

# HELITRONIC RAPTOR

THE REASONABLY PRICED ALLROUNDER  
FOR PRODUCING AND REGRINDING TOOLS

Now with  
C.O.R.E.  
technology



# HELITRONIC RAPTOR

## 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 (standard)
- Productivity package (option) consisting of 24 kW grinding spindle drive unit (0 – 7000 rpm) and glass scales
- Up to three grinding wheels for each spindle end
- Automatic clamping cylinder with clamping device
- Option Top loader: Up to 500 tools<sup>3)</sup> from 3 mm to 32 mm in diameter
- Option Robot loader: Up to 7,500 tools<sup>3)</sup>; max. tool weight 5 kgs; max tool diameter 125 mm
- FANUC, the global standard of control technology
- 24" Full HD Multitouch-Display

## SOFTWARE

- C.O.R.E. OS operating system
- HELITRONIC TOOL STUDIO
- Numerous software options to extend the system's performance and to increase its efficiency

« The HELITRONIC RAPTOR is our allround machine that can produce and resharpen almost all tool dimensions. Now available with the new C.O.R.E. technology and attractive automation options »

SIMON KÜMMERLE, PRODUCT MANAGER DEVELOPMENT

## YOUR BENEFIT

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.



HELITRONIC RAPTOR with the option Robot loader (left)

# C.O.R.E. – CUSTOMER ORIENTED REVOLUTION

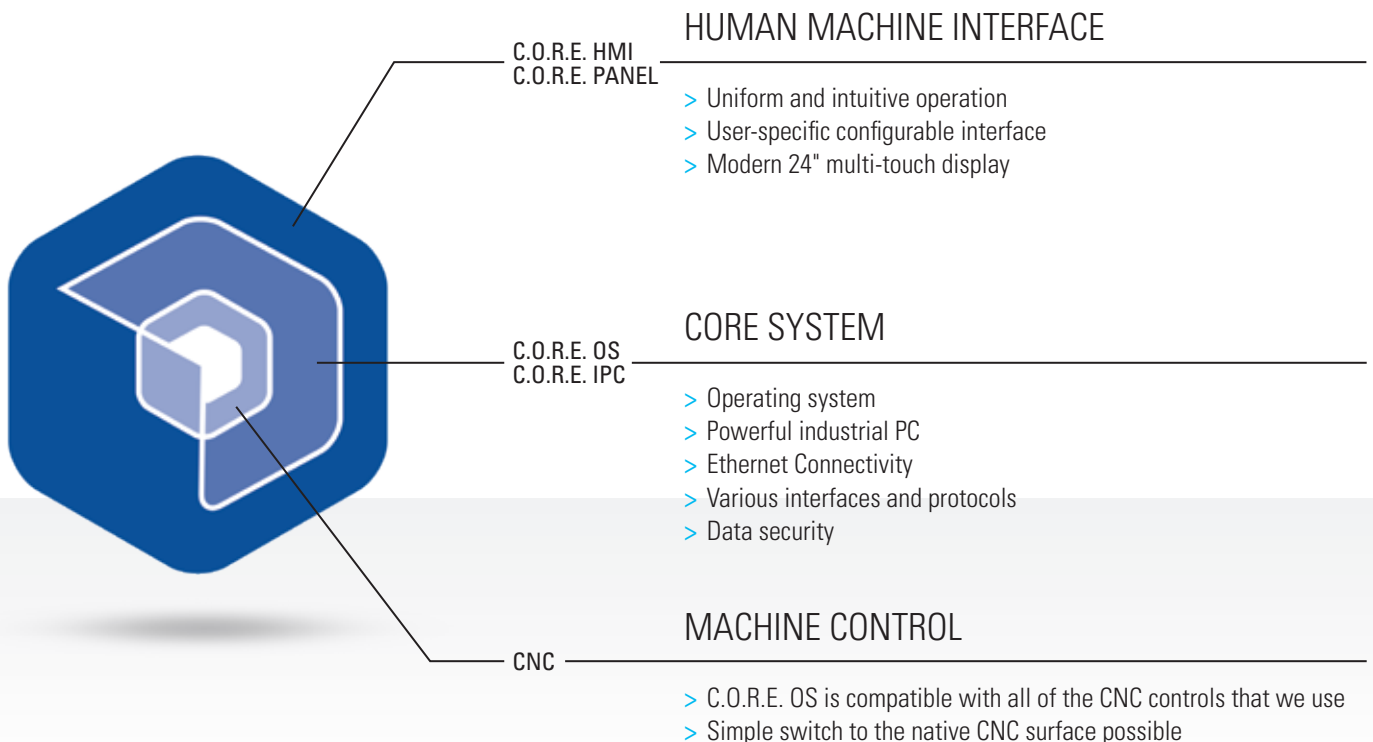
## C.O.R.E. helps us make your production fit for the digital future.

