

WALTER INFO 2/2020

# HELITRONIC RAPTOR

THE REASONABLY PRICED ALLROUNDER  
FOR PRODUCING AND REGRINDING TOOLS

**NEW**



The HELITRONIC RAPTOR is the ideal entry-level machine for efficient grinding and regrinding of rotationally symmetrical tools with a small footprint. For tools with diameters of 3 to 320 mm, tool length including End Face Operation up to 280 mm and weight up to 50 kg.

[walter-machines.com](https://www.walter-machines.com)

 **WALTER**

# HELITRONIC RAPTOR AT A GLANCE

## APPLICATION

- Cost-effective grinding and regrinding of rotationally symmetrical tools for metal and wood industry
- Fully automated, complete machining in a single clamping cycle
- Materials include HSS, carbide, cermet, ceramic

## MACHINE

- NCT spindle as standard
- 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
- 11.5 kW belt-driven spindle with two ends
- Up to three grinding wheels for each spindle end
- Automatic clamping cylinder with clamping device
- Top loader: Up to 500<sup>3)</sup> tools from 3 mm to 32 mm in diameter (option)
- FANUC, the global standard of control technology

## SOFTWARE

- HELITRONIC TOOL STUDIO
- Numerous software options to extend the system's performance and to increase its efficiency

## GRINDING SPINDLE DRIVE

Max. grinding wheel diameter	200 mm
Grinding spindle speed	0 – 10,500 rpm
Spindle ends	2
Tool adapter	NCT
Peak power	11.5 kW
Spindle Diameter	80 mm

## TOOL DATA<sup>1)</sup>

Min. tool diameter	3 mm
Max. tool diameter (vertical)	320 mm
Max. tool length for peripheral grinding <sup>2)</sup>	350 mm
Max. tool length for end face grinding <sup>2)</sup>	280 mm
Max. tool weight	50 kg

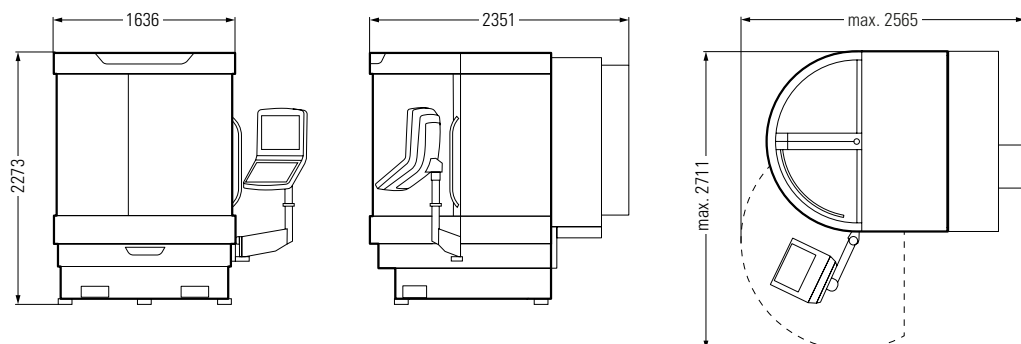
## OPTIONS

Glass scales; Top loader; HSK spindle; measuring probe for measuring the grinding wheels; manual support steady rest; manual tailstock; workpiece holder with torque motor; sharpening stone holder; work table; vapour separator; silencer; fire extinguishing system; Automatic, electric measurement of machine reference (AEMDM); etc.



Option Top loader

### HELITRONIC RAPTOR



- 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.
- 3 Depends on the tool diameter.

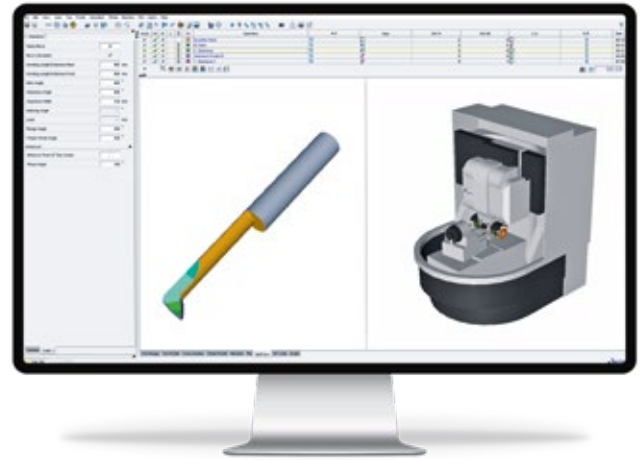
Dimensions in mm, subject to modifications due to technical progress and errors. No guarantee is provided for this information.

## 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. 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 option: Feedrate Optimizer

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

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.

### Efficiency option: Tool Balancer

- Analysis of the centre of gravity
- Balancing the tool

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.



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WALTER INFO 4/2020

# HELITRONIC ESSENTIAL

Economic tool grinding from 1 – 100 mm  $\varnothing$   
and up to a total length of 255 mm

**NEW  
OPTION  
TOP LOADER**



## Key parameters

The 5-axis CNC tool grinding machine HELITRONIC ESSENTIAL is the first choice in the HELITRONIC family when it comes to the flexible regrinding and production of rotationally symmetrical tools and production components in the above-mentioned dimension range. Its productivity is unrivalled here.

# HELITRONIC ESSENTIAL

## Technical data

Machine bed in solid grey cast iron, gantry type construction	
Ball screw in X, Y, Z	
Worm drives in A, C	
Absolute encoder, no limit switch on the axes	
Continuously variable grinding spindle drive with digital AC servomotor:	
Max. peak power	9 kW
Speed adjustable	0–10,500 rpm
Grinding head:	
Double-ended grinding spindle, NCT cone with flat contact surface; up to three grinding wheels for each spindle end	
Grinding spindle diameter	70 mm
Max. grinding wheel diameter	150 mm

## Tool data <sup>1)</sup>

Diameter for regrinding	≥ 3 mm
Diameter for production	≥ 1 mm
Diameter during complete processing	≤ 100 mm
Max. complete processing tool length <sup>2)</sup>	185 mm
Max. peripheral grinding tool length <sup>2)</sup>	255 mm
Max. end face grinding tool length <sup>2)</sup>	185 mm

## Options

- Automatic clamping cylinder with clamping device for tools with ISO50 cone DIN 69871 und pull stud DIN 69872
- Manual tool supports such as steady rest and tailstock for precise grinding of long tools
- Top loader: Up to 500 <sup>3)</sup> tools from diameter 1 mm to 16 mm

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

<sup>2)</sup> From the theoretical taper diameter of the workpiece holder.

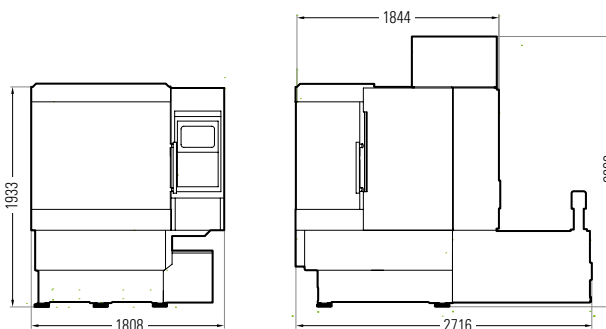
<sup>3)</sup> Depending on tool diameter.

### Please contact us for further information:

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Option: Top loader



HELITRONIC ESSENTIAL (Dimensions in mm)



WALTER INFO 5/2020

# HELITRONIC MINI AUTOMATION

High volume production of tools  
with diameters from 1 mm up to 16 mm

**NEW**  
HELITRONIC MINI  
AUTOMATION for  
volume production



## Key parameters

The 5-axis CNC HELITRONIC MINI AUTOMATION tool grinding machine is the first choice in the HELITRONIC family when it comes to the highest productivity and quality expectations in volume production. For rotationally symmetrical tools and production components with maximum flexibility.

# HELITRONIC MINI AUTOMATION

## HELITRONIC MINI AUTOMATION

- Machine base in solid grey cast iron, gantry type construction
- Double-ended grinding spindle, NCT cone with flat contact surface
- Up to three grinding wheels for each spindle end
- Robot loader for max. 1,500 tools (pallets not included)
- Automatic clamping cylinder
- Software: HELITRONIC TOOL STUDIO and WWM (P1, P2, P3)
- Workpiece carrier with torque motor and face contact (without ISO 50)

## Technical data

Linear axes X, Y, Z with ball screw

Rotational axis A with torque motor

Rotational axis C with worm drive

Continuously variable grinding spindle drive

Max. peak power 9 kW

Speed adjustable 0–10,500 rpm

Grinding spindle diameter 70 mm

Max. grinding wheel diameter 150 mm

Torque motor 750 rpm

Tape filter unit 350 l

## Tool data <sup>1)</sup>

Diameter for regrinding Starting at 3 mm

Diameter for production 1–16 mm

Diameter during complete processing ≤ 100 mm

Max. complete processing tool length <sup>2)</sup> 185 mm

Max. peripheral grinding tool length <sup>2)</sup> 255 mm

Max. end face grinding tool length <sup>2)</sup> 185 mm

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

<sup>2)</sup> From the theoretical taper diameter of the workpiece holder.

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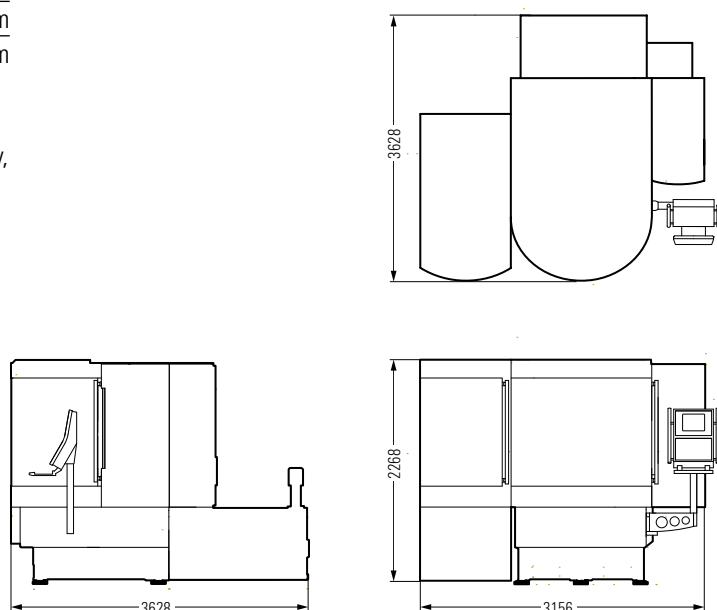
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## Application

Especially developed for the high volume production of milling cutters, drills, stepped drill bits, multi-step tools, wood-machining tools, profile tools, etc. with a diameter of 1 mm up to 16 mm, made out of carbide, HSS, ceramic, cermet or CBN.

## Options

- Various clamping systems based on spring tensioning system
- Manual and automatic support steady
- Manual and automatic tailstock
- Extension for robot loader for four additional pallets for up to 2,000 tools (= total of 3,500 tools)
- Pallets, fire extinguishing system, vapour separator, silencer, etc.



HELITRONIC MINI AUTOMATION (Dimensions in mm)





# 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.



Grinding



Eroding



Laser



Measuring



Software



Customer Care

## Walter Maschinenbau GmbH

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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 MINI POWER

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.



Grinding



Software

# The HELITRONIC MINI POWER at a glance

## Application

- Grinding rotationally symmetrical tools with low to medium diameters for the 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
- Various loading systems
- Grinding wheel changer
- Numerous efficiency options

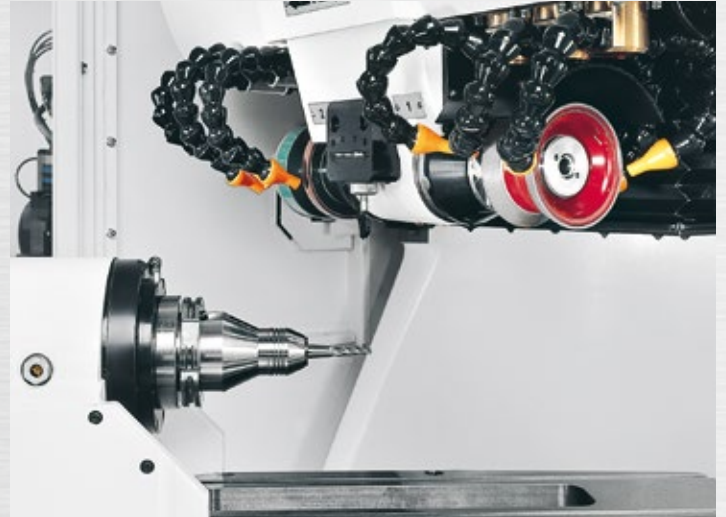


HELITRONIC MINI POWER – the space-saving version with a belt-driven spindle and two ends.

## Software

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- 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



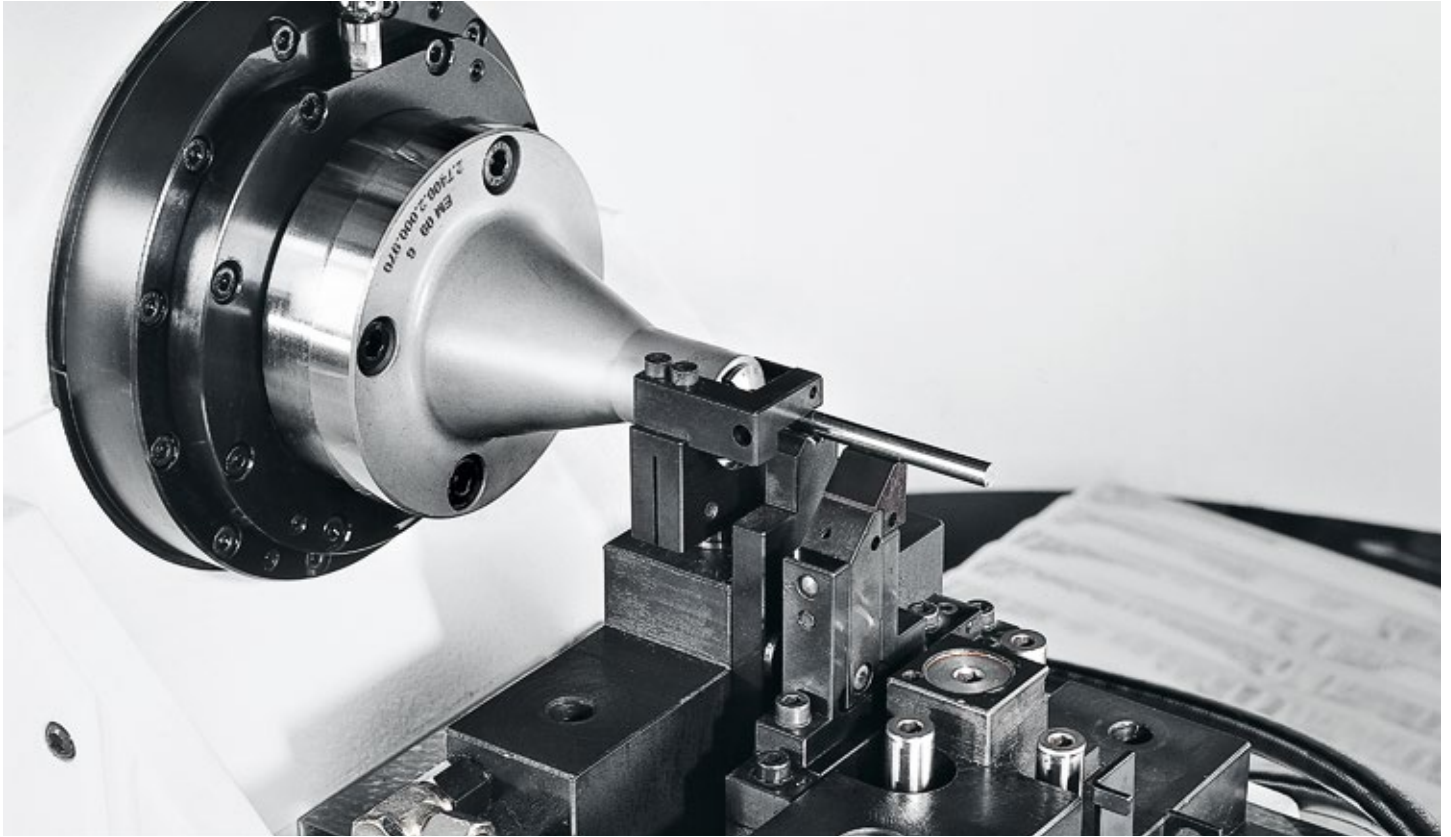
### **Belt-driven spindle**

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



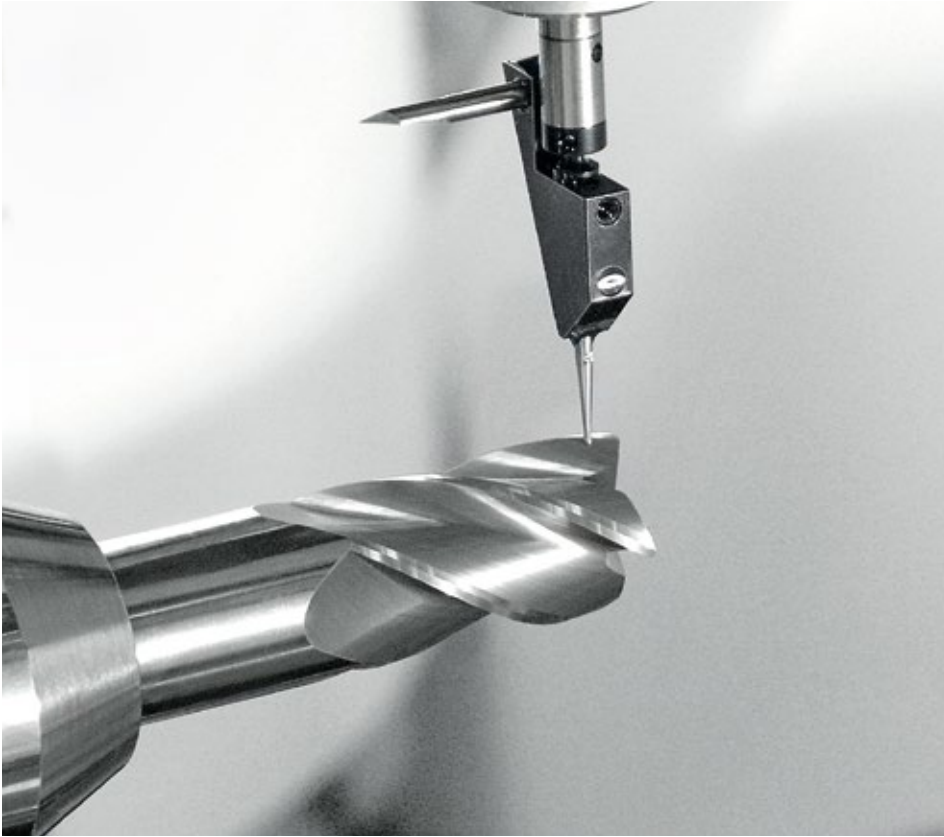
## “Shank/support steady” option

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



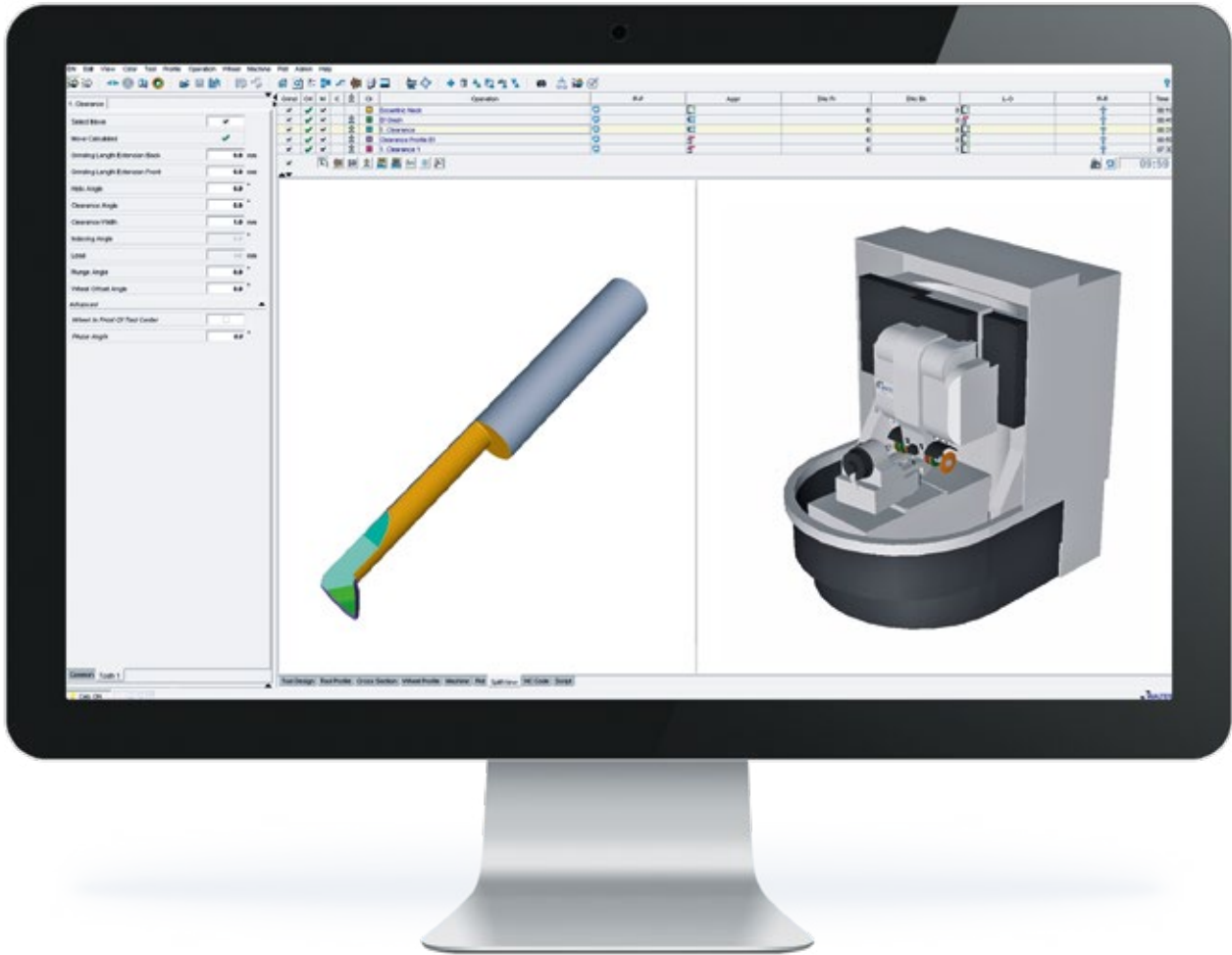


**“Integrated Measuring System IMS” option –  
automatic compensation during production**

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.



