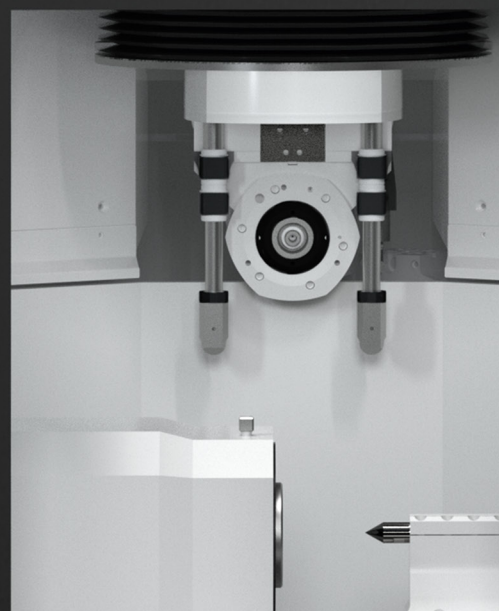
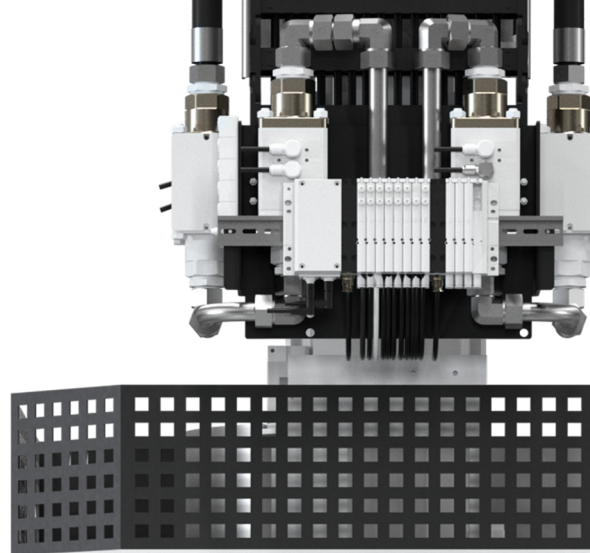


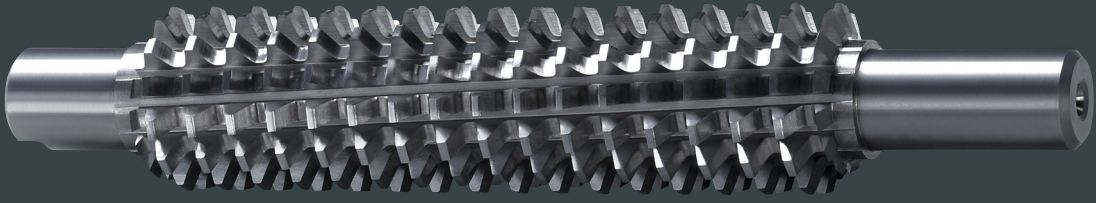
A. HAAS

Multigrind® CB

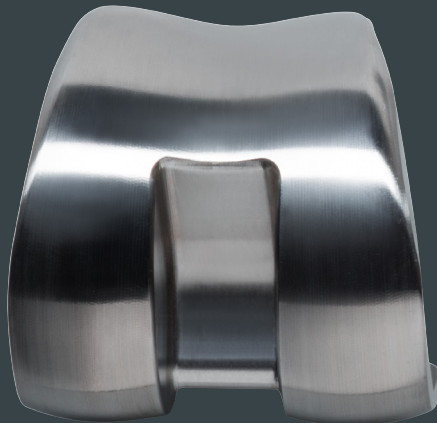


What's your vision for grinding?

An artificial knee joint today, a huge hob cutter tomorrow - times keep changing and so do demands. What remains is the challenge of offering your customers the right solution for every grinding task - quickly and efficiently.



↓ Production and process engineering



↓ Medical technology

The Multigrind® CB. The spaceship.

01

Multicube design with spacious
guide and drive components outside
the working area

02

Triple safety glass pane and
cladding with 4mm wall thickness

03

Compact cabin with integrated
and easily accessible control
and supply cabinet





04

State-of-the-art control technology thanks to Sinumerik 840D sl combined with Sinumerik Safety Integrated

05

More comfort thanks to movable operating element and height-adjustable keyboard

The Multigrind® CB is the first machine in multicube design. For medium and large workpieces, complex processes and series production.

With a significant increase in precision, flexibility and productivity, the Multigrind® CB has established itself as an all-rounder in the tooling and the medical technology or aerospace industry. Because behind perfect geometry is a high-end product with numerous special applications, adapted to your individual requirements.