It's based on a new operating system, C.O.R.E. OS, that equips the machine with intelligence. Thanks to the uniform C.O.R.E. software architecture, exchanging data between UNITED GRINDING machines is easy. The integrated umati API can be used to communicate with third-party systems as well. It also offers access to UNITED GRINDING Digital Solutions™ products directly on the machine. C.O.R.E. not only establishes the technical foundation for this and other IoT and data applications, it also forms the basis of revolutionary yet uniform operation.

### What does this mean for you?

- The user-friendly, intuitive, and uniform operation makes work easier for machine setters, machine operators, and maintenance staff
- Standardized data collection and intelligent processing of data creates transparency and supports process optimization
- The uncomplicated and consistent use of modern digital software solutions is guaranteed – directly on the machine
- The technical platform for the use of modern IoT and data applications has been established

## C.O.R.E. ELEMENTS



# C.O.R.E. PANEL – THE FUTURE OF OPERATION

## Intuitive

Thanks to intuitive design with self-explanatory icons, navigation through the machine menu and process steps is quick and easy. Instead of buttons, the user is presented with a modern and clearly arranged multi-touch display.

## User-friendly

Each user configures their own user interface individually. This is called up automatically with the RFID chip after logging in. When the user leaves the machine, the panel switches to "Dark Factory Mode." Production progress and the machine state are also clearly visible from

a distance. And thanks to the ergonomic design, the panel can be tilted and individually adjusted easily.

## Efficient

The uniform and intuitive operating philosophy reduces training time. The configurable and role-specific interface helps prevent errors and increases the efficiency and quality of programming. Information can be exchanged quickly and in real-time via the front camera and Bluetooth headset. UNITED GRINDING Digital Solutions™ products can be used directly on the panel.

INDUSTRIAL MULTI-TOUCH DISPLAY

INTEGRATED FRONT CAMERA

SELF-EXPLANATORY ICONS

USER-CONFIGURABLE DISPLAY

STANDARDIZED FUNCTION KEYS

ERGONOMIC OVERRIDE SWITCH

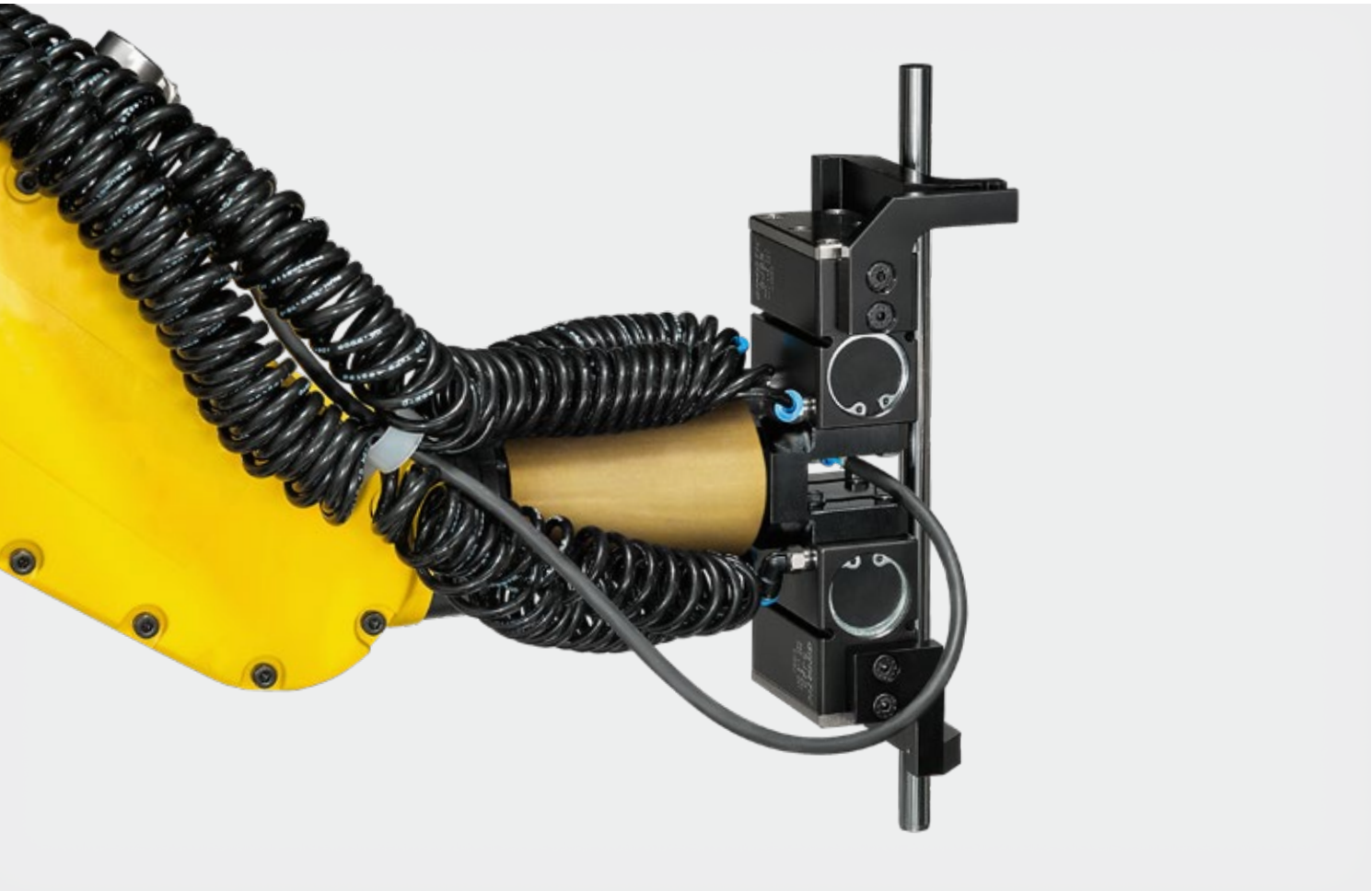


## Technical Specifications

- 24" Full HD multi-touch display
- 16-position rotary override switch
- Electronic key switch (RFID)
- Integrated front camera
- Bluetooth V4.0 for headset connection
- 2x USB 3.0 ports
- Adjustable tilt

## ROBOT LOADER AUTOMATION OPTION

---



### **Robot loader**

The robot improves accessibility to the workpieces and makes special applications possible. Automatic teaching enables short setup times. Depending on the type of workpiece or the workpiece diameter, up to 7,500 workpieces can be loaded using the robot. Maximum workpiece weight 5 kg; maximum workpiece diameter 125 mm.



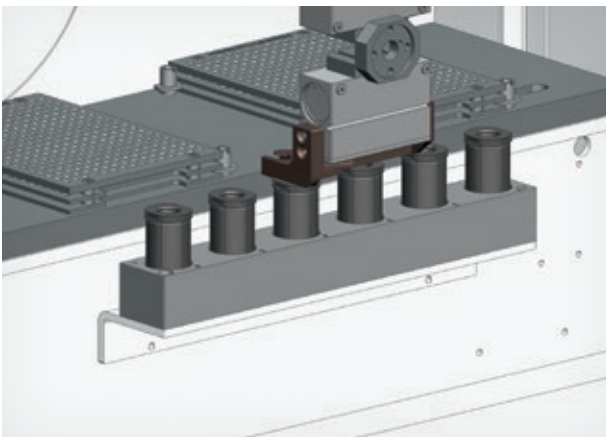


### **"Combi" equipment package for robot loaders**

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

#### **Advantages of the "Combi" equipment package**

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

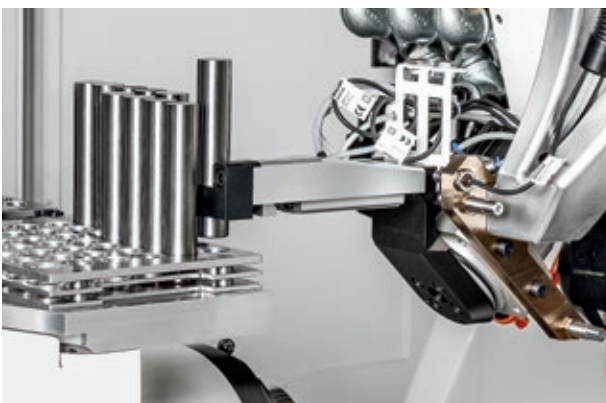


### **"Multi-Range" equipment package for robot loaders**

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.

### **"HSK" equipment package for robot loaders (not shown)**

For handling (automatically loading) up to 72 HSK 63A or HSK 63F tools.