# Application software for tool machining



## HELITRONIC TOOL STUDIO adds operational convenience to all grinding applications

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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.

- Permanent set-actual comparison for the torque

## 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.

- 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.



# 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.



## Start up

Commissioning  
Extension of the guarantee



## Qualification

Training  
Support for production



## Prevention

Maintenance  
Inspection



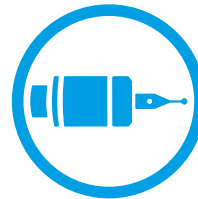
## Service

Customer service  
Customer advice  
Helpline  
Remote service



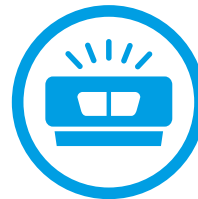
## Digital Solutions

Remote Service  
Service Monitor  
Production Monitor



## 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	330 mm
Y axis	200 mm
Z axis	470 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

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

## 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

## Tool data <sup>1)</sup>

Min. tool diameter	1 mm
Max. tool diameter	100 mm
Max. workpiece length, peripheral grinding <sup>2)</sup>	255 mm
Max. workpiece length, end face grinding <sup>2)</sup>	185 mm
Max. workpiece weight	30 kg

## Options

### Automation options

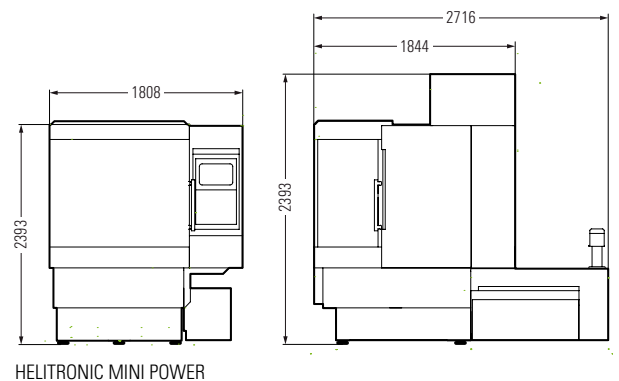
Top loader, Robot loader, grinding wheel changer for up to 6 wheels

### Coolant system

On request – several types are possible

### Others

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



HELITRONIC MINI POWER

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

<sup>2)</sup> 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

WALTER machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC ESSENTIAL	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI POWER	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI AUTOMATION	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC RAPTOR	P R	HSS TC C/C CBN	280 mm / Ø3 – 320 mm
HELITRONIC POWER 400	P R	HSS TC C/C CBN	520 mm / Ø3 – 315 mm
HELITRONIC VISION 400 L	P R	HSS TC C/C CBN	420 mm / Ø3 – 315 mm
HELITRONIC VISION 700 L	P R	HSS TC C/C CBN	700 mm / Ø3 – 200 mm
HELITRONIC MICRO	P R	HSS TC C/C CBN HSS TC C/C CBN	120 mm / Ø0.1 – 12.7 mm 120 mm / Ø3 – 12.7 mm

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	200 mm / Ø0.2 – 200 mm
PROFILE LINE	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
WS 11/WS 11-SP	P R M	HSS TC	– / up to Ø25 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

WALTER machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC DIAMOND EVOLUTION	P R	HSS TC C/C CBN PCD	185/255 mm / Ø1 – 165 mm
HELITRONIC RAPTOR DIAMOND	P R	HSS TC C/C CBN PCD	270 mm / Ø3 – 400 mm
HELITRONIC POWER DIAMOND 400	P R	HSS TC C/C CBN PCD	520 mm / Ø3 – 380 mm
HELITRONIC VISION DIAMOND 400 L	P R	HSS TC C/C CBN PCD	420 mm / Ø3 – 315 mm



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



**Customer Care** – Comprehensive range of services



**Grinding** – Grinding of indexable inserts

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
PROFILE LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø50 mm
COMPACT LINE	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
INSERT LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø75 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length / diameter
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm



**Measuring** – Contactless measurement of tools, workpieces and grinding wheels

WALTER machines	Use	E1-Value	Tool dimensions <sup>1)</sup> max. length / diameter
HELICHECK ADVANCED	M	(1,8 + L/300) µm	420 mm / Ø1 – 320 mm
HELICHECK PRO	M	(1,2 resp. 1,4 + L/300) µm	300 mm / Ø1 – 200 mm
HELICHECK PRO LONG	M	(1,2 resp. 1,4 + L/300) µm	730 mm / Ø1 – 200 mm
HELICHECK PLUS	M	(1,2 resp. 1,4 + L/300) µm	300 mm / Ø0.1 – 200 mm
HELICHECK PLUS LONG	M	(1,2 resp. 1,4 + L/300) µm	730 mm / Ø0.1 – 200 mm
HELICHECK 3D	M	(1,8 + L/300) µm	420 mm / Ø3 – 80 mm
HELISET PLUS	M	-	400 mm / Ø1 – 350 mm
HELISET	M	-	400 mm / Ø1 – 350 mm

**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

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

<sup>2)</sup> From the theoretical taper diameter of the workpiece holder.







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For worldwide contact details, please visit  
**[www.walter-machines.com](http://www.walter-machines.com)**





# HELITRONIC POWER 400

with wheel changer as standard equipment

**NEW**

Now also available with  
**Belt-driven spindle**  
with 2 spindle ends



## Key features

The HELITRONIC POWER 400 with wheel changer is the high-performance top version with maximum flexibility for mid-sized to large series. Around the world, it stands for top quality in the production and resharpening of rotationally symmetrical tools. Permissible diameters range from 3 to 315 mm, machining lengths can be up to 520 mm and weight up to 50 kg.



Grinding



Eroding



Laser



Measuring



Software



Customer Care

## Walter Maschinenbau GmbH

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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 400

For the production and resharpening of rotationally symmetrical tools in a single clamping cycle, even with complex geometries. Working together with the grinding wheel changer, a variety of loading systems and the motor spindle, it sets standards in productivity and flexibility.



Grinding



Software

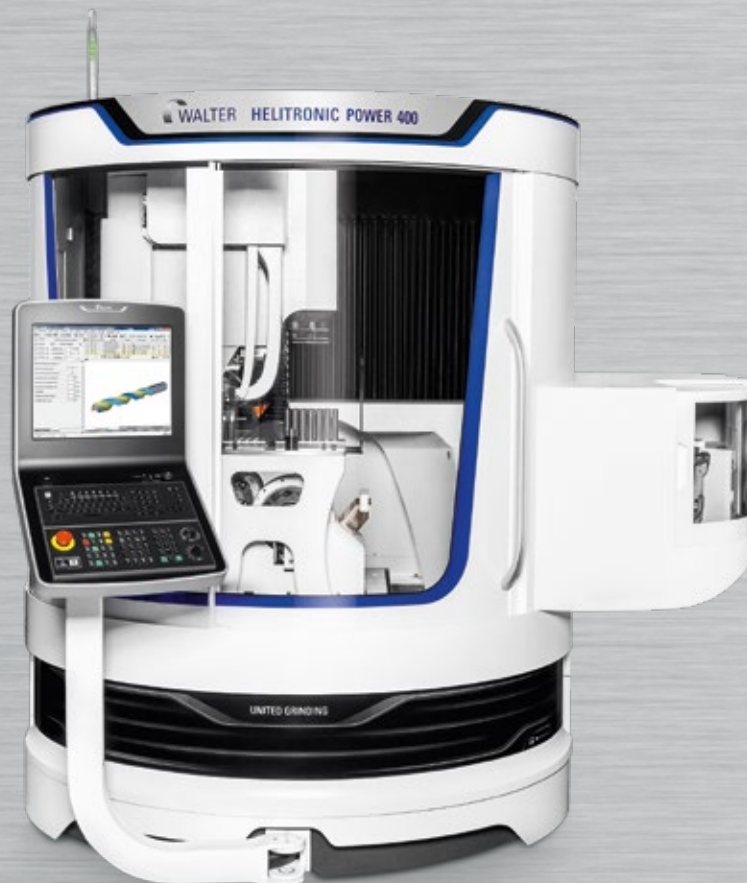
# The HELITRONIC POWER 400 at a glance

## Application

- Grinding rotationally symmetrical tools for metalworking and woodworking industries
- For production and/or regrinding
- Fully automated, complete machining in a single clamping cycle
- Materials include 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 or optional torque motors
- Motor spindle with one spindle end
- Each spindle end can take up to three grinding wheels
- FANUC, the global standard for control equipment
- Various loading systems
- Numerous efficiency options



HELITRONIC POWER 400 with „Top loader“ and „Grinding wheel changer“ (right) – uncompromising in productivity and precision

## Software

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



HELITRONIC POWER 400 with wheel changer (right) and the optional „Robot loader“ (left) – the top configuration for maximum performances

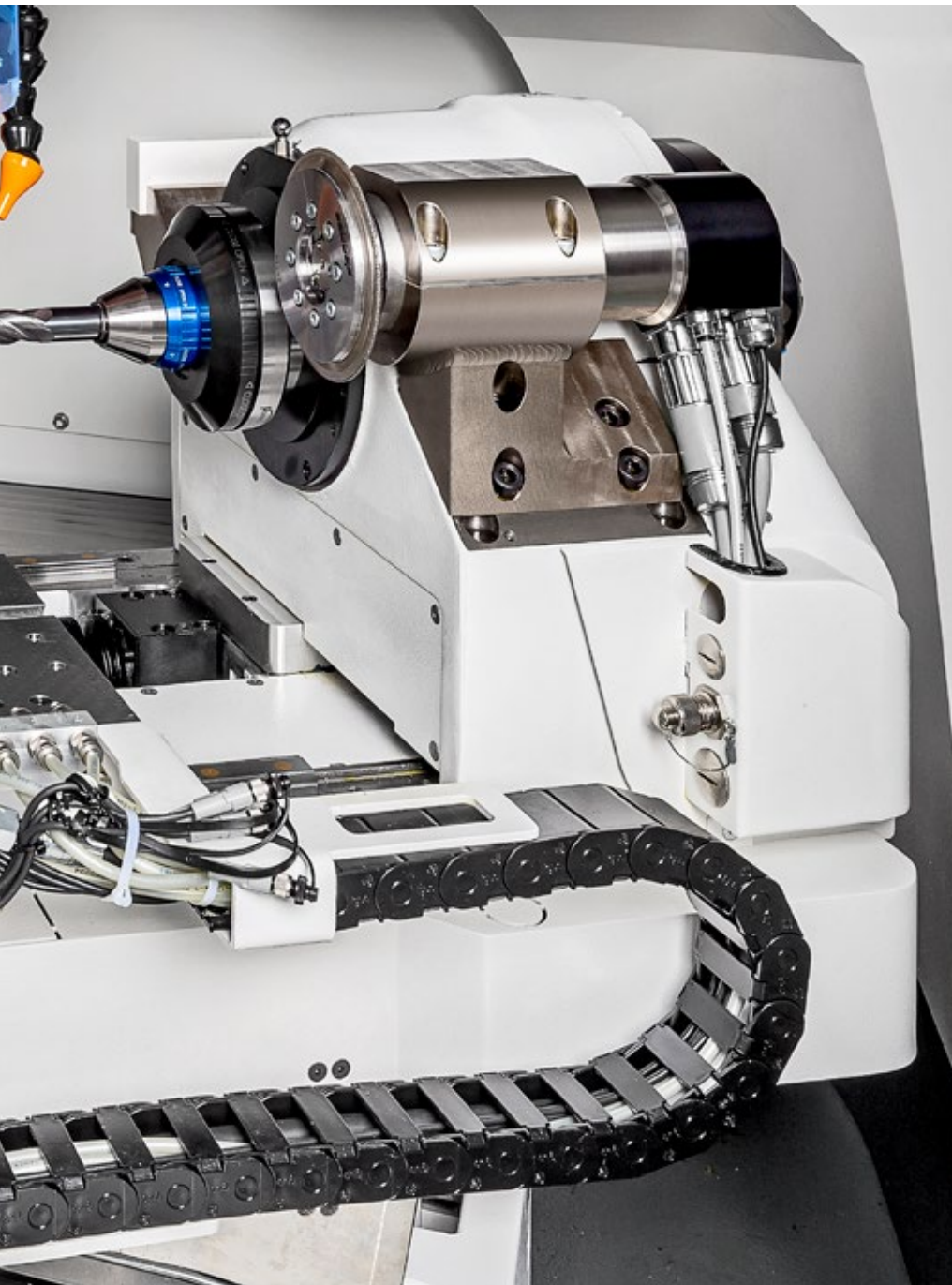
# Efficient and easy to use



## Example tools (from left to right):

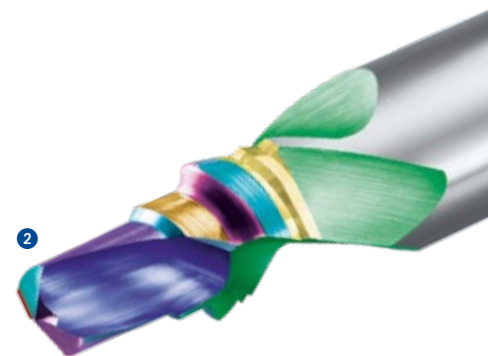
Corner radius mill, fir tree tool, shaping tool, straight contouring tool, shaped lathe tool, 2 x stepped drill bit, ball nose tool with variable helix angle, thread milling drill, drill with variable helix angle





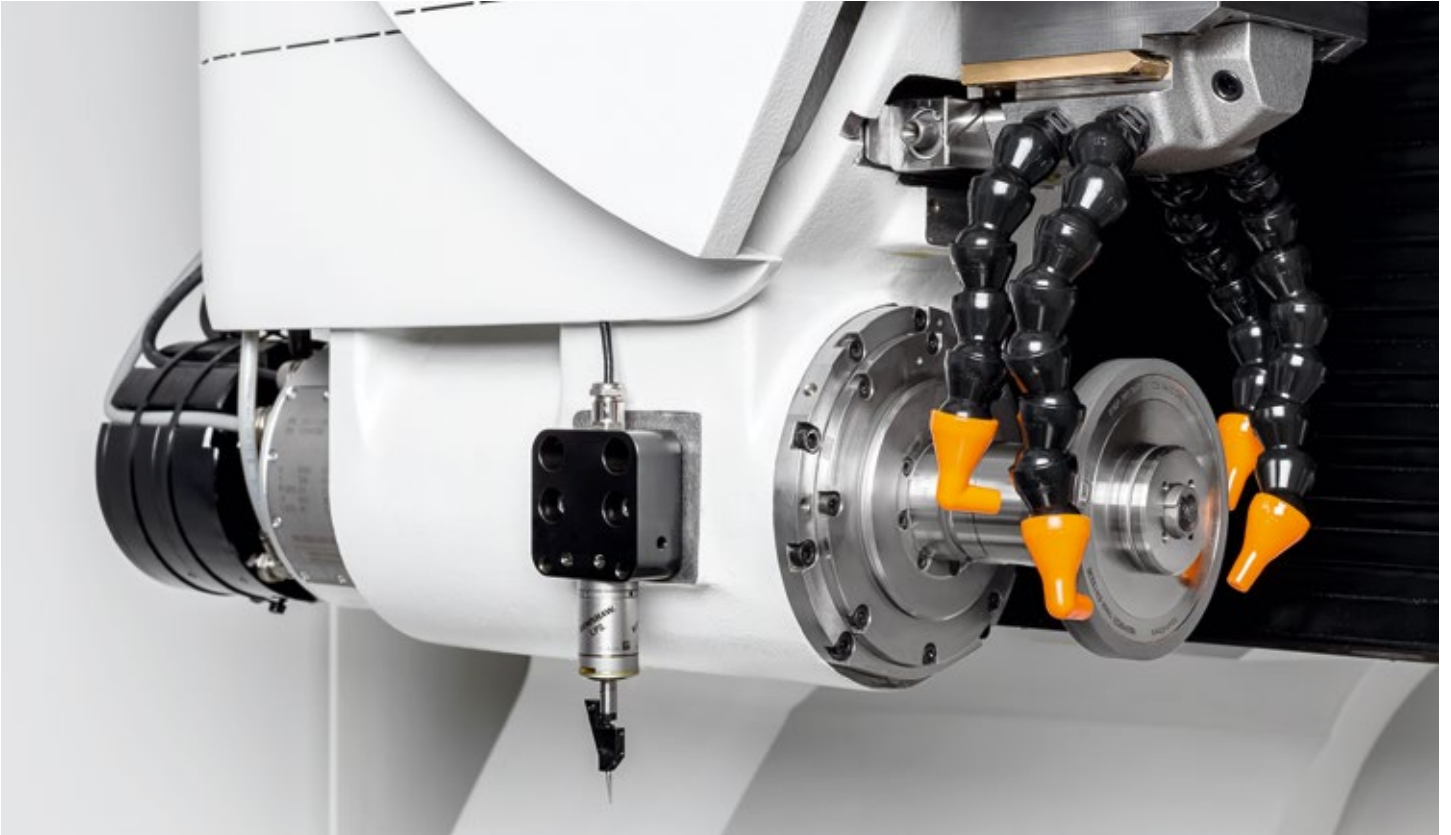
**“Automated work table” option**

This option can be equipped with up to two upper slides: one with automatic traverse and one fixed. This way, long tools can be supported by a moveable steady rest and/or a tailstock. The surface quality and tool precision are enhanced as a result.