Grinding spindles

Interface HSK 50E

Power 100 %	11.5 kW
Standard rotation speed	8,000 rpm

Interface HSK 50E

Power 100 %	11 kW
Standard rotation speed	18,000 rpm

Interface HSK 50E

Power 100 %	21 kW
Standard rotation speed	30,000 rpm

Interface HSK 80E

Power 100 %	28.8 kW
Rotation speed	12,000 rpm

Interface HSK 80E

Power 100 %	48 kW
Rotation speed	9,000 rpm

High frequency spindle available upon request

Single table axis work range

X-axis	700 mm
Optional	1,200 mm
Y-axis	410 mm
Z-axis	500 mm

C-axis rotation range 320°

Option: X3 auxiliary axis horizontal range 600 mm

Machine table

Clamping surface	1,200 × 500 mm
Optional	1,400 × 500 mm
T-slots: Quantity	9
Distance	50 mm
Width	12H7 mm

Double table axis work range

X1-axis [shared travel range]

Horizontal range	930 mm - X1
Horizontal range between the tables X1	0 - 355 mm

X5-axis [separate travel ranges, overlapping]

Horizontal range table left	700 mm
Horizontal range table right	1,200 mm

Measuring system

Linear axis resolution	0.0001 mm
Linear axis rapid feed	30,000 mm/min
Rotary axis resolution	0.001°
C-axis rotation speed	400 rpm

Rotary axis [A-axis]

Design 108

Standard center height	175 mm
Interface	SK 50 or HSK 80
Rotation speed	1,000 rpm
Optional	2,600 rpm

Design 140

Standard center height	175 mm
Interface	HSK 80 oder HSK 100
Rotation speed	600 rpm
Optional	1,200 rpm

Tool magazine options

Single-wheel tool changer [without coolant nozzles]

Tools: Quantity/∅	7/300 mm to 16/100 mm
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Double-wheel tool changer [without coolant nozzles]

Tools: Quantity/∅	12/300 mm to 22/100 mm
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Tool magazine HSK 80E / HSK 50E

Tools: Quantity/∅	54/300 mm to 63/250 mm
Coolant nozzles: Quantity	14 Spaces

Workpiece dimensions depending on the table version

∅ 340 - 500 mm	Length 700 - 1,000 mm
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Electrical supply

400V/50Hz fused with 80 A

Control

Siemens continuous path control system
Sinumerik 840D sl

Pneumatics

Operating pressure	6 - 10 bar
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Weight

Total weight: depending on equipment from 9,500 kg

Space required

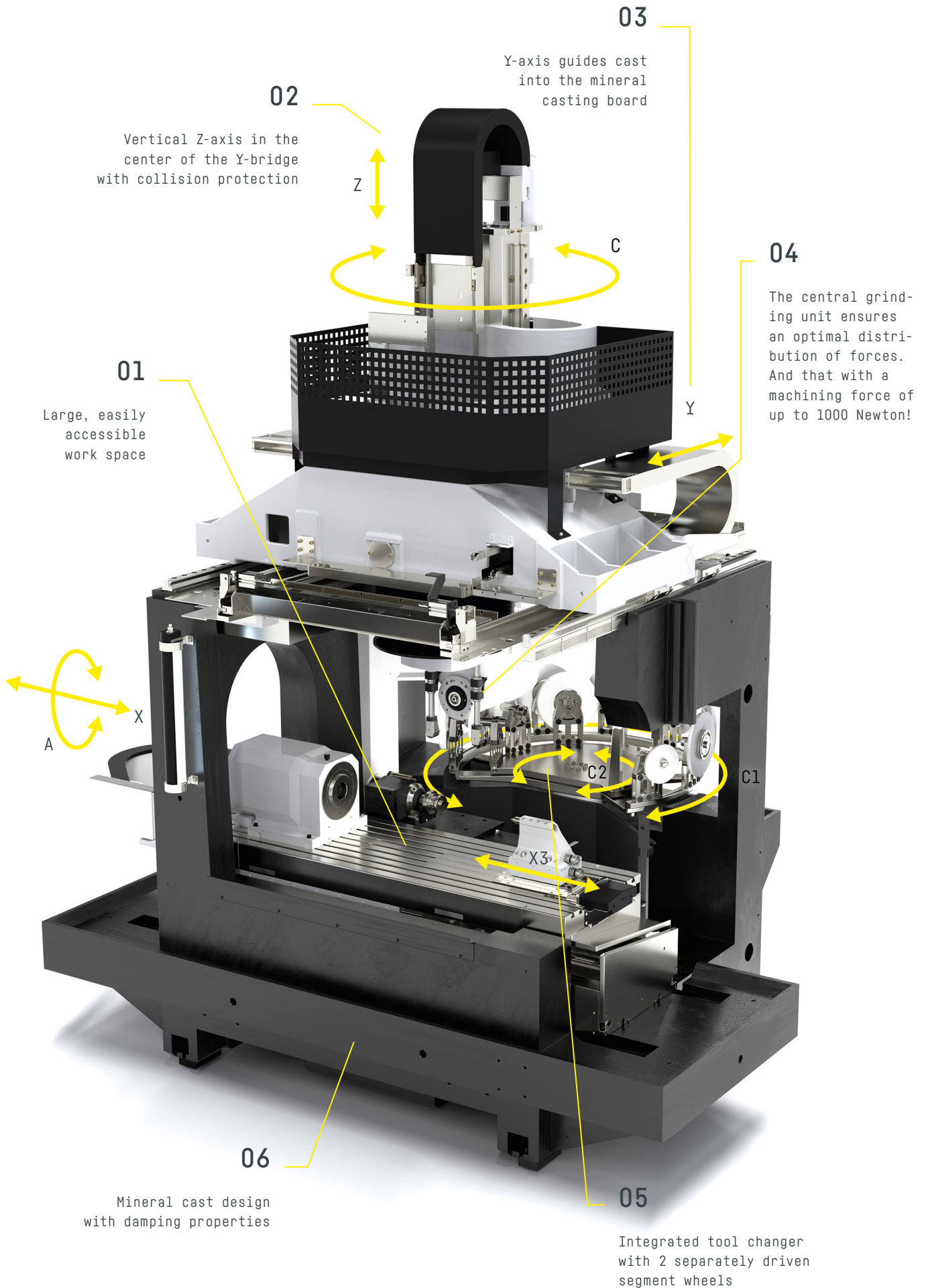
Length × width	3,000 × 2,650 mm
Height during operation	3,550 mm

Technical data
Multigrind® CB

Control of force and space: Multicube design.

Our specialist: The Multicube is made from thermally stable mineral composite with cast-in X- and Y-axes and a central grinding unit.

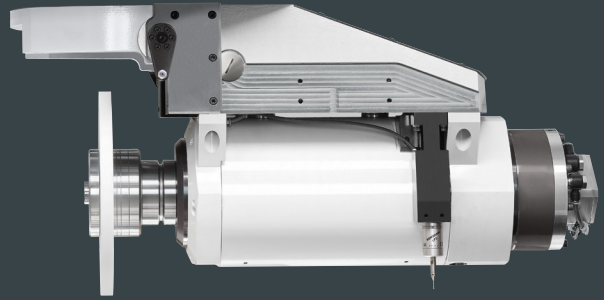
A concept that reduces unwanted expansions, force transitions and oscillations, while ensuring Haas-typical precision. With a weight of 9 tons, the cubic machine bed guarantees maximum stability during temperature peaks, without chip accumulation. Thanks to symmetrical axis arrangement combined with powerful Sinamics-controlled drives, you benefit from more dynamics and positioning accuracy - and more degrees of freedom in the grinding area: 700 millimeters [X axis], 410 millimeters [Y axis] and 500 millimeters [vertical Z axis].



Best grinding solution for every task.

From knee implants and hip rasps to 600 kg hobs, you can grind almost anything on the Multigrind® CB. And in combination with our Multigrind® Horizon grinding software, even more precisely and flexibly than before.

Depending on your requirements, you can use a wide variety of clamping devices and holders and different grinding wheels - regardless of grain size and material.



Grinding spindles made in Trossingen

The most important machine components we manufacture ourselves. Like our compact, powerful and directly driven grinding spindles.

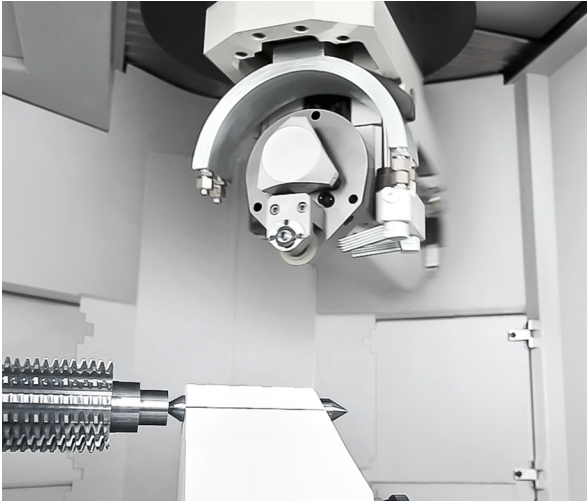
For our Multigrind® CB, we offer these from 11 to 28,8 to 48 kW in combination with our automatic tool changer. The bearing arrangement in the grinding spindles enables powerful operations and high material removal rates for the use of grinding wheels with a diameter of up to 300mm - for precision in the μ -range.

One of our five different grinding spindles can be selected to suit any requirement. This plays a particularly important role when it comes to changing between internal and external processing.

24/7 is more than a combination of numbers to us. Thanks to oil mist lubrication or lifetime lubrication, our spindles are ideally equipped for continuous operation in the toughest industrial environments.

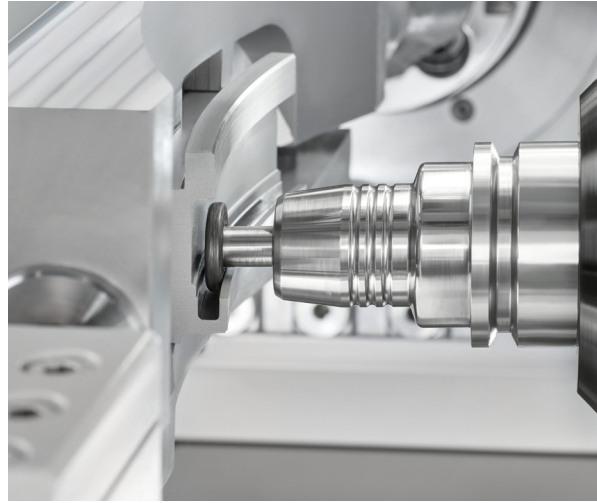
Our spindle drives in comparison:

Power	Interface	Speed
11.5 kW	HSK50E	8.000 rpm
11 kW	HSK50E	18.000 rpm
21 kW	HSK50E	30.000 rpm
28.8 kW	HSK80E	12.000 rpm
48 kW	HSK80E	9.000 rpm



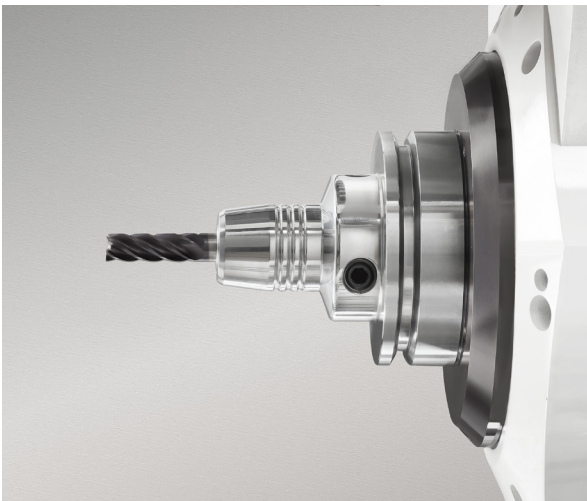
Relief grinding

Our relief grinding unit also efficiently produces small hobs. After machining with large grinding wheels, hard-to-reach areas are finished with small wheels using the relief grinding unit. Our Multigrind® Horizon grinding software treats this as a separate grinding spindle, including collision protection.



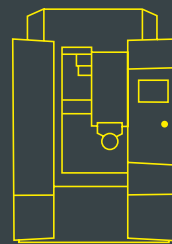
Clamping technology

Matching grinding points are the solution for complex geometries and hard-to-reach areas. On our Multigrind® CB grinding machine, you can economically grind workpieces with concave and convex curved surfaces in one single clamping. The special grinding points are clamped onto the spindle of the machine. A safe solution from Adalbert Haas, which is used, for example, for sealing elements for aircraft turbines.



Grinding and milling

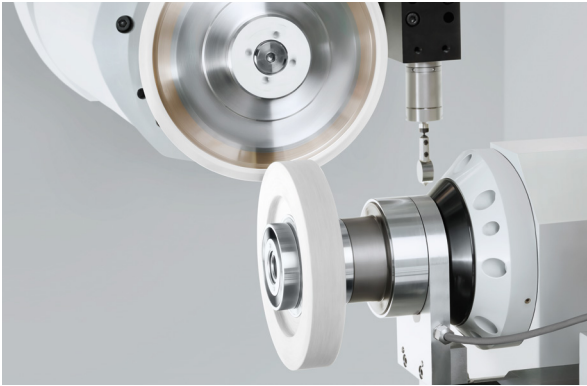
Grinding and milling on one machine, in one clamping - no problem for the Multigrind® CB. Milling operations are used, for example, for concave corