
- Grinding spindle speed: 0 – 10,500 rpm

#### HELITRONIC MINI POWER with belt-driven spindle

- Spindle ends: 2
- Tool holder: NCT
- Peak power: 9 kW
- Spindle Diameter: 70 mm

### Tool data

1. **Min. tool diameter**: 1 mm
2. **Max. tool diameter**: 100 mm
3. **Max. workpiece length, peripheral grinding**: 255 mm
4. **Max. workpiece length, end face grinding**: 185 mm
5. **Max. workpiece weight**: 30 kg

### Options

#### Automation options

- Top loader, Robot loader, grinding wheel changer for up to 6 wheels

#### Coolant system

- On request – several types are possible

#### Others

- Software, shank/support steady, Integrated Measuring System IMS, etc.

### Others

- Weight of machine including coolant system: approx. 3,600 kg
- Power consumption at 400 V/50 Hz: approx. 25 kVA

### Coolant system

- Tank capacity: approx. 350 l
- Pump: 120 l/min at 6 bar

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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.

Grinding – 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>P</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>HELITRONIC MINI POWER</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>HELITRONIC MINI AUTOMATION</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>HELITRONIC RAPTOR</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>HELITRONIC POWER 400</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>HELITRONIC VISION 400 L</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>HELITRONIC VISION 700 L</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>HELITRONIC MICRO</td>
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<td>TC</td>
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<thead>
<tr>
<th>EWAG machines</th>
<th>Use</th>
<th>Materials</th>
<th>Tool dimensions 1) max. length / diameter</th>
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</thead>
<tbody>
<tr>
<td>EWAMATLINEAR</td>
<td>F</td>
<td>HS</td>
<td>TC</td>
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<tr>
<td>PROFILE LINE</td>
<td>F</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>WS 11/WS 11-SP</td>
<td>F</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>RS 15</td>
<td>F</td>
<td>HS</td>
<td>TC</td>
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</tbody>
</table>

Eroding – Electrical discharge machining and grinding of rotationally symmetrical tools

<table>
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<tr>
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<tbody>
<tr>
<td>HELITRONIC DIAMOND EVOLUTION</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
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<tr>
<td>HELITRONIC RAPTOR DIAMOND</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
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<tr>
<td>HELITRONIC POWER DIAMOND 400</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
</tr>
<tr>
<td>HELITRONIC VISION DIAMOND 400 L</td>
<td>P</td>
<td>HS</td>
<td>TC</td>
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</table>

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

Use: Production | Rerinding | Measuring
Materials: HS: High speed steel | TC: Tungsten carbide | CC: Cermet/ceramics | CBN: Cubic boron nitride | PCD: Polycrystalline diamond | CVD-D: Chemical vapour deposition
MCD/ND: Monocrystalline diamond/natural diamond

Customer Care – Comprehensive range of services

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.