# Innovative WALTER grinding technology

1



## Motor spindle

The powerful single-ended directly driven motor spindle is equipped with a liquid cooling system. Up to three grinding wheels can be mounted per grinding wheel adaptor. In combination with the grinding wheel changer, up to eight grinding wheel adaptors (24 grinding wheels) can be used in the grinding process. The result is the highest levels of efficiency and productivity.



# Grinding wheel changer



## **Grinding wheel changer 4 x (option 8 x)**

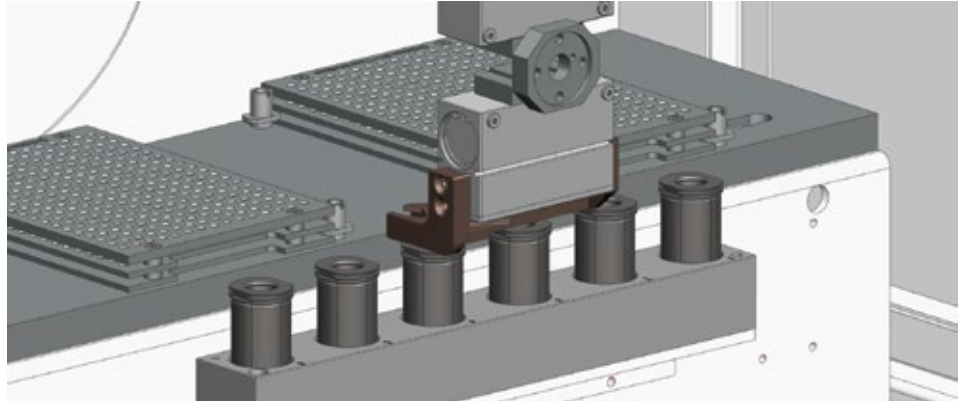
Affordable, compact, and flexible too. With a capacity of up to 24 grinding wheels, it quadruples the grinding wheel capacity of the HELITRONIC POWER 400. The max. grinding wheel diameter is 254 mm. The coolant supply and the grinding set form a single unit. This ensures reliable wheel set replacement and optimum coolant delivery.

## Robot loader automation option



### “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.



### “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.

### Advantages of the “Combi” equipment package

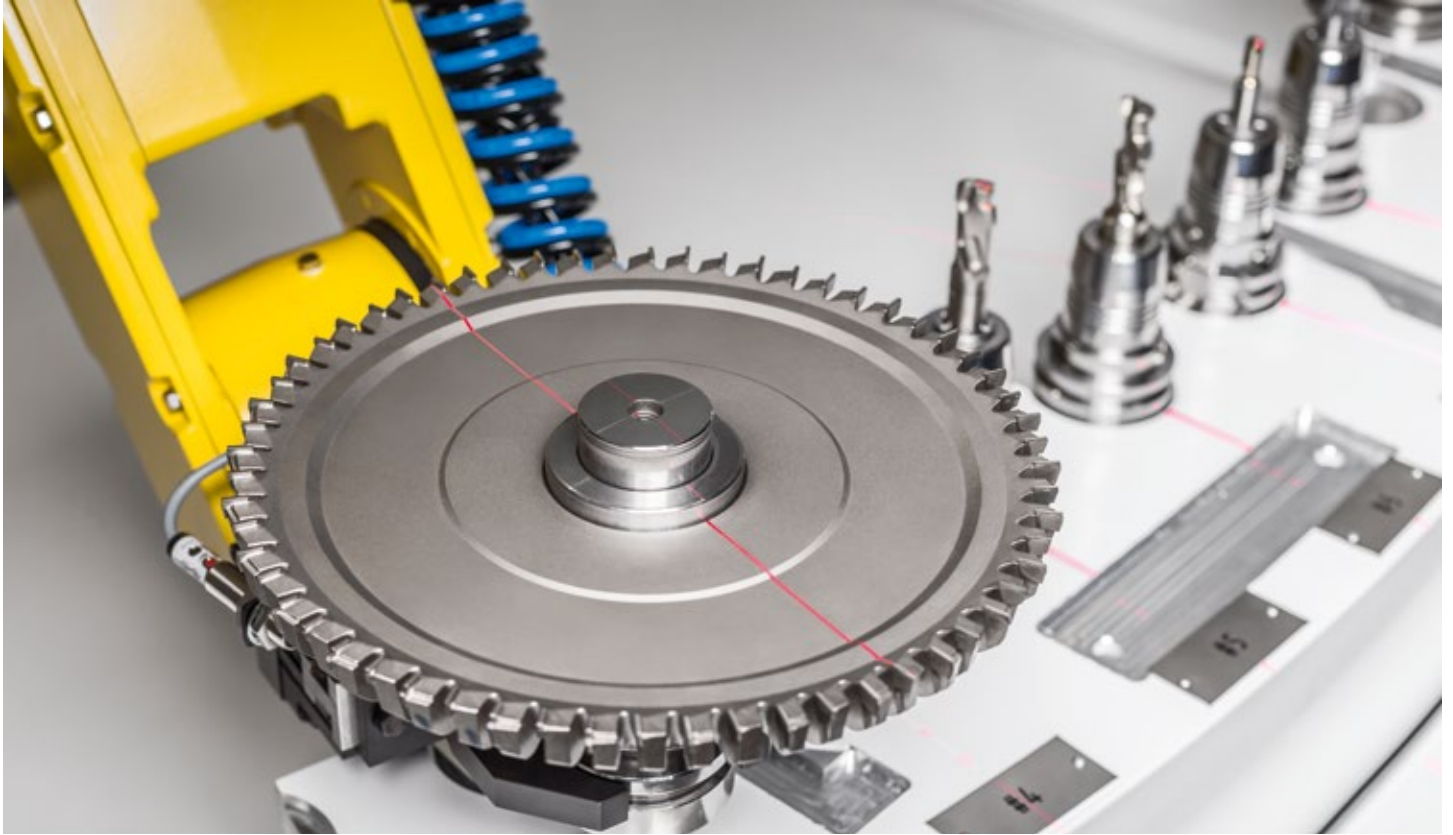
- Rapid replacement sequence thanks to only one cylinder head screw
- Pallets that have already been taught do not need to be taught again when grippers are replaced
- Pneumatics and teaching cable need to be connected only once (installation)
- Retrofitting at existing robots possible (software must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



### 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.

# Robot loader 25 automation option

**1**

## Robot loader 25

For tools in an HSK holder with a total weight of up to 20 kg and a tool diameter of up to 315 mm in combination with the HELITRONIC POWER 400. Thanks to the innovative, recently developed loader software, "chaotic" loading on up to 7 pallet levels is now possible. An automatic diameter determination is also optionally available and ensures a smooth, automated and flexible production sequence.

Capacity of the available pallets:

- 21 tools, max. diameter 320 mm
- 28 tools, max. diameter 220 mm
- 70 tools, max. diameter 105 mm

**2**

## Top loader automation option



### Top loader

This space-saving and inexpensive automation solution is integrated directly into the machine envelope. Automatic teaching enables short setup times. Depending on the tool diameter, the Top loader offers a maximum of 500 places for tools.

Tool capacity, max. (sample diameters):

- 500 tools: diameter 3 mm
- 42 tools: diameter 20 mm
- 20 tools: diameter 32 mm

## Other options

**1**

### **“Grinding wheel dresser” option**

When it comes to the conditioning/dressing of grinding wheels during the production process, with subsequent software-controlled compensation, the high-performance electrical grinding wheel dresser is the perfect solution.

**2**

### **“Sharpening stone holder” option**

With the permanently installed sharpening stone holder, WALTER enables the automatic opening of the wheel bond during production. The HELITRONIC TOOL STUDIO software controls the process and enables the operator to open the bond at the appropriate time according to the grinding wheel condition.

## Other options



### 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.

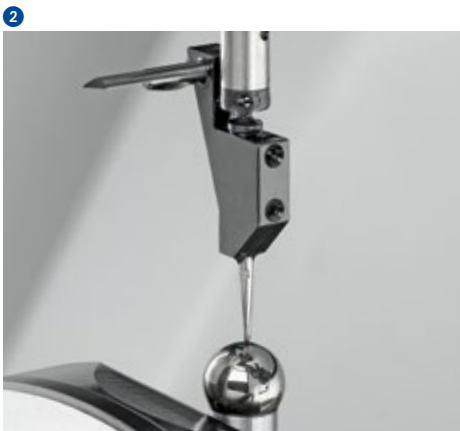
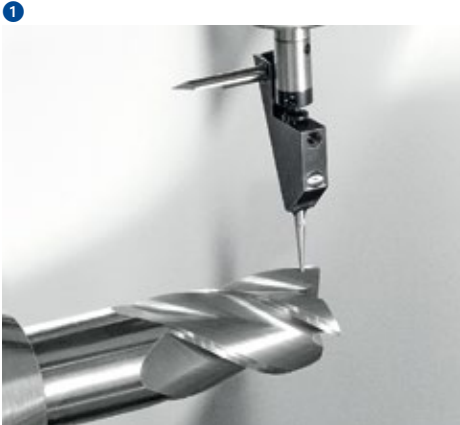
The probe for the tactile measurement is fitted on the tool carrier and is mounted in place of the electrical dresser.



### Automatic, electrical measurement of the machine reference

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

- 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



### Automatic positioning and measurement system "Heli-Probe" (standard)

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.

### Calibration (standard)

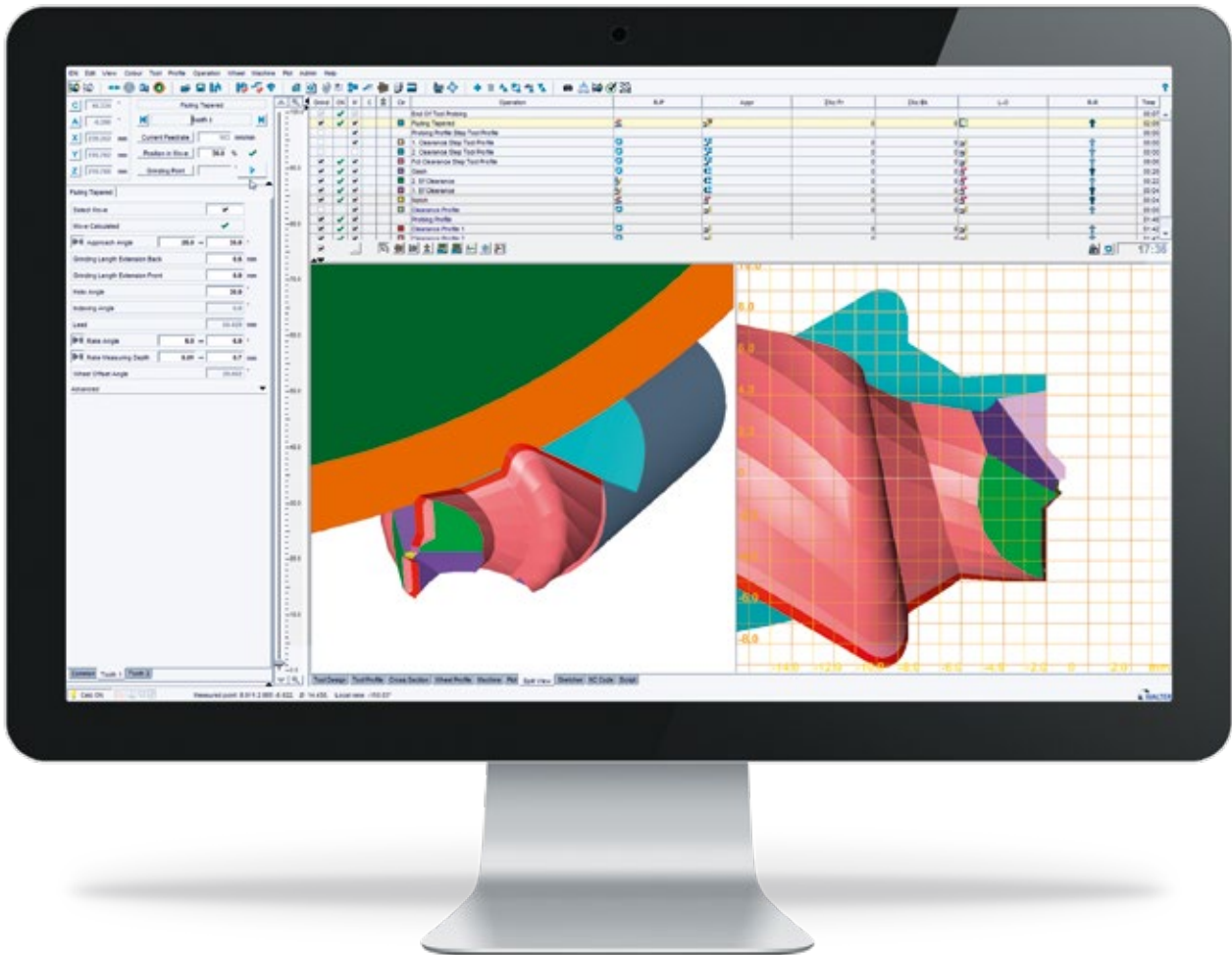
Calibration consists of a calibration ball and software. It is used to automatically calibrate the X, Y and Z axes of the machine with a loader. The calibration frequency can be freely chosen in the loader program. Machines without a loading system can be calibrated manually.

### Integrated Measuring System IMS

With the integrated IMS measurement system, 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.

- Determination of the rake angle, the outer diameter and the core diameter for cylindrical tools
- Tactile measurement system to position the tools fully automatically
- Fully automatic thermal profile compensation for the linear axes

# Application software for tool machining



## HELITRONIC TOOL STUDIO – operational convenience with 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 the HELITRONIC TOOL STUDIO, only a little work is needed by the user to program machining steps and movement sequences for both rotationally symmetrical standard tools and for special tools.

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

- Drawing and grinding with just one software package
- Import and export of DXF drawings

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

- Global production of tools with consistent quality based on a reference model

## “Sketcher”

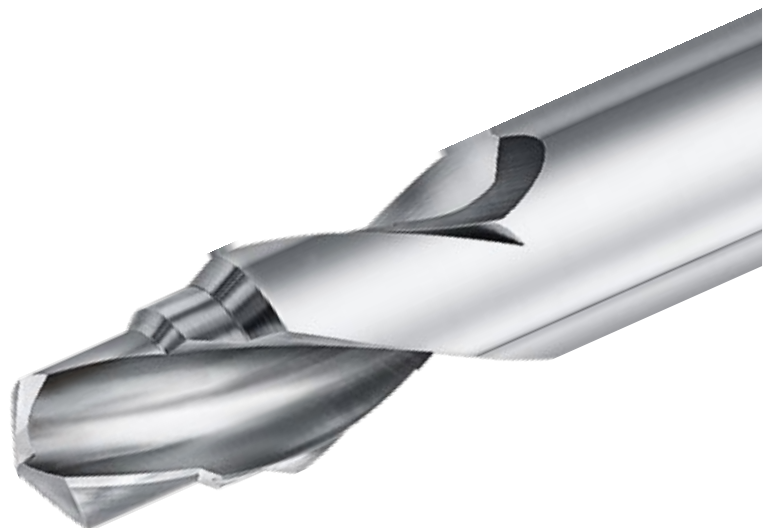
Do you sometimes wonder why you need to draw tools separately in a CAD program and then recreate the desired tool in another software package? Thanks to the “Sketcher” option, this is now a thing of the past. You can now create CAD drawings, program tool ID numbers and grind the desired tool in a single software package thanks to the “Sketcher” option. HELITRONIC TOOL STUDIO includes an integrated CAD system with an intuitive icon-based user interface for creating tool and grinding wheel drawings. The tool simulation and CAD drawing features are linked in HELITRONIC TOOL STUDIO, meaning that each parameter modification is not only reflected in the simulation model but also in the associated CAD drawing. CAD drawings can be re-used for different tools as the CAD elements used for other tool ID numbers attempt to re-connect with the tool simulation model. Users can also import and export DXF drawings, and save drawings as PDF documents. Benefit to you: Save time and resources through a central software solution!

## „Feedrate Optimizer“

This extension of HELITRONIC TOOL STUDIO provides ideal opportunities for feed rate control and for monitoring grinding wheel and machine loads. 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.

## “Quality Assurance”

Customers worldwide require consistently high tool quality in terms of material and geometry, no matter which production location is concerned. In order to satisfy these customer and market requirements, WALTER has brought the efficiency-boosting “quality assurance” solution onto the market for the established tool grinding software HELITRONIC TOOL STUDIO. By using a reference model as a basis, qualitatively equivalent tools can be produced at different locations around the world. The current model is compared to the fixed reference model at all times and a visual display shows the effect of changing any parameters. This way, deviations in quality can be detected immediately and eliminated.



# 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



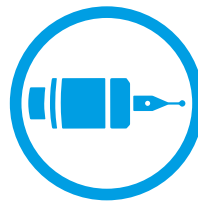
## Service

Customer service  
Customer advice  
Helpline  
Remote service



## Digital Solutions

Remote Service  
Service Monitor  
Production Monitor



## 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	650 mm
Y axis	350 mm
Z axis	720 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

Max. grinding wheel diameter	254 mm
Grinding spindle speed	0 – 10,500 rpm

### HELITRONIC POWER 400 with motor spindle

Spindle ends	1
Tool holder	HSK 50
Peak power	26 kW

## Others

Machine weight	approx. 5,300 kg
Power consumption at 400 V/50 Hz	approx. 25 kVA

## Tool data <sup>1)</sup>

Min. tool diameter	3 mm
Max. tool diameter	315 mm
Max. workpiece length, peripheral grinding <sup>2)</sup>	520 mm
Max. workpiece length, end face grinding <sup>2)</sup>	380 mm
Max. workpiece weight	50 kg

## Options

### Coolant system

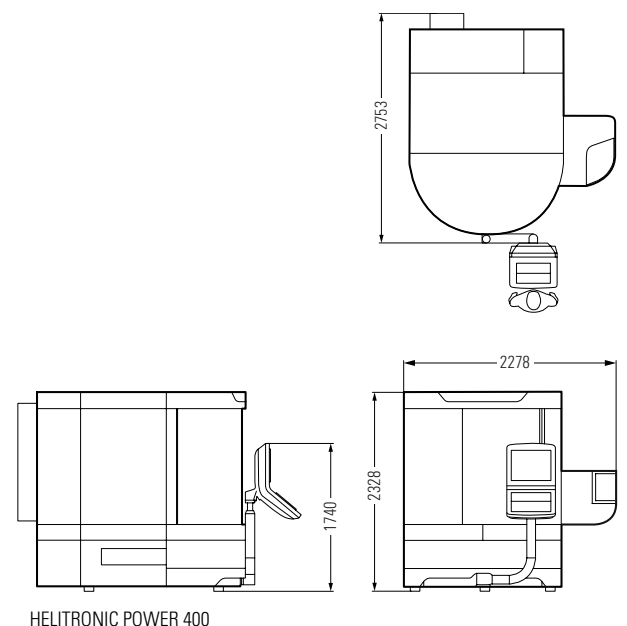
On request – several types are possible

### Loading systems

Top loader, Robot loader, Robot loader 25

### Others

Frequency-controlled pump 80 – 120 l/min at 7 – 20 bar, torque motor A-axis 750 rpm, torque motor C-axis, glass scale, automation upper plate, Walter Window Mode software, automatic grinding wheel measurement, automatic electrical measurement of the machine reference, etc.



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

<sup>2)</sup> 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 <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC ESSENTIAL	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI POWER	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI AUTOMATION	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC RAPTOR	P R	HSS TC C/C CBN	280 mm / Ø3 – 320 mm
HELITRONIC POWER 400	P R	HSS TC C/C CBN	520 mm / Ø3 – 315 mm
HELITRONIC VISION 400 L	P R	HSS TC C/C CBN	420 mm / Ø3 – 315 mm
HELITRONIC VISION 700 L	P R	HSS TC C/C CBN	700 mm / Ø3 – 200 mm
HELITRONIC MICRO	P R	HSS TC C/C CBN HSS TC C/C CBN	120 mm / Ø0.1 – 12.7 mm 120 mm / Ø3 – 12.7 mm

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	200 mm / Ø0.2 – 200 mm
PROFILE LINE	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
WS 11/WS 11-SP	P R M	HSS TC	– / up to Ø25 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

WALTER machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC DIAMOND EVOLUTION	P R	HSS TC C/C CBN PCD	185/255 mm / Ø1 – 165 mm
HELITRONIC RAPTOR DIAMOND	P R	HSS TC C/C CBN PCD	270 mm / Ø3 – 400 mm
HELITRONIC POWER DIAMOND 400	P R	HSS TC C/C CBN PCD	520 mm / Ø3 – 380 mm
HELITRONIC VISION DIAMOND 400 L	P R	HSS TC C/C CBN PCD	420 mm / Ø3 – 315 mm



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



## Customer Care – Comprehensive range of services



## Grinding – Grinding of indexable inserts

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
PROFILE LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø50 mm
COMPACT LINE	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
INSERT LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø75 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length / diameter
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm



## Measuring – Contactless measurement of tools, workpieces and grinding wheels

WALTER machines	Use	E1-Value	Tool dimensions <sup>1)</sup> max. length / diameter
HELICHECK ADVANCED	M	(1,8 + L/300) µm	420 mm / Ø1 – 320 mm
HELICHECK PRO	M	(1,2 resp. 1,4 + L/300) µm	300 mm / Ø1 – 200 mm
HELICHECK PRO LONG	M	(1,2 resp. 1,4 + L/300) µm	730 mm / Ø1 – 200 mm
HELICHECK PLUS	M	(1,2 resp. 1,4 + L/300) µm	300 mm / Ø0.1 – 200 mm
HELICHECK PLUS LONG	M	(1,2 resp. 1,4 + L/300) µm	730 mm / Ø0.1 – 200 mm
HELICHECK 3D	M	(1,8 + L/300) µm	420 mm / Ø3 – 80 mm
HELISET PLUS	M	-	400 mm / Ø1 – 350 mm
HELISET	M	-	400 mm / Ø1 – 350 mm

**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

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

<sup>2)</sup> From the theoretical taper diameter of the workpiece holder.







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# HELITRONIC MICRO

The high precision system  
for small tools



## Key parameters

The HELITRONIC MICRO from the HELITRONIC family produces and sharpens rotationally symmetrical tools and production parts with smaller diameters. From 0.1 mm diameter in production, from 3 mm diameter when resharpening, maximum diameter 12.7 mm, tool length up to 120 mm, maximum weight up to 12 kg.



Grinding



Eroding



Laser



Measuring



Software



Customer Care

## Walter Maschinenbau GmbH

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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 MICRO

Grinding complex geometries on rotationally symmetrical tools, in the growth market of small to the smallest diameter, is the core capability of the HELITRONIC MICRO. High mechanical process stability and sophisticated kinematics, with five interpolation axes and two positioning axes, ensure excellent grinding results in production or regrinding.



Grinding



Software

# The HELITRONIC MICRO at a glance

## Application

- Grinding rotationally symmetrical tools with small to the very smallest diameters for innovative industries such as in the medical area, precision engineering, automotive engineering, avionics etc.
- For production and/or regrinding
- Fully automated, complete machining with only a single clamping cycle
- Machinable materials include HSS, carbide, cermet, ceramic

## The machine

- Low vibration, solid mineral cast, gantry type construction
- X, Y, Z linear axes with linear drives
- X' linear axis with ball-type linear drive
- Rotating A, C axes with high torque motors
- Motor driven spindle with three spindle ends
- Each spindle end can take up to three grinding wheels
- FANUC, the global standard for control equipment
- Integrated FANUC robot loader
- Numerous efficiency options



HELITRONIC MICRO with an integrated FANUC robot loader.

## Software

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



### **Small tools represent a growing market – a market for you to exploit**

With the HELITRONIC MICRO, WALTER extends your product range for the production and regrinding of the smallest tool diameters. The HELITRONIC MICRO grinding machine produces very precise results for tools in the diameter range from 0.1 to 12.7 mm when producing new tools and from 3 to 12.7 mm when resharpenering.

As an automatic 5 axis CNC machine with two additional positioning axes, the HELITRONIC MICRO is predestined for the complete machining of demanding geometries for micro tools in a single clamping cycle. All seven axes are equipped with linear/torque drives and are controlled via the integrated high resolution measurement system. This produces exact movements while maintaining very dynamic performance. Due to the fast rotating workpiece axis A with a max. speed of 1,000 rpm, the HELITRONIC MICRO can accomplish precise profile grinding, particularly for multi-step tools.

### **WALTER gantry design**

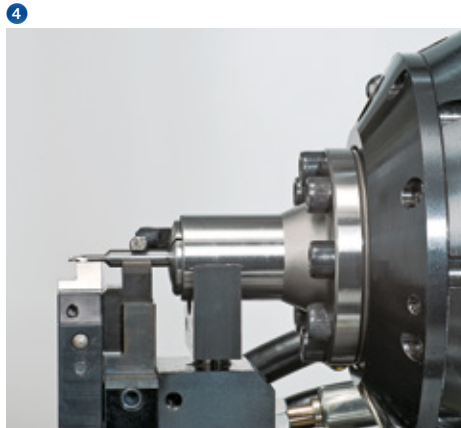
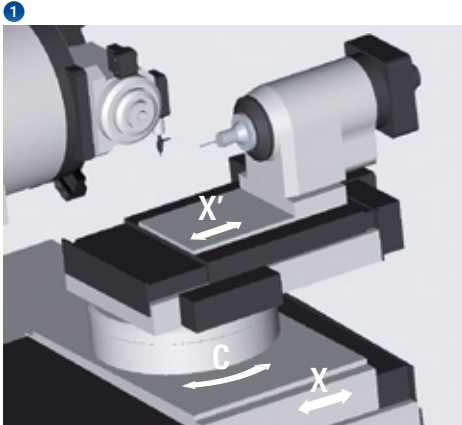
The HELITRONIC MICRO with its mineral cast machine bed was especially designed for this range of applications. This CNC machine offers you optimum damping of vibrations, it is insensitive to temperature fluctuations, it has a dynamic drive system and ultimately offers precision grinding.

# Standard equipment for peak performance

1



1 With 3 motor spindles for up to 12 grinding wheels, the HELITRONIC MICRO is designed for flexible use



**CNC controlled X' axis**

The X' axis is used to automatically and precisely move the tools to be machined to the centre of rotation. This leads to short traverses and increases the precision.

**Integrated FANUC robot loader**

The grinding times for micro tools are normally short. All the more important is thus the set-up times for tool changing. For the HELITRONIC MICRO, WALTER has integrated a 6-axis robotic loader into the machine which reduces the loading time to a minimum. Capacity for up to 1,500 tools.

**Automatic positioning and measurement system "Heli-Probe"**

This records important tool parameters and positions the tool in the shortest possible time. This is a vital requirement for productivity and quality.

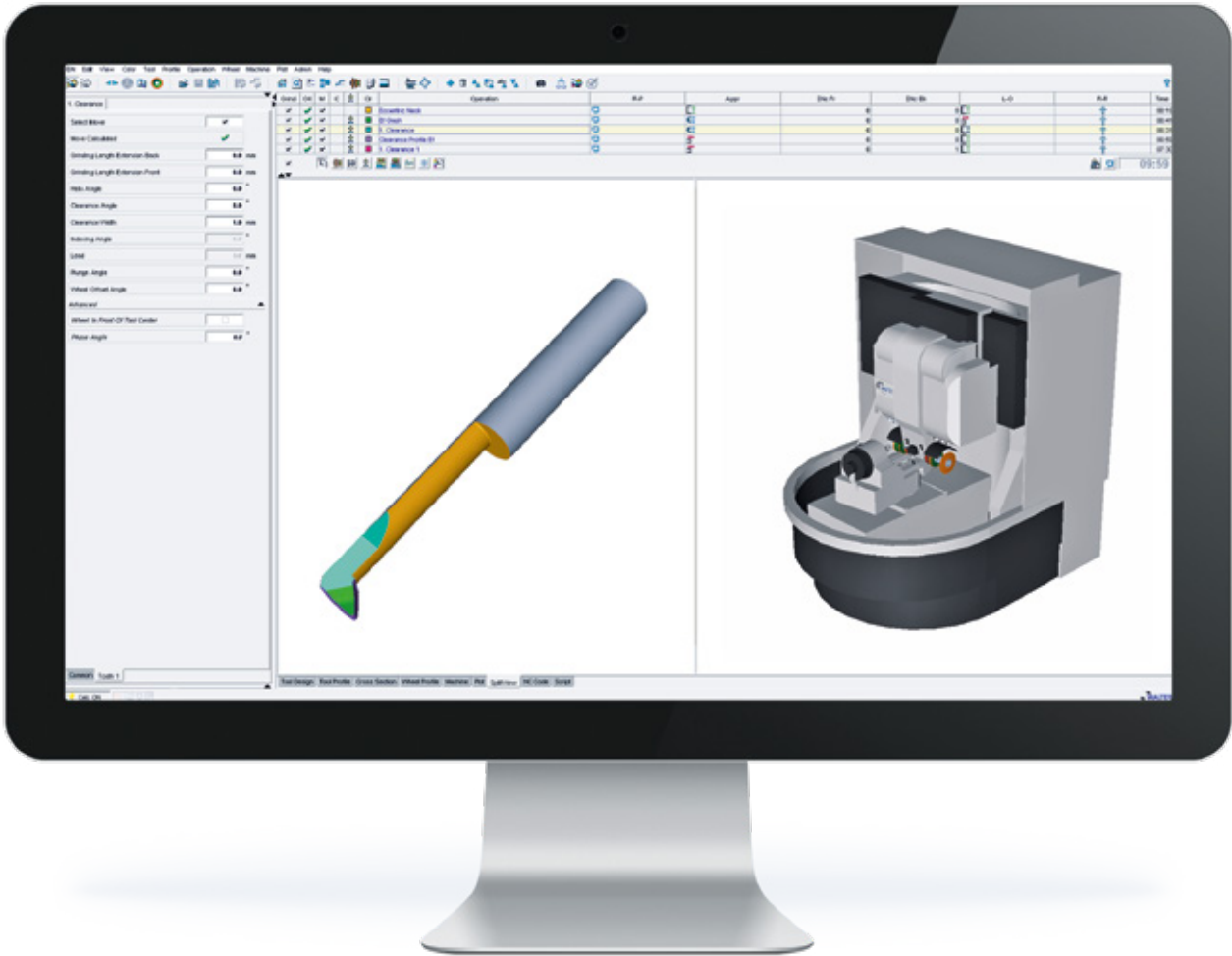
**"Shank/support steady" option**

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):  
Conical end mill, bone drill, medical milling tool, medical drill, micromilling tool, microdrill, internal turning tool, burr, blade, drill

# Application software for tool machining



## 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.

- Permanent set-actual comparison for the torque

## 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.

- 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.



# 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



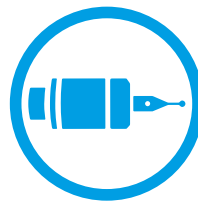
## Prevention

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	385 mm
Y axis	320 mm
Z axis	320 mm
X' axis	110 mm
Rapid traverse speed X, Y, Z	max. 30 m/min
C axis	± 200 °
A axis	1,000 rpm
B axis	± 140 °
Linear resolution	0.0001 mm
Radial resolution	0.0001 °

## Grinding spindle drive

Max. grinding wheel diameter	150 mm
Grinding spindle speed	0 – 10,500 rpm

### HELITRONIC MICRO with motor spindle

Spindle ends	3
Tool holder	HSK 40
Peak power	2 x 4.3 and 1 x 6.5 kW

## Others

Machine weight	approx. 6,000 kg
Power consumption at 400 V/50 Hz	approx. 25 kVA

## Tool data <sup>1)</sup>

Min. tool diameter	0.1/3 mm
production/resharpening	
Max. tool diameter	12.7 mm
Max. workpiece length, peripheral grinding <sup>2)</sup>	120 (300) mm
Max. workpiece length, end face grinding <sup>2)</sup>	120 (300) mm
Max. workpiece weight	12 kg

## Robot loader

Tool capacity (depending on the diameter)	up to 1,500
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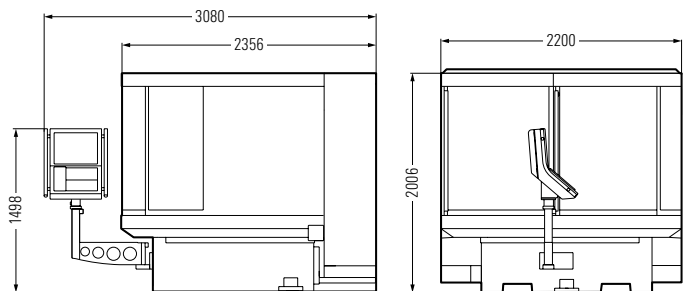
## Options

### Coolant system

On request – several types are possible

### Others

Automatic support steady, software etc.



HELITRONIC MICRO with integrated robot loader

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

<sup>2)</sup> 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

WALTER machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC ESSENTIAL	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI POWER	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI AUTOMATION	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC BASIC	P R	HSS TC C/C CBN	350 mm / Ø3 – 290 (320) mm
HELITRONIC POWER	P R	HSS TC C/C CBN	350 mm / Ø3 – 290 (320) mm
HELITRONIC POWER 400	P R	HSS TC C/C CBN	520 mm / Ø3 – 315 mm
HELITRONIC VISION 400 L	P R	HSS TC C/C CBN	420 mm / Ø3 – 315 mm
HELITRONIC VISION 700 L	P R	HSS TC C/C CBN	700 mm / Ø3 – 200 mm
HELITRONIC MICRO	P R	HSS TC C/C CBN HSS TC C/C CBN	120 mm / Ø0.1 – 12.7 mm 120 mm / Ø3 – 12.7 mm

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	200 mm / Ø0.2 – 200 mm
PROFILE LINE	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
WS 11/WS 11-SP	P R M	HSS TC	– / up to Ø25 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

WALTER machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC DIAMOND EVOLUTION	P R	HSS TC C/C CBN PCD	185/255 mm / Ø1 – 165 mm
HELITRONIC POWER DIAMOND	P R	HSS TC C/C CBN PCD	350 mm / Ø3 – 290 (400) mm
HELITRONIC POWER DIAMOND 400	P R	HSS TC C/C CBN PCD	520 mm / Ø3 – 380 mm
HELITRONIC VISION DIAMOND 400 L	P R	HSS TC C/C CBN PCD	420 mm / Ø3 – 315 mm



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



## Customer Care – Comprehensive range of services



## Grinding – Grinding of indexable inserts

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
PROFILE LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø50 mm
COMPACT LINE	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
INSERT LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø75 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length / diameter
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm



## Measuring – Contactless measurement of tools, workpieces and grinding wheels

WALTER machines	Use	Tool dimensions <sup>1)</sup> max. length / diameter
HELICHECK PRECISION	M	420 mm / Ø1 – 320 mm
HELICHECK ADVANCED	M	420 mm / Ø1 – 320 mm
HELICHECK PRO	M	300 mm / Ø1 – 200 mm
HELICHECK PRO LONG	M	730 mm / Ø1 – 200 mm
HELICHECK PLUS	M	300 mm / Ø0.1 – 200 mm
HELICHECK PLUS LONG	M	730 mm / Ø0.1 – 200 mm
HELICHECK 3D	M	420 mm / Ø3 – 80 mm
HELISET PLUS	M	400 mm / Ø1 – 350 mm
HELISET	M	400 mm / Ø1 – 350 mm

**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

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

<sup>2)</sup> From the theoretical taper diameter of the workpiece holder.







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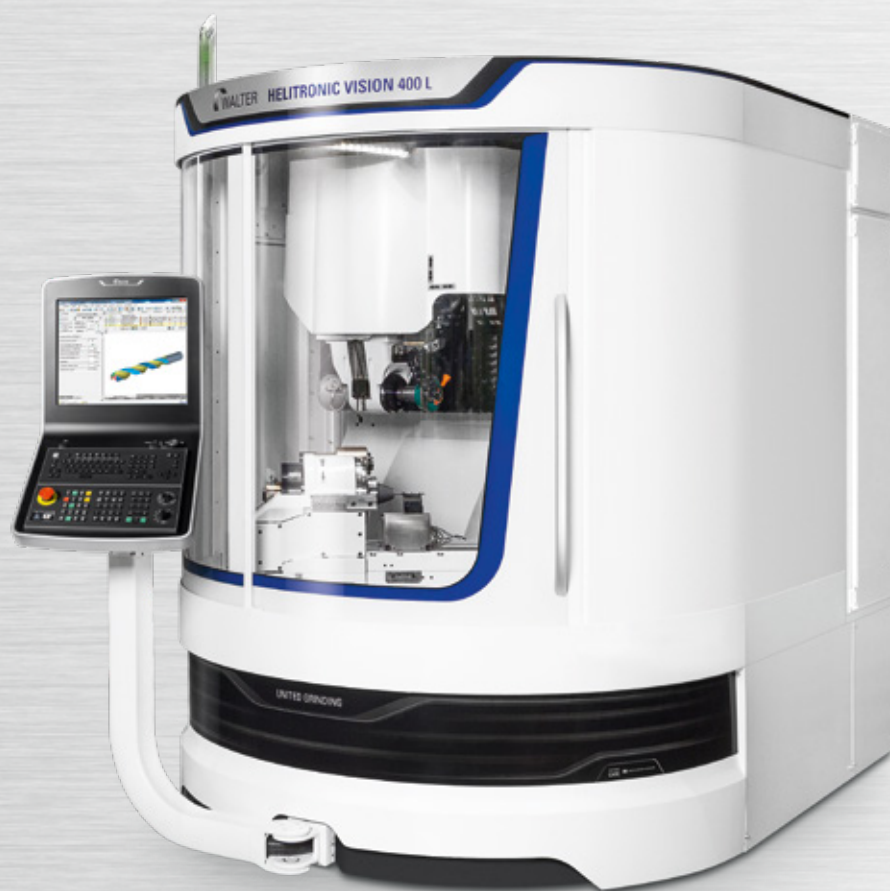
For worldwide contact details, please visit  
**[www.walter-machines.com](http://www.walter-machines.com)**





# HELITRONIC VISION 400 L

Ultimate precision and dynamic performance in volume production of tools with a length of 420 mm



## Key parameters

The HELITRONIC VISION 400 L for volume production of rotationally symmetrical tools and production parts with complex geometries with the ultimate in precision. Permissible diameters up to 315 mm, tool lengths up to 420 mm and weight up to 50 kg.



Grinding



Eroding



Laser



Measuring



Software



Customer Care

## Walter Maschinenbau GmbH

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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 VISION 400 L

The HELITRONIC VISION 400 L is our high-end solution for high-precision tool grinding. The mineral cast machine bed has outstanding vibration dampening and ensures optimum action of the very dynamic drive on the grinding wheel, while at the same time its low temperature sensitivity makes the grinding process particularly stable. The high-precision CNC tool grinding machine can grind processing lengths of up to 420 mm around the perimeter and provides optimum conditions for grinding rotationally symmetrical tools in production and/or resharpening facilities.



Grinding



Software

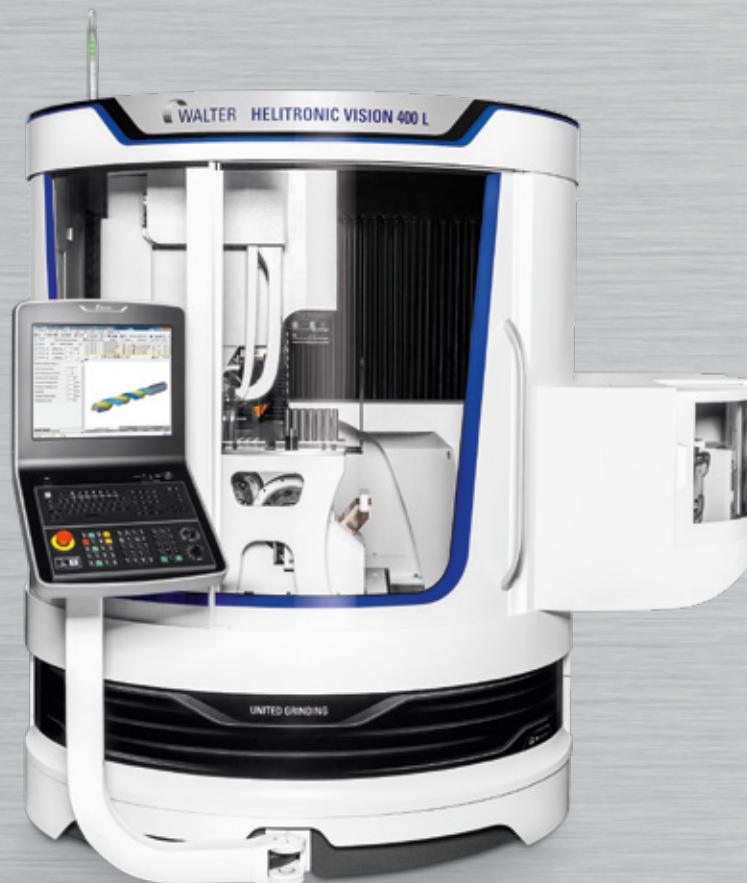
# The HELITRONIC VISION 400 L at a glance

## Application

- Grinding rotationally symmetrical tools for metalworking and woodworking industries
- For production and/or regrinding
- Also for volume production in reshaping facilities
- Fully automated, complete machining in a single clamping cycle
- Materials include HSS, carbide, cermet, ceramic

## The machine

- Optimised low-vibration solid mineral cast, gantry-type construction
- Linear X, Y, Z axes with linear drives\*
- Rotating A, C axes with high torque motors
- Belt-driven spindle with two ends or motor spindle with one end
- Each spindle end can take up to three grinding wheels
- FANUC, the global standard for control equipment
- Various loading systems
- Numerous efficiency options



HELITRONIC VISION 400 L with "Top loader" and "Grinding wheel changer" (right) – uncompromising in productivity and precision.

## Software

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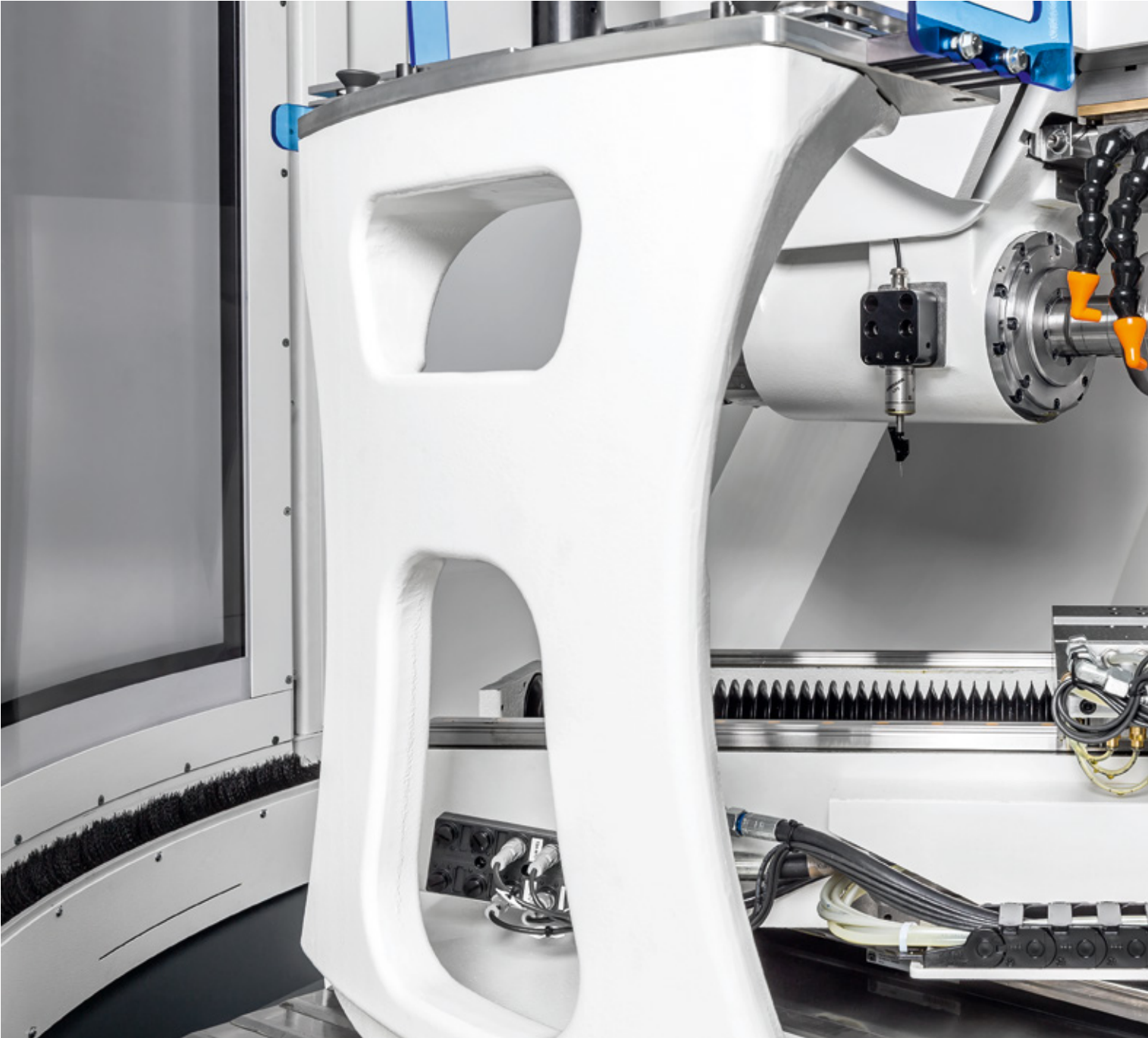
- HELITRONIC TOOL STUDIO, CAD/CAM software for design, programming, simulation and production
- Walter Window Mode WWM (optional)
- Numerous software options to extend the systems performance and to increase its efficiency



HELITRONIC VISION 400 L with the "Robot loader" (left) and "Grinding wheel changer" (right) options – the ultimate configuration for high performance.

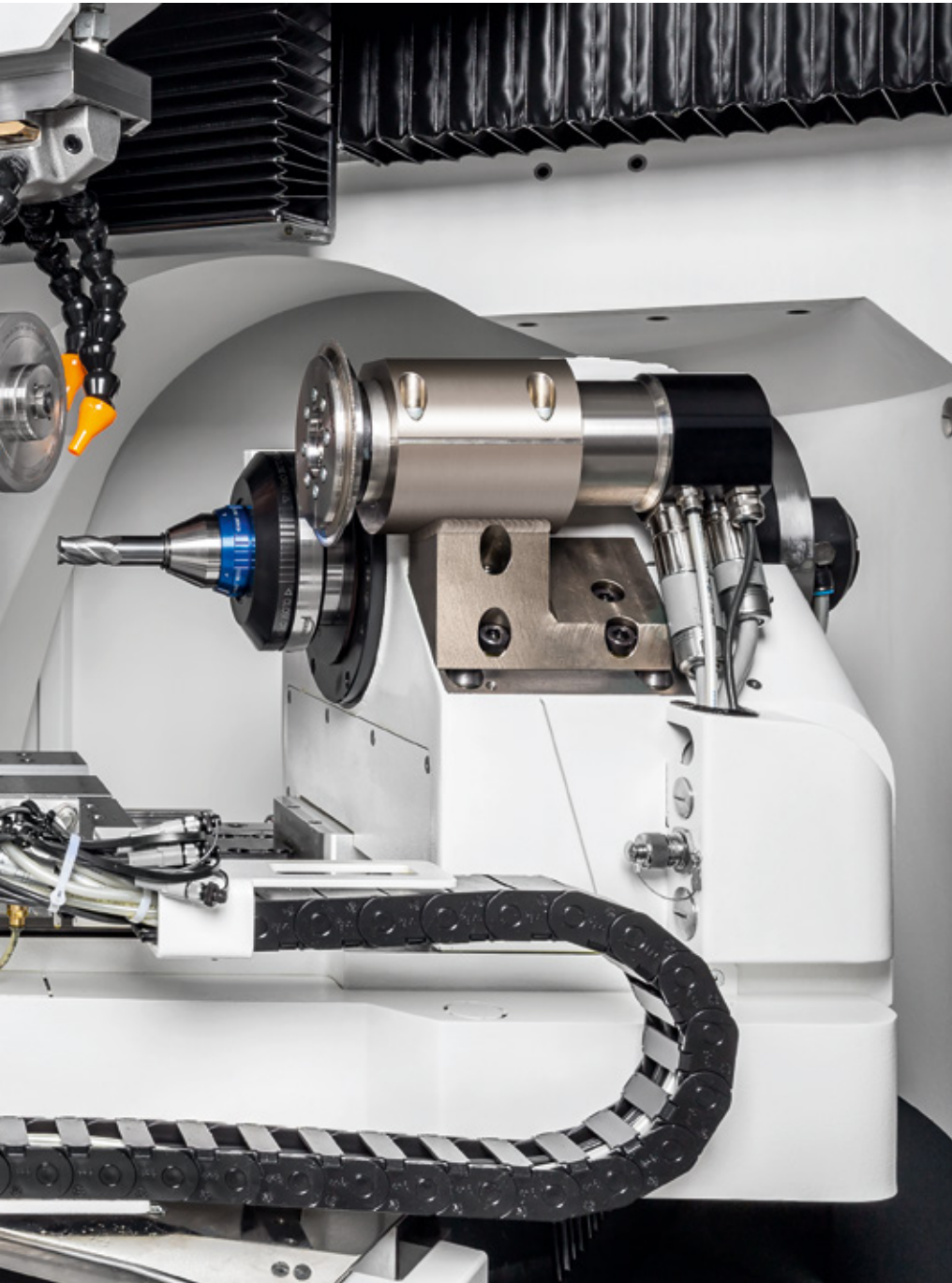
# Efficient and easy to use

1

**Example tools** (from left to right):

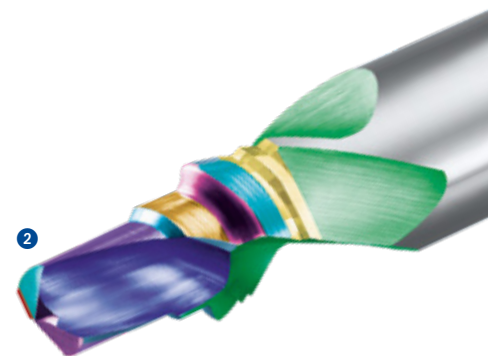
Corner radius mill, fir tree tool, shaping tool, straight contouring tool, shaped lathe tool, 2 x stepped drill bit, ball nose tool with variable helix angle, thread milling drill, drill with variable helix angle





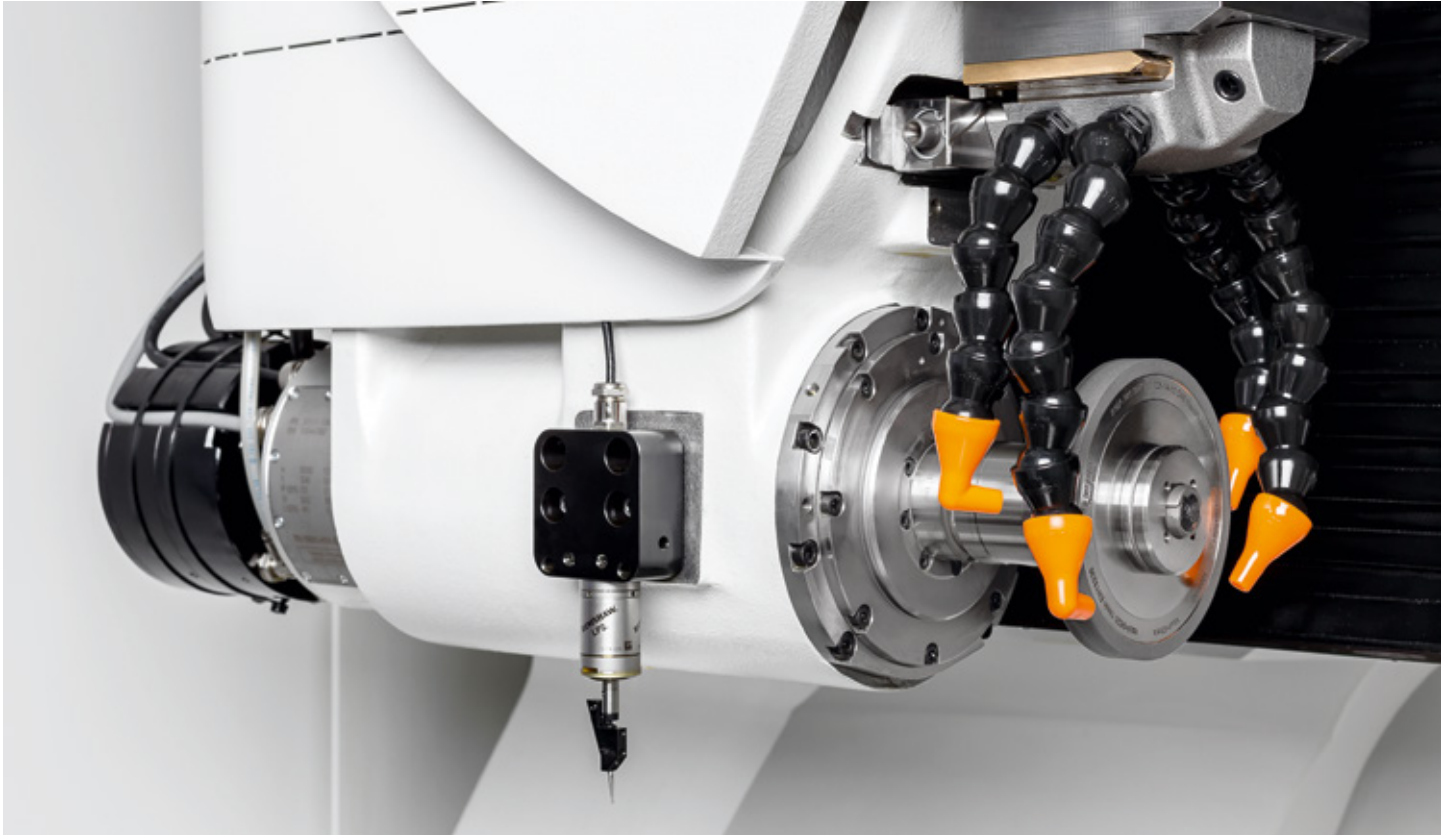
### “Automated work table” option

This option can be equipped with up to two upper slides: one with automatic traverse and one fixed. This way, long tools can be supported by a moveable steady rest and/or a tailstock. The surface quality and tool precision are enhanced as a result.



# Innovative WALTER grinding technology

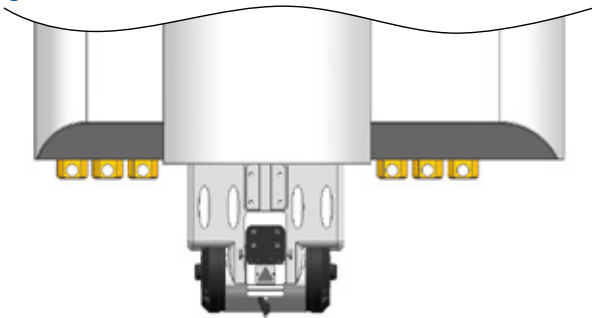
1



## “Motor spindle” option

The powerful single-ended directly driven motor spindle is equipped with a liquid cooling system. Up to three grinding wheels can be mounted per grinding wheel adaptor. In combination with the grinding wheel changer, up to 24 grinding wheel adaptors (72 grinding wheels) can be used in the grinding process. The result is the highest levels of efficiency and productivity. Optionally available (upon request only) also as **motor spindle with 24,000 rpm**.

2



## Belt-driven spindle with two spindle ends (standard)

The double-ended, belt-driven spindle is driven by a powerful motor. Each end of the spindle can take up to three grinding wheels. The grinding wheel sets are allocated to the spindle end and are saved, along with all data.





#### **“Grinding wheel dresser” option**

When it comes to the conditioning/dressing of grinding wheels during the production process, with subsequent software-controlled compensation, the high-performance electrical grinding wheel dresser is the perfect solution.



#### **“Sharpening stone holder” option**

With the permanently installed sharpening stone holder, WALTER enables the automatic opening of the wheel bond during production. The HELITRONIC TOOL STUDIO software controls the process and enables the operator to open the bond at the appropriate time according to the grinding wheel condition.

## Other options



### 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.

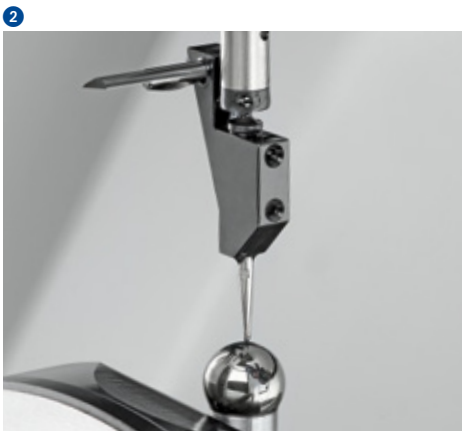
The probe for the tactile measurement is fitted on the tool carrier and is mounted in place of the electrical dresser.



### Automatic, electrical measurement of the machine reference

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

- 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



### Automatic positioning and measurement system "Heli-Probe" (standard)

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.

### Calibration (standard)

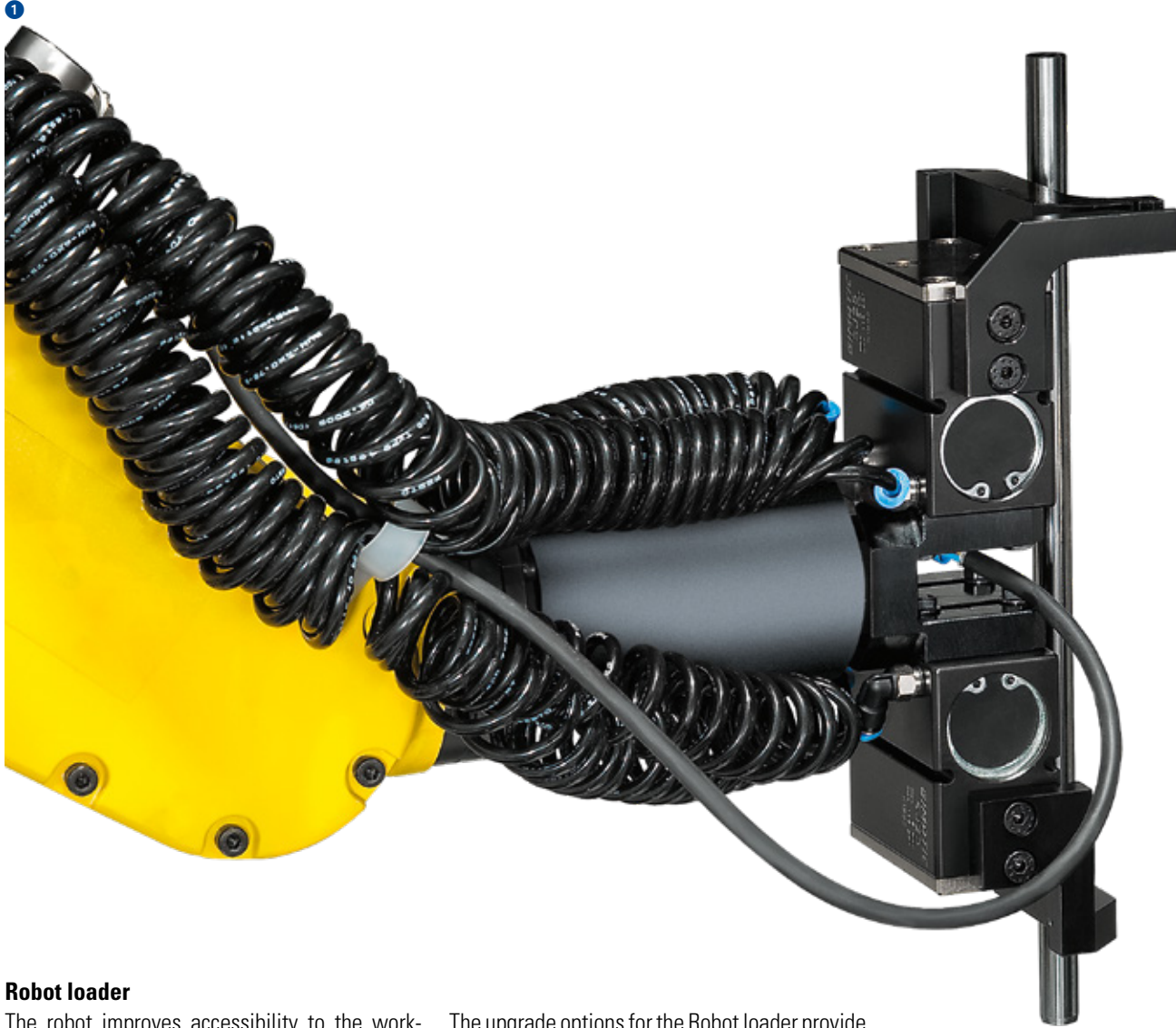
Calibration consists of a calibration ball and software. It is used to automatically calibrate the X, Y and Z axes of the machine with a loader. The calibration frequency can be freely chosen in the loader program. Machines without a loading system can be calibrated manually.

### Integrated Measuring System IMS

With the integrated IMS measurement system, 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.

- Determination of the rake angle, the outer diameter and the core diameter for cylindrical tools
- Tactile measurement system to position the tools fully automatically.
- Fully automatic thermal profile compensation for the linear axes

## 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 1,500 workpieces can be loaded with the standard model using the robot.

The upgrade options for the Robot loader provide the user (depending on the type of workpiece or the workpiece diameter) with a capacity of up to 7,500 workpieces of 3 mm in diameter or the possibility of automatically loading/unloading tools with HSK holders .



### Robot loader 25

For tools in an HSK adaption with a total weight of up to 20 kg and a tool diameter of up to 315 mm in combination with the HELITRONIC VISION 400 L. Thanks to the innovative, newly developed loader software, a «chaotic» loading of up to seven pallet levels is possible. An automatic diameter determination is also optionally available and ensures a smooth, automated production sequence.

Capacity of the available pallets:

- 21 tools, max. diameter 315 mm
- 28 tools, max. diameter 220 mm
- 70 tools, max. diameter 105 mm



### Top loader

This space-saving and inexpensive automation solution is integrated directly into the machine envelope. Automatic teaching enables short setup times. Depending on the tool diameter, the Top loader offers a maximum of 500 places for tools.

Tool capacity, max. (sample diameters)

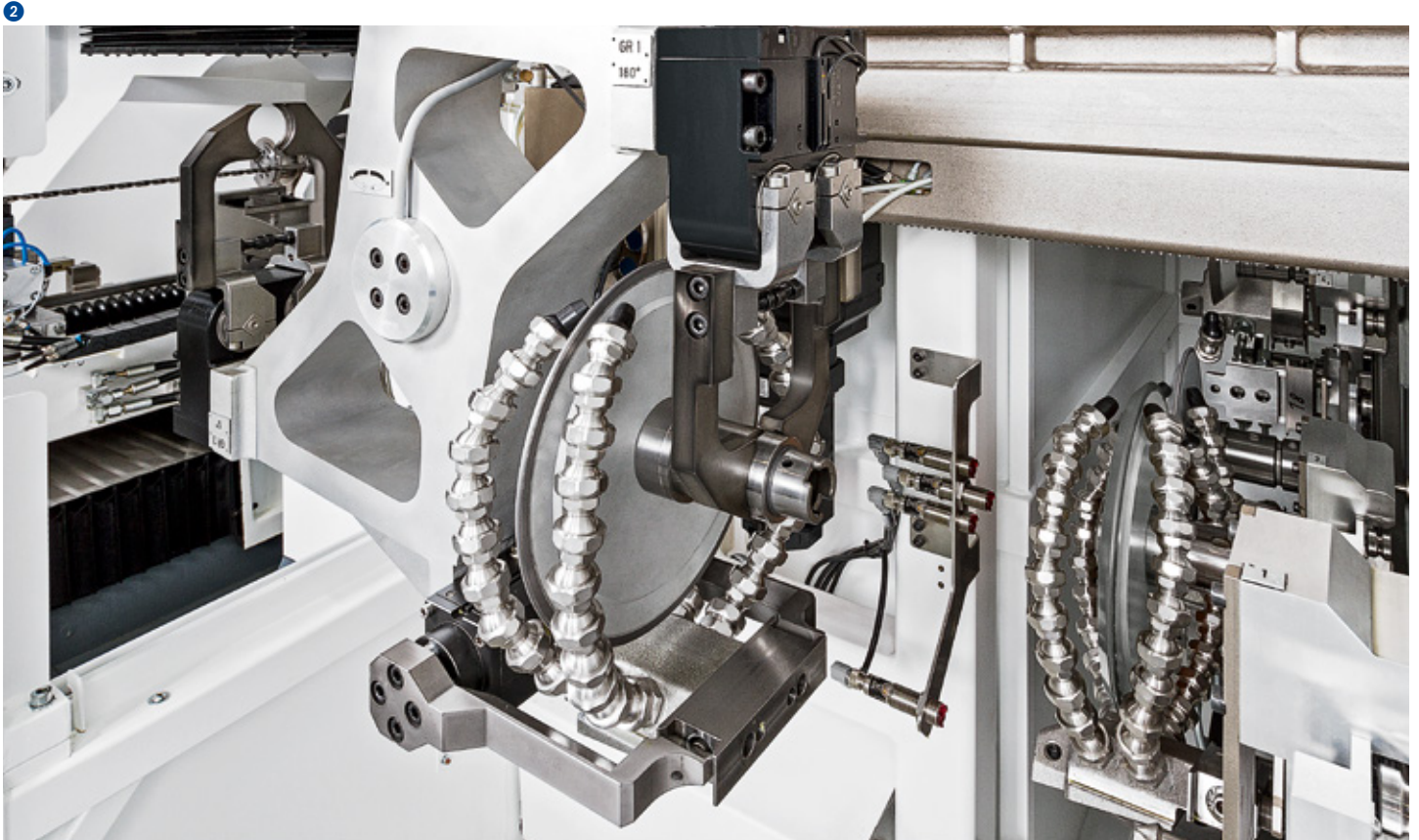
- 500 tools: diameter 3 mm
- 42 tools: diameter 20 mm
- 20 tools: diameter 32 mm

## Automation options



### **Grinding wheel changer 4/8 x**

Affordable, compact, and flexible too. With a capacity of up to 24 grinding wheels it quadruples the grinding wheel capacity of the HELITRONIC VISION 400 L. The max. grinding wheel diameter is 254 mm. The coolant supply and the grinding set form a single unit. This ensures reliable wheel set replacement and optimum coolant delivery.

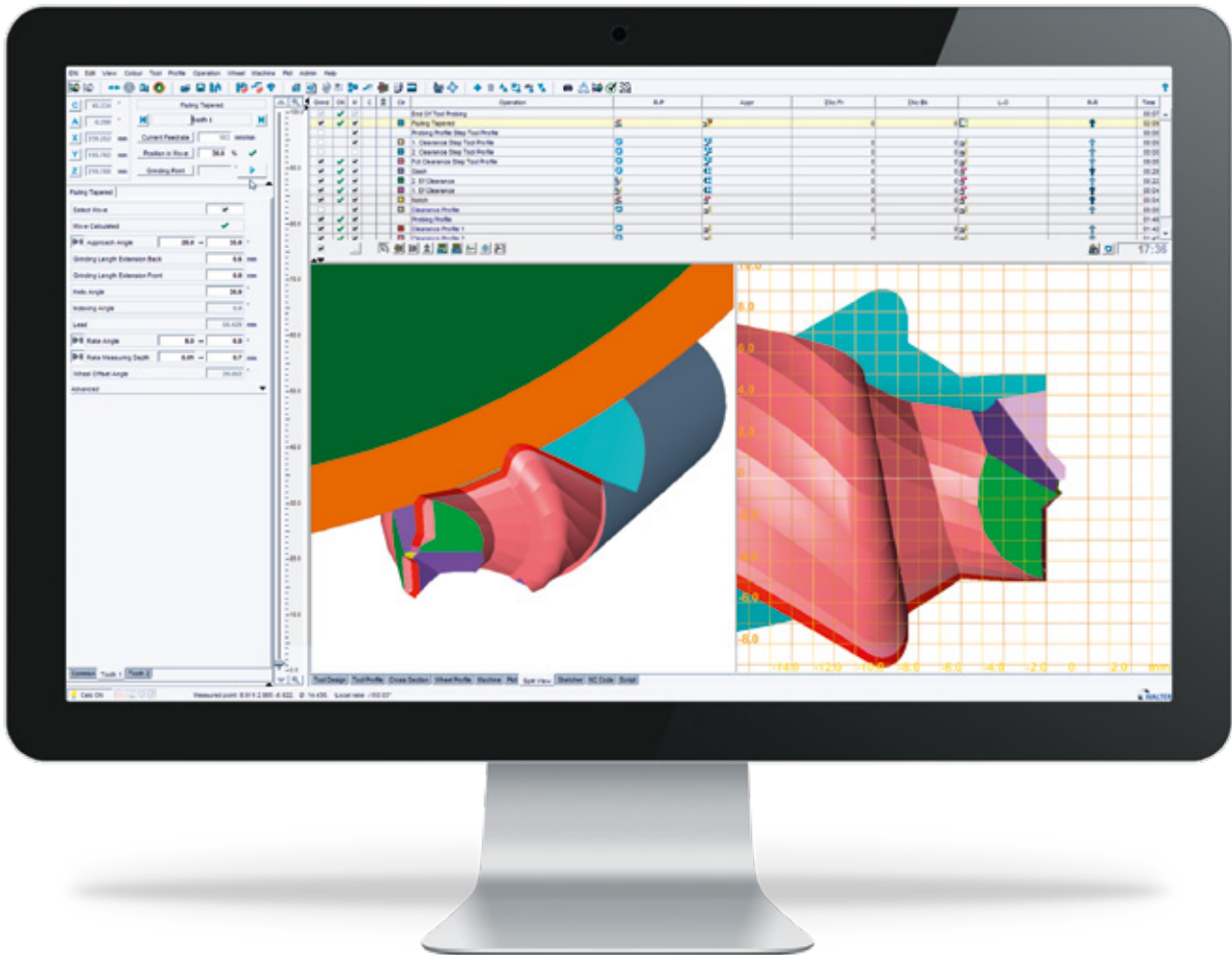


- Flexible loading systems
- Up to 24 grinding wheel holders with grinding wheel changers

#### **Grinding wheel changer 12/24 x**

A real machine enhancement from WALTER. With a capacity of up to 72 grinding wheels it increases the grinding wheel capacity of the HELITRONIC VISION 400 L by a factor of twelve. The double gripper allows fast replacement times and the max. grinding wheel diameter is 254 mm. When used in combination with tool loading systems, the flexibility is increased significantly. This applies primarily to complex geometries and large volumes. The coolant supply and the grinding set form a single unit. This ensures reliable, fast wheel set replacement and optimum coolant delivery.

# Application software for tool machining



## HELITRONIC TOOL STUDIO – Operating convenience with all grinding applications

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HELITRONIC TOOL STUDIO: This combines ease of programming with the greatest possible flexibility. With the HELITRONIC TOOL STUDIO, only a little work is needed by the user to program machining steps and movement sequences for both rotationally symmetrical standard tools and for

special tools. 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

- Drawing and grinding with a single software
- Import and export of DXF drawings

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

- Global production of tools with consistent quality based on a reference model

## “Sketcher”

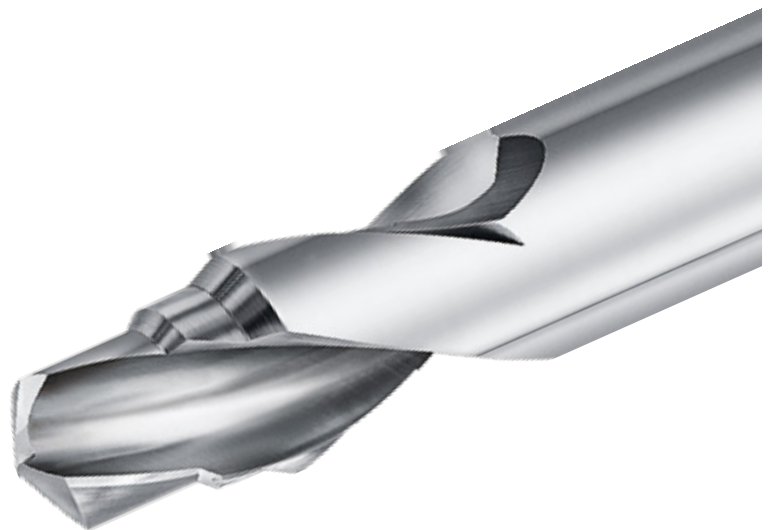
Do you sometimes wonder why you need to draw tools separately in a CAD program and then recreate the desired tool in another software package? Thanks to the “Sketcher” option, this is now a thing of the past. You can now create CAD drawings, program tool ident numbers and grind the desired tool in one software system. HELITRONIC TOOL STUDIO includes an integrated CAD system with an intuitive icon-based user interface for creating tool and grinding wheel drawings. The tool simulation and CAD drawing features are linked in HELITRONIC TOOL STUDIO, meaning that each parameter modification is not only reflected in the simulation model but also in the associated CAD drawing. CAD drawings can be re-used for different tools as the CAD elements used for other tool ident numbers attempt to re-connect with the tool simulation model. Users can also import and export DXF drawings, and save drawings as PDF documents. Benefit to you: Save time and resources through a central software solution!

## “Feedrate Optimizer”

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## “Quality Assurance”

Customers worldwide require consistently high tool quality in terms of material and geometry, no matter which production location is concerned. In order to satisfy these customer and market requirements, WALTER has brought the efficiency-boosting “quality assurance” solution onto the market for the established tool grinding software HELITRONIC TOOL STUDIO. By using a reference model as a basis, qualitatively equivalent tools can be produced at different locations around the world. The current model is compared to the fixed reference model at all times and a visual display shows the effect of changing any parameters. This way, deviations in quality can be detected immediately and eliminated.



## Global standard of control technology



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- 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



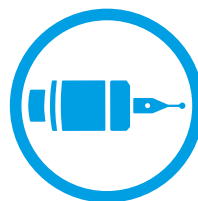
**Qualification**  
Training  
Support for production



**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

Total number of axes	5
Drive X, Y, Z	Linear drive
X-axis	500 mm
Y-axis	350 mm
Z-axis	700 mm
Rapid traverse speed X	50 m/min
Rapid traverse speed Y	50 m/min
Rapid traverse speed Z	50 m/min
Drive C	Torque
C axis (swivelling range)	± 200°
Travel speed	max. 20 rpm
Drive A	Torque
A-axis speed	750 rpm
Linear resolution	0.0001 mm
Radial resolution	0.0001°

## Grinding spindle drive

### Belt-driven spindle with two spindle ends (standard)

Clamping	HSK 50
Peak power	30 kW
Spindle Diameter	100 mm

### Motor spindle for use with grinding wheel changer (optional)

Clamping	HSK 50
Peak power	33 kW

### Motor spindle with 24,000 rpm (optional, upon request only)

Clamping	HSK 50
Peak power	26 kW

## Others

Base	Mineral casting
Gross load weight	approx. 7,000 kg
Connected load	35 kVA

## Tool data <sup>1)</sup>

Tool holder	ISO 50
Min. / Max. workpiece diameter	3 mm / 315 mm
Max. workpiece diameter without upper plate	360 mm
Max. workpiece length <sup>2)</sup>	
peripheral grinding / end face grinding	420 mm / 390 mm
Max. workpiece weight	50 kg
Space requirements, basic machine	
with opened doors (L x W x H)	4,242 x 2,428 x 2,639 mm

## Options

### Automation options

- Robot loader • Robot loader 25 • Top loader • Grinding wheel changer 4/8 x
- Grinding wheel changer 12/24 x

### Software / Efficiency options

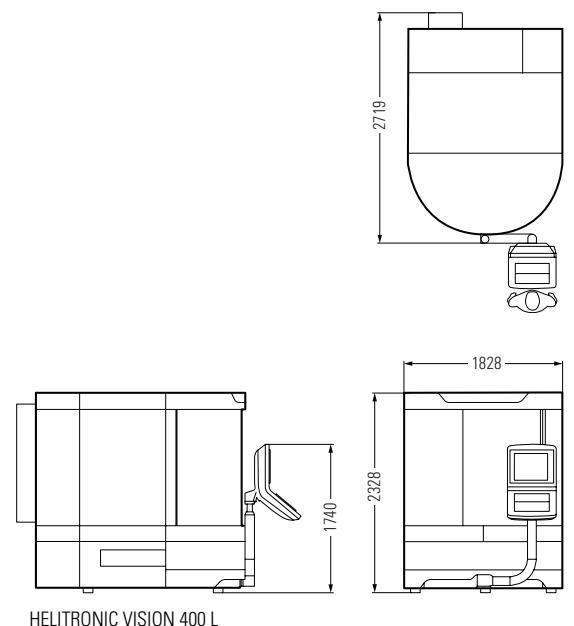
- "Sketcher" • "Feedrate Optimizer" • "Quality Assurance", etc.

### Coolant system (upon request – several types are possible)

**Ball screw drive** (available upon request with ball screw drive instead of linear versions – HELITRONIC VISION 400)

### Other Options

- Automated work table • Grinding wheel dresser • Sharpening stone holder
- Automatic grinding wheel measurement • Automatic, electrical measurement of the machine reference • Integrated Measurement System IMS etc.



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

<sup>2)</sup> 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

WALTER machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC ESSENTIAL	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI POWER	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI AUTOMATION	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC BASIC	P R	HSS TC C/C CBN	350 mm / Ø3 – 290 (320) mm
HELITRONIC POWER	P R	HSS TC C/C CBN	350 mm / Ø3 – 290 (320) mm
HELITRONIC POWER 400	P R	HSS TC C/C CBN	520 mm / Ø3 – 315 mm
HELITRONIC VISION 400	P R	HSS TC C/C CBN	370 mm / Ø3 – 315 mm
HELITRONIC VISION 400 L	P R	HSS TC C/C CBN	420 mm / Ø3 – 315 mm
HELITRONIC VISION 700 L	P R	HSS TC C/C CBN	700 mm / Ø3 – 200 mm
HELITRONIC MICRO	P R	HSS TC C/C CBN HSS TC C/C CBN	120 mm / Ø0.1 – 12.7 mm 120 mm / Ø3 – 12.7 mm

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	200 mm / Ø0.2 – 200 mm
PROFILE LINE	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
WS 11/WS 11-SP	P R M	HSS TC	– / up to Ø25 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

WALTER machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC DIAMOND EVOLUTION	P R	HSS TC C/C CBN PCD	185/255 mm / Ø1 – 165 mm
HELITRONIC POWER DIAMOND	P R	HSS TC C/C CBN PCD	350 mm / Ø3 – 290 (400) mm
HELITRONIC POWER DIAMOND 400	P R	HSS TC C/C CBN PCD	520 mm / Ø3 – 380 mm
HELITRONIC VISION DIAMOND 400	P R	HSS TC C/C CBN PCD	370 mm / Ø3 – 315 mm
HELITRONIC VISION DIAMOND 400 L	P R	HSS TC C/C CBN PCD	420 mm / Ø3 – 315 mm



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



## 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 <sup>1)</sup> Inscribed / circumscribed circle
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
PROFILE LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø50 mm
COMPACT LINE	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
INSERT LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø75 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length / diameter
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm



## Measuring – Contactless measurement of tools, workpieces and grinding wheels

WALTER machines	Use	Tool dimensions <sup>1)</sup> max. length / diameter
HELICHECK PRECISION	M	420 mm / Ø1 – 320 mm
HELICHECK ADVANCED	M	420 mm / Ø1 – 320 mm
HELICHECK PRO	M	300 mm / Ø1 – 200 mm
HELICHECK PRO LONG	M	730 mm / Ø1 – 200 mm
HELICHECK PLUS	M	300 mm / Ø0.1 – 200 mm
HELICHECK PLUS LONG	M	730 mm / Ø0.1 – 200 mm
HELICHECK 3D	M	420 mm / Ø3 – 80 mm
HELISSET PLUS	M	400 mm / Ø1 – 350 mm
HELISSET	M	400 mm / Ø1 – 350 mm

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

<sup>2)</sup> From the theoretical taper diameter of the workpiece holder.







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**[www.walter-machines.com](http://www.walter-machines.com)**





# HELITRONIC VISION 700 L

High-performance tool-grinding machine  
for tools up to 700 mm in total length



## Key features

The HELITRONIC VISION 700 L from the HELITRONIC range offers optimum productivity with long, rotationally symmetrical tools. Tool lengths up to 700 mm, tool diameters from 3 to 200 mm.



Grinding



Eroding



Laser



Measuring



Software



Customer Care

## Walter Maschinenbau GmbH

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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 VISION 700 L

The HELITRONIC VISION 700 L is particularly suitable for machining long drills and tools clamped between tips, such as long hob cutters. An automated work table and moving support systems ensure millimetre precision and quality for long tools. Thanks to its grinding wheel changer and robot loader the HELITRONIC VISION 700 L is able to guarantee optimum productivity – from single-item to large-scale production.



Grinding



Software

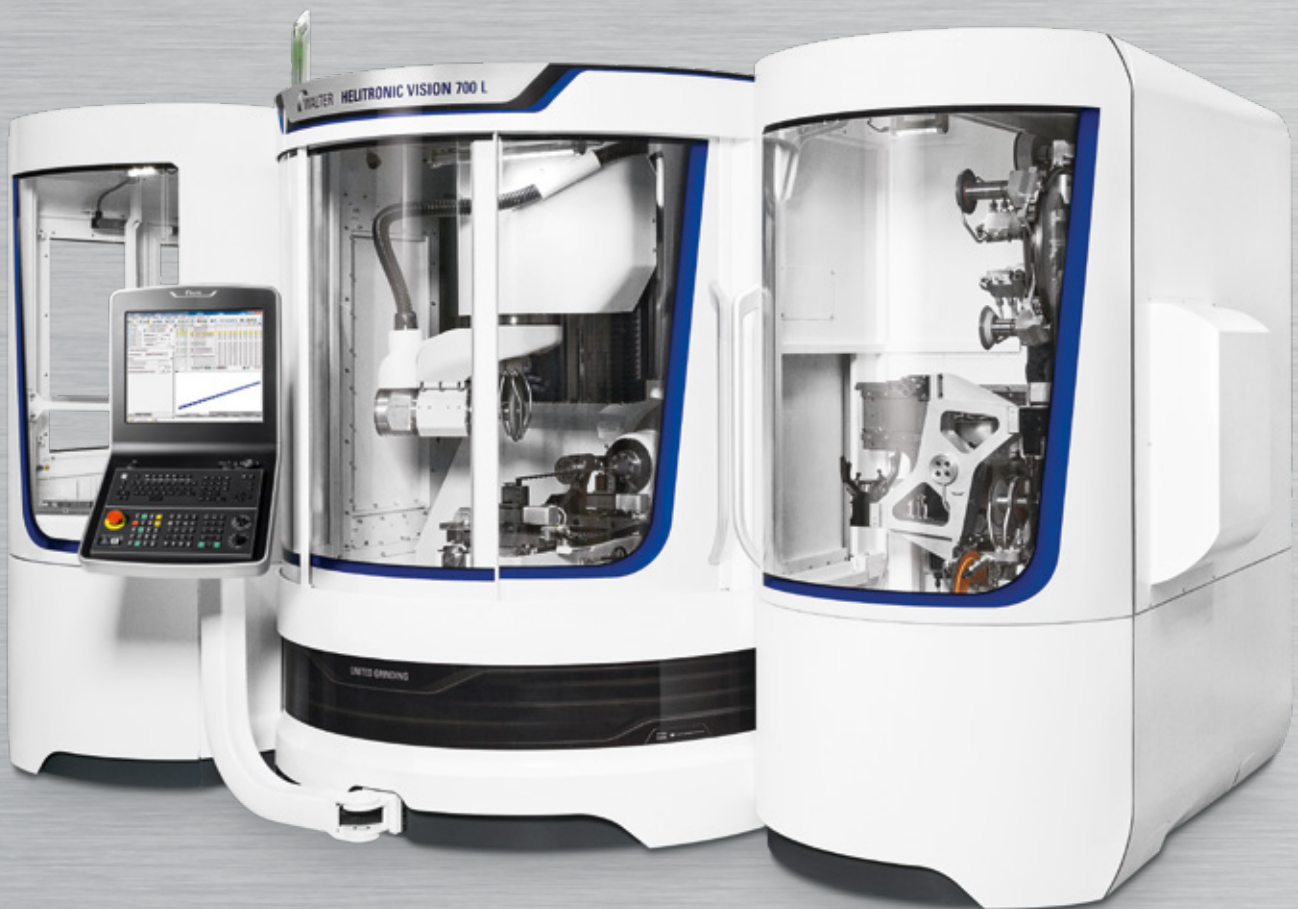
# The HELITRONIC VISION 700 L at a glance

## Application

- Grinding of rotationally symmetrical tools up to 700 mm in length for the metalwork and woodwork industries
- Example applications include long, deep hole drills and hob cutters clamped between tips, as well as standard milling cutters, multi-step tools, woodwork tools, profile cutters and profile tools
- From single-item to large-scale production
- Fully automated, complete machining with only a single clamping cycle
- Materials include carbide, HSS, ceramic, cermet, CBN

## The machine

- Low vibration, solid mineral cast, gantry type construction
- X, Y, Z with linear drives
- A, C with torque motors
- Innovative C-axis concept, top arrangement with swivelling grinding wheel
- Motor spindle with one spindle end and up to 3 grinding wheels
- FANUC, the global standard for control equipment

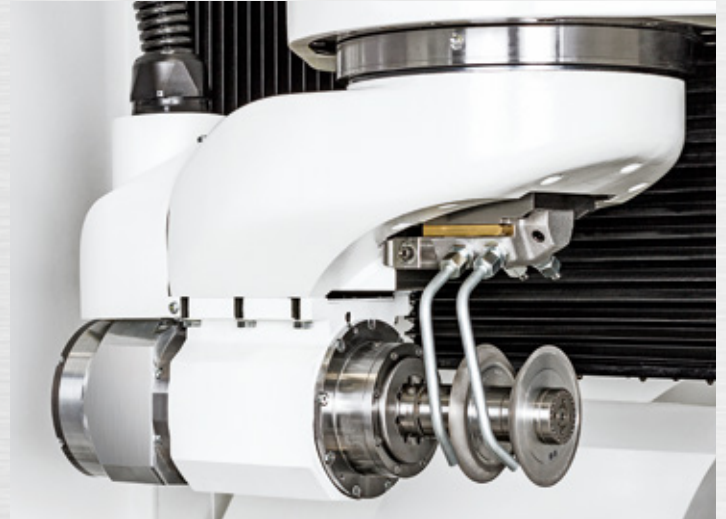


HELITRONIC VISION 700 L with robot loader and grinding wheel changer – the top high-performance version for low manpower multi-shift operation and large series.

## Software

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

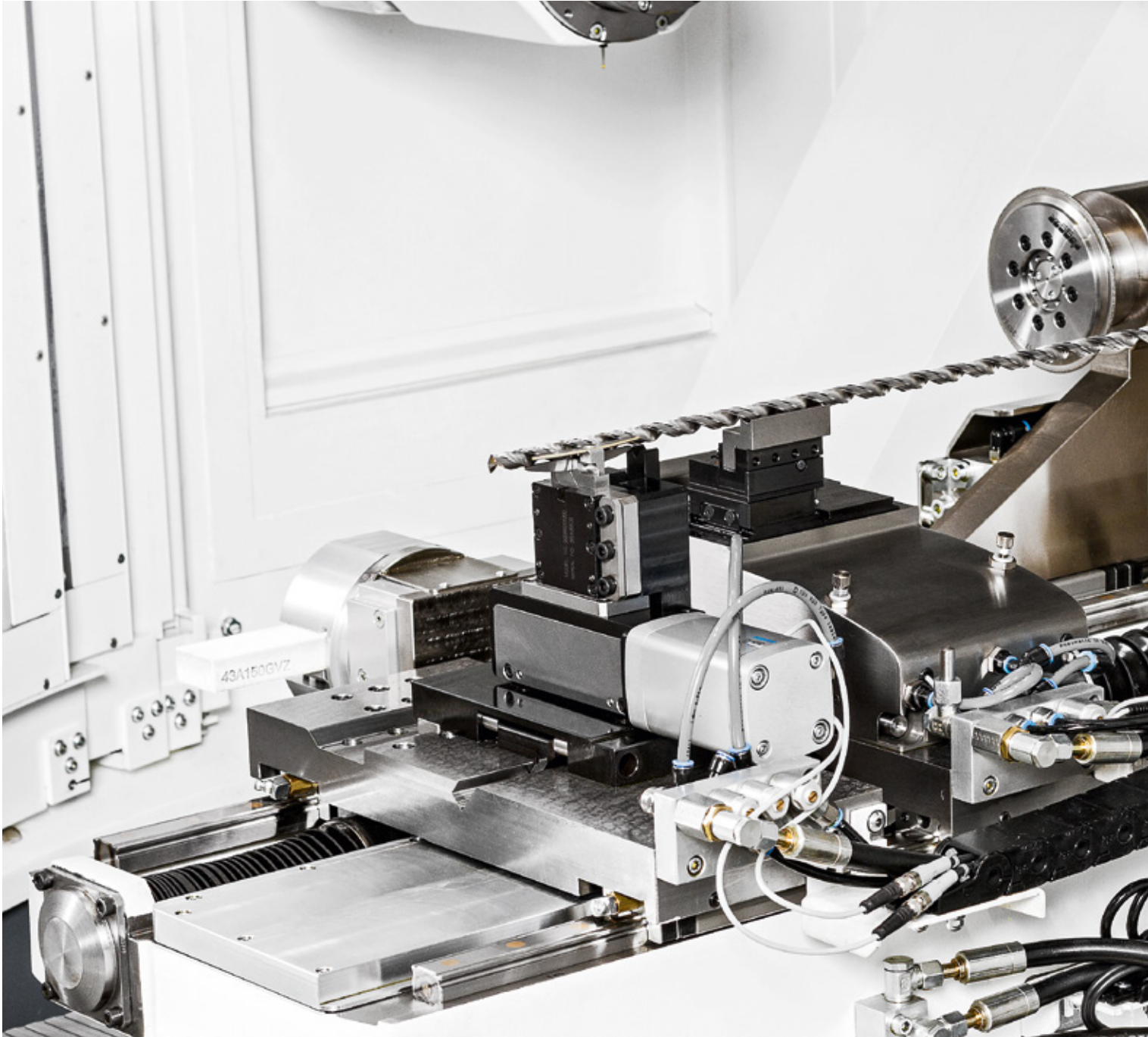


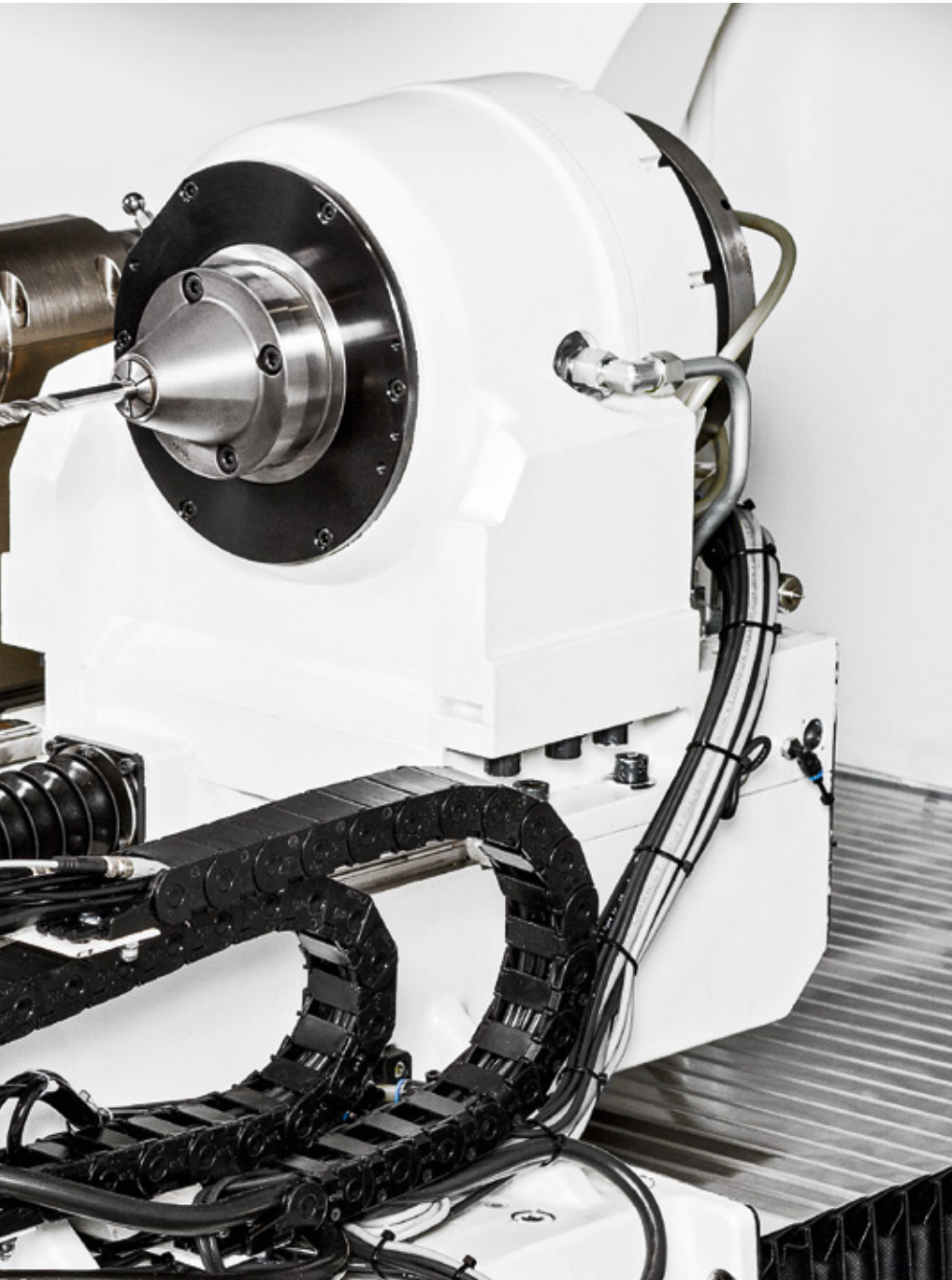
### **The ingenious C-axis concept of the HELITRONIC VISION 700 L**

The motor spindle on the top horizontal C-axis, which is equipped with up to three grinding wheels, swivels around the tool. This innovative machine geometry enables the grinding of longer tools, while maintaining the uniform footprint of the HELITRONIC VISION series. The new machine geometry is made possible thanks to WALTER's powerful HELITRONIC TOOL STUDIO grinding software.

# Geometric precision to the last millimetre

1





WALTER has developed an automated work table for accommodating a tool support system, which enables the grinding of long, rotationally symmetrical tools with a geometric length of up to 580 mm or a total length of up to 700 mm.

To ensure the support is maintained over the tool's entire geometric length of up to 580 mm, the support system moves parallel to the grinding wheel. In this case, the mobile steady rest is always present as a support system where the grinding wheel comes into contact with the tool. This minimises bending, chatter marks, excessive wear of the wheel and poor surface quality.

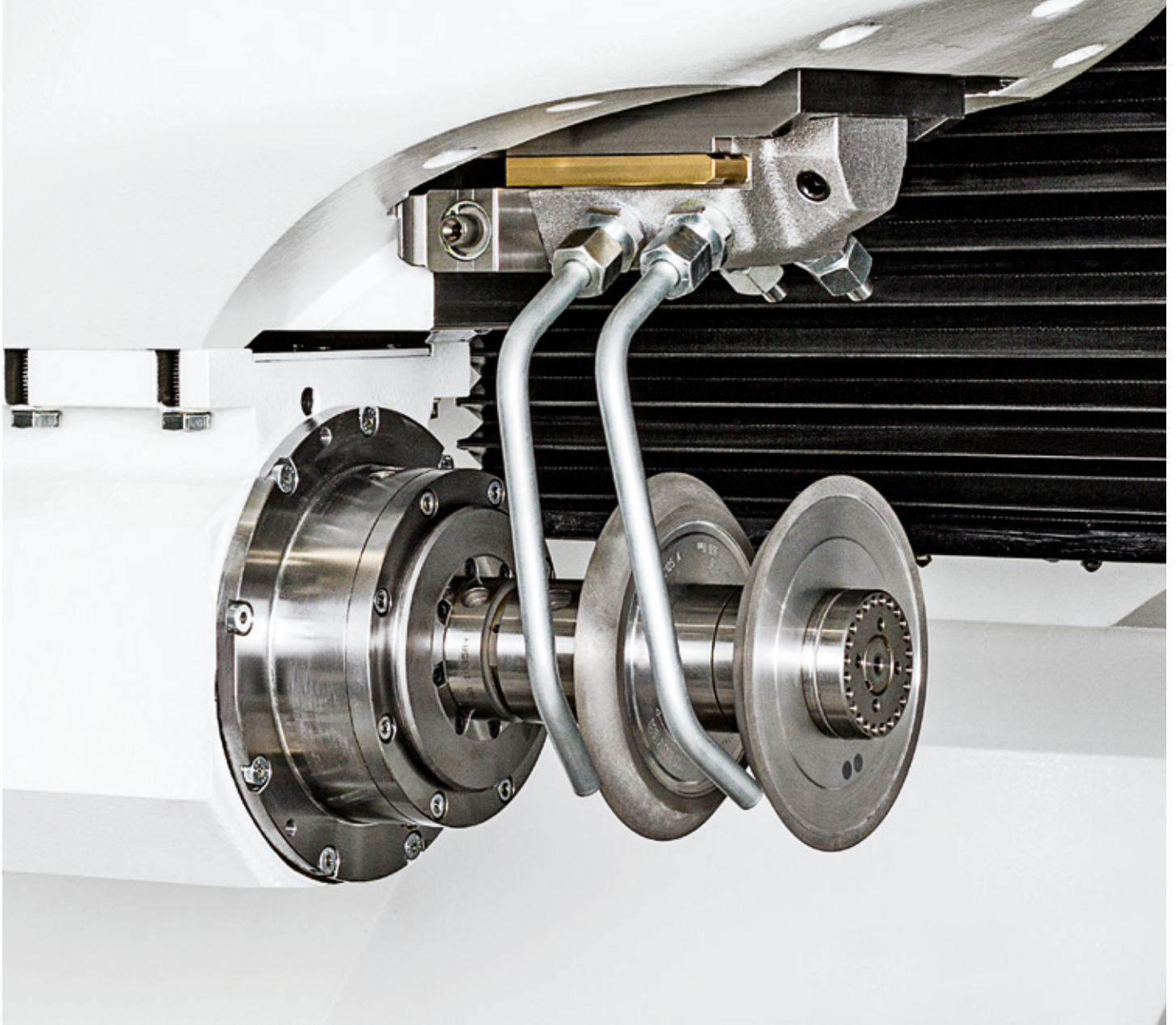
The WALTER support system can be equipped with various superstructures, for example, with steady rests or a tailstock depending on the tool being machined. The steady rests have been optimised for the tool, either in the form of a half shell, prism, bush or a special design.

This method ensures a geometry that is precise to the last millimetre.



# Grinding technology of the future

1

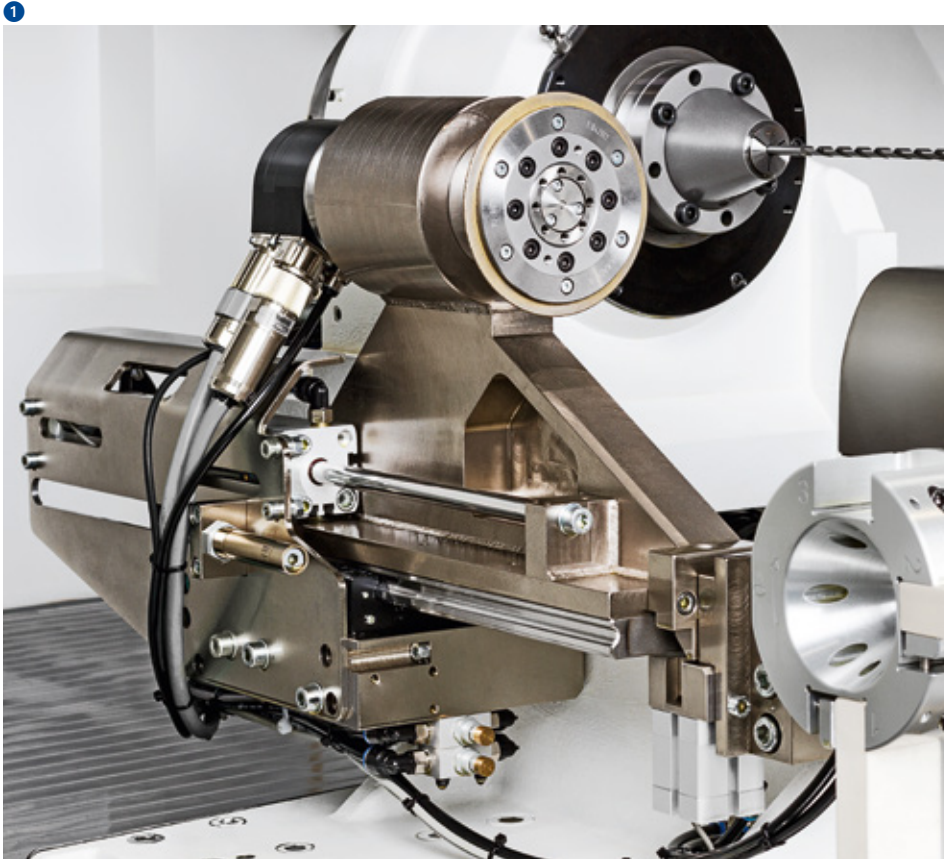


## Motor spindle on a horizontal C-axis

The direct drive motor spindle with a spindle end and a 35 kW peak power is flanged directly to the C-axis. The grinding spindle can be equipped with three grinding wheels. 6, 12 or 24 wheel sets can be incorporated into the grinding process by using the grinding wheel changer. This is sufficient for complex geometries in a single clamping.

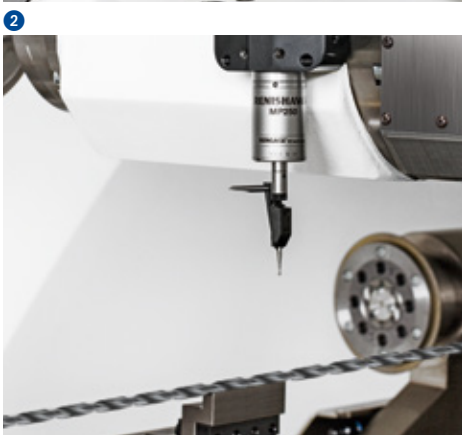
- Innovative C-axis kinematics for greater flexibility
- Max. wheel diameter of 254 mm
- Peak power of 35 kW





### Grinding wheel dresser

The HELITRONIC VISION 700 L is a high volume machine. To ensure its high performance it requires grinding wheels with extremely durable profiles. The rotary dressing device with diamond rollers regenerates profile wheels by dressing the profiles. This restores runout and grinding quality and significantly enhances the service life of the wheel.



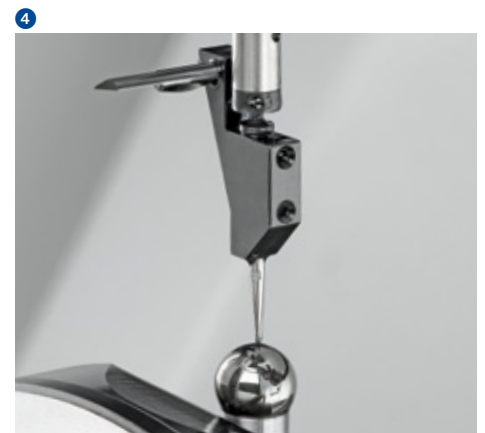
### Automatic positioning and measurement system "Heli-Probe"

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.



### The sharpening stone system extends the service life of the grinding wheels

Up to three different sharpening stones can be mounted depending on the type and number of grinding wheels used in the process. The sharpening stone is used to remove small amounts of resin bond and chips from the grinding wheel and expose the diamonds. The removal rate of the grinding wheel increases and its performance is enhanced at a lower grinding pressure. The sharpening stone prolongs the service life of the grinding wheels and thus the productivity of the HELITRONIC VISION 700 L.



### Calibration

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.

# Robot loader and efficiency options



## 1 Integrated FANUC robot loader

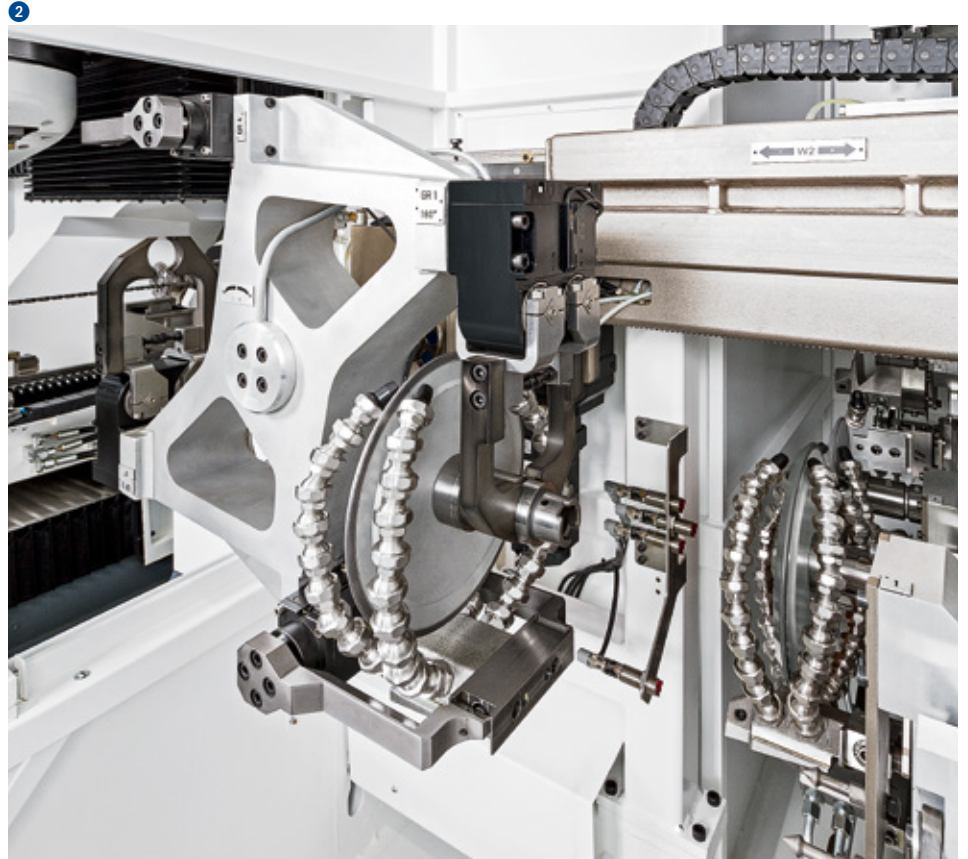
The versatile handling capabilities of the robot loader are perfectly coordinated with the flexibility of the HELITRONIC VISION 700 L. The 6-axis robot is design for a fully automatic assembly. It is freely programmable and provides maximum flexibility.



2 Long tools are stored vertically in a rack. The maximum capacity of the rack is 30 specimens.



3 Tool storage with horizontal tool pallets and a vertical rack. Utilisation according to the grinding programme. Pallet storage capacity depending on diameter: up to 3,500 blanks. A fourth pallet accommodates the ground tools.

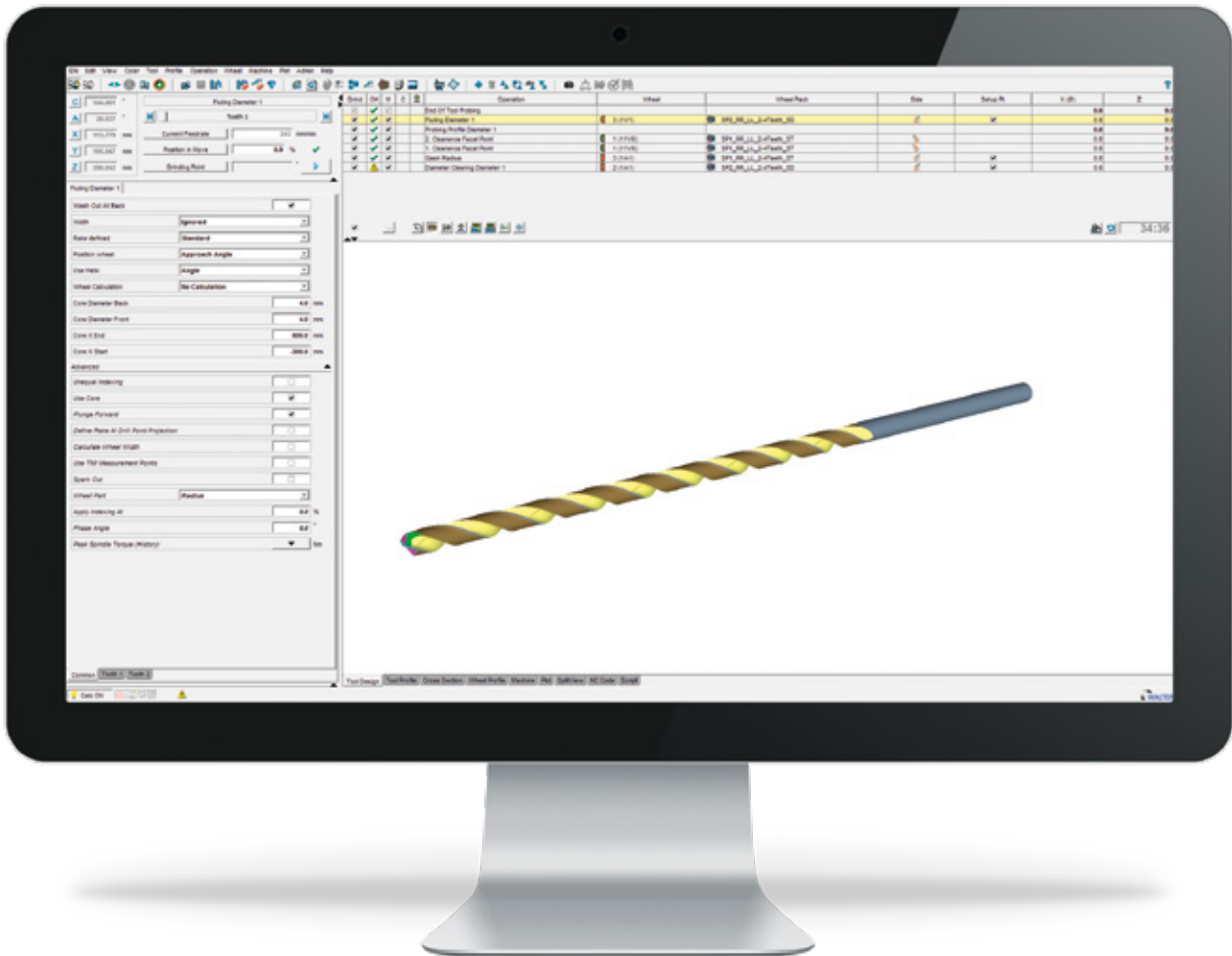


- Time-saving double gripper solution
- Max. wheel diameter of 254 mm
- Max. 72 grinding wheels for stockpiling

### Grinding wheel changer

A real machine enhancement from WALTER. With a capacity of 6, 12 or 24 stations and a maximum of 72 grinding wheels it multiplies the grinding performance of the HELITRONIC VISION 700 L. The wheel set and coolant supply are arranged on the changer as a compact unit. Minimal changing times are ensured thanks to an intelligent double gripper solution. The grinding wheel changer and robot loader pave the way for maximum productivity with complex geometries in multi-shift operation.

# Application software for tool machining



## 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.

special tools. 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.

HELITRONIC TOOL STUDIO: This combines ease of programming with the greatest possible flexibility. With the HELITRONIC TOOL STUDIO, only a little work is needed by the user to program machining steps and movement sequences for both rotationally symmetrical standard tools and for

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.

- Permanent set-actual comparison for the torque

## 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.

- Analysis of the centre of gravity
- Balancing the tool

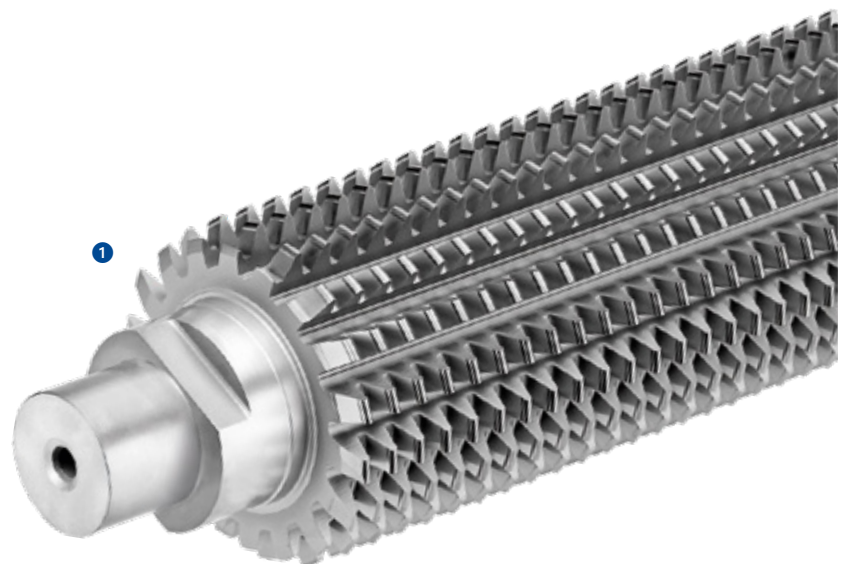
## Tool Balancer

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.



## 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



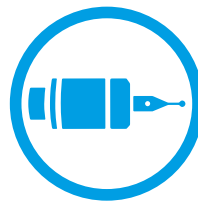
## Prevention

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	675 mm
Y axis	255 mm
Z axis	700 mm
Rapid traverse speed X, Y, Z	max. 50 m/min
C axis	± 210°
Torque motor A axis	750 rpm
Linear resolution	0.0001 mm
Radial resolution	0.0001°

## Grinding spindle drive

Max. grinding wheel diameter	254 mm
Grinding spindle speed	0 – 10,500 rpm

### HELITRONIC VISION 700 L with motor spindel

Spindle end for up to 3 grinding wheels	1
Spindle diameter (HSK 50)	100 mm
Peak power	35 kW / 10,500 rpm

## Others

Weight of machine including coolant system	approx. 7,600 kg
Power consumption at 400 V/50 Hz	approx. 35 kVA
Grinding wheel changer for 6 stations	Standard scope of delivery

## Tool data <sup>1)</sup>

Min. tool diameter	3 mm
Max. tool diameter	200 mm
Tool total length	700 mm
Max. workpiece length, peripheral grinding <sup>2)</sup>	580 mm
Max. workpiece length, end face grinding <sup>2)</sup>	550 mm
Production (solid material)	3 – 50.8 (2") mm
Max. unit weight	50 kg

## Options

### Coolant system

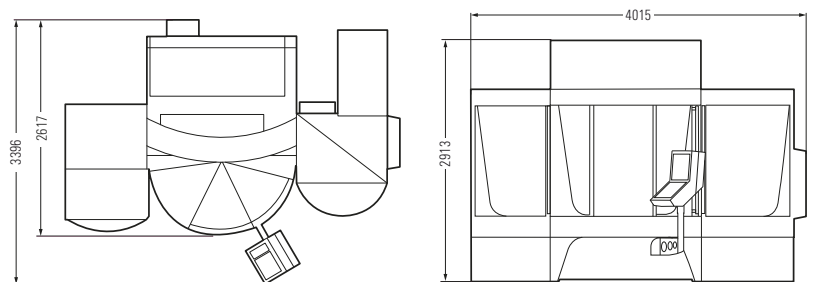
Band filter coolant system

### Loading systems

Integrated FANUC robot loader

### Others

Grinding wheel changer for 12 or 24 stations, frequency controlled pump 80 – 120 l/min at 7 – 20 bar, high frequency spindle, automated work table (moving upper plate), internal measuring system IMS, steady rest, tailstock, grinding wheel work equipment, sharpening stone system, calibration device, software



HELITRONIC VISION 700 L with robot loader and grinding wheel changer

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

<sup>2)</sup> 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.



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HELITRONIC MINI POWER	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC MINI AUTOMATION	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
HELITRONIC BASIC	P R	HSS TC C/C CBN	350 mm / Ø3 – 290 (320) mm
HELITRONIC POWER	P R	HSS TC C/C CBN	350 mm / Ø3 – 290 (320) mm
HELITRONIC POWER 400	P R	HSS TC C/C CBN	520 mm / Ø3 – 315 mm
HELITRONIC VISION 400 L	P R	HSS TC C/C CBN	420 mm / Ø3 – 315 mm
HELITRONIC VISION 700 L	P R	HSS TC C/C CBN	700 mm / Ø3 – 200 mm
HELITRONIC MICRO	P R	HSS TC C/C CBN HSS TC C/C CBN	120 mm / Ø0.1 – 12.7 mm 120 mm / Ø3 – 12.7 mm

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	200 mm / Ø0.2 – 200 mm
PROFILE LINE	P R	HSS TC C/C CBN	255 mm / Ø1 – 100 mm
WS 11/WS 11-SP	P R M	HSS TC	– / up to Ø25 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

WALTER machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length <sup>2)</sup> / diameter
HELITRONIC DIAMOND EVOLUTION	P R	HSS TC C/C CBN PCD	185/255 mm / Ø1 – 165 mm
HELITRONIC POWER DIAMOND	P R	HSS TC C/C CBN PCD	350 mm / Ø3 – 290 (400) mm
HELITRONIC POWER DIAMOND 400	P R	HSS TC C/C CBN PCD	520 mm / Ø3 – 380 mm
HELITRONIC VISION DIAMOND 400 L	P R	HSS TC C/C CBN PCD	420 mm / Ø3 – 315 mm



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



## Customer Care – Comprehensive range of services



## Grinding – Grinding of indexable inserts

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
EWAMATIC LINEAR	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
PROFILE LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø50 mm
COMPACT LINE	P R	HSS TC C/C CBN PCD	Ø3 mm / Ø50 mm
INSERT LINE	P R	HSS TC C/C CBN	Ø3 mm / Ø75 mm
RS 15	P R M	HSS TC C/C CBN PCD	– / up to Ø25 mm



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

EWAG machines	Use	Materials	Tool dimensions <sup>1)</sup> max. length / diameter
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	250 mm / Ø0.1 – 200 mm

EWAG machines	Use	Materials	Indexable inserts <sup>1)</sup> Inscribed / circumscribed circle
LASER LINE ULTRA	P R	TC C/C CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm
LASER LINE PRECISION	P R	CBN PCD CVD-D MCD/ND	Ø3 mm / Ø50 mm



## Measuring – Contactless measurement of tools, workpieces and grinding wheels

WALTER machines	Use	Tool dimensions <sup>1)</sup> max. length / diameter
HELICHECK PRECISION	M	420 mm / Ø1 – 320 mm
HELICHECK ADVANCED	M	420 mm / Ø1 – 320 mm
HELICHECK PRO	M	300 mm / Ø1 – 200 mm
HELICHECK PRO LONG	M	730 mm / Ø1 – 200 mm
HELICHECK PLUS	M	300 mm / Ø0.1 – 200 mm
HELICHECK PLUS LONG	M	730 mm / Ø0.1 – 200 mm
HELICHECK 3D	M	420 mm / Ø3 – 80 mm
HELISET PLUS	M	400 mm / Ø1 – 350 mm
HELISET	M	400 mm / Ø1 – 350 mm

**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

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

<sup>2)</sup> From the theoretical taper diameter of the workpiece holder.







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