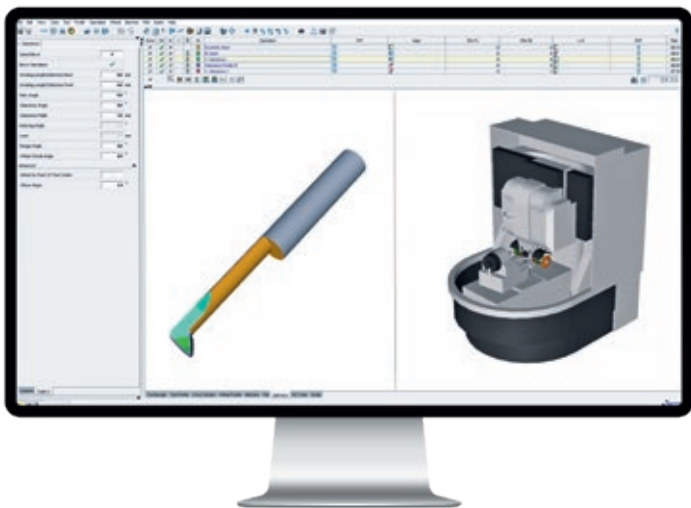
### **Top loader**

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

# APPLICATION SOFTWARE FOR TOOL MACHINING



## HELITRONIC TOOL STUDIO –

### Operating 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.

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

### Feedrate Optimizer

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

- Analysis of the centre of gravity
- Balancing the tool

### Tool Balancer

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



# OTHER OPTIONS



## 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.

In future, geometry data monitoring within the machine will become increasingly important. By using the standard touch probe, there are no additional hardware costs for this functionality.

- 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

« IMS is the ideal solution for measuring and compensating the geometry data within the machine now and in the future. »

# TECHNICAL DATA, DIMENSIONS

## GRINDING SPINDLE DRIVE

Max. grinding wheel diameter	200 mm
Grinding spindle speed (standard)	0–10.500 rpm
Spindle ends	2
Tool adapter	NCT
Peak power	11,5 kW
Spindle Diameter	80 mm

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

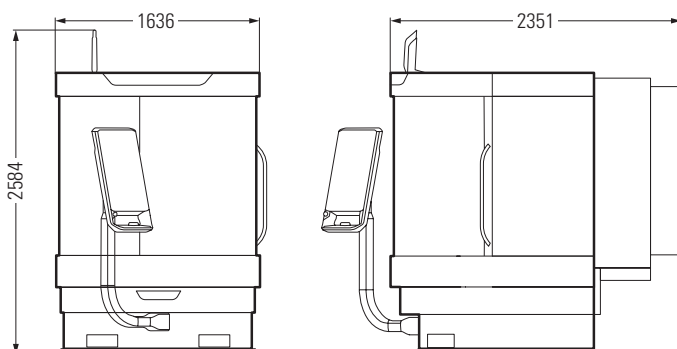
Min. tool diameter	3 mm
Max. tool diameter (vertical)	320 mm
Max. tool length for peripheral grinding <sup>2)</sup>	350 mm
Max. tool length for end face grinding <sup>2)</sup>	280 mm
Max. tool weight	50 kg

## OPTIONS

- Robot loader with various equipment packages for loading cylindrical and HSK tools
- Hydraulic unit for the steady rest and tailstock support options

### Other options:

Productivity Package (24 kW spindle and 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); Tool Vision System; etc.



## HELITRONIC RAPTOR

Dimensions in mm. Options, accessories or open doors can increase the dimensions of the machine. Subject to modifications due to technical progress and errors. No guarantee is provided for this information.

<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> Depends on the tool diameter.

# WE ARE HERE FOR YOU!

Our products are designed to meet customer demands for as long as possible, they are intended to operate efficiently, reliably, and be available at any time.

From “Start up” through to “Retrofit” – our Customer Care is there for you throughout the working life of your machine. For this reason, you can rely on competent HelpLines worldwide and Service Engineers near you:

- We will provide you with fast, straight-forward support.
- We will help to increase your productivity.
- We work professionally, reliably and transparently.
- We will provide a professional solution to your problems.



**Start up**  
Commissioning  
Extension of the guarantee



**Qualification**  
Training  
Product support



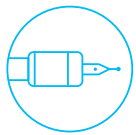
**Prevention**  
Maintenance  
Inspection



**Service**  
Customer service  
Customer advice  
Helpline



**Digital Solutions**  
Remote Service  
Service Monitor  
Production Monitor



**Material**  
Spare parts  
Replacement parts  
Accessories



**Rebuild**  
Machine overhauling  
Refurbishing of assemblies



**Retrofit**  
Conversions  
Retrofitting parts

## UNITED GRINDING DIGITAL SOLUTIONS™

We develop solutions to support you in simplifying processes, boosting your machines’ efficiency and increasing overall productivity under the “UNITED GRINDING Digital Solutions™” brand. Find out more about

UNITED GRINDING Digital Solutions™ services on our website in the Customer Care section.



## CUSTOMER CARE



Walter Maschinenbau GmbH  
Jopestr. 5 · 72072 Tübingen, Germany  
Tel. +49 7071 9393-0  
info@walter-machines.com

For worldwide contact details, please visit  
**walter-machines.com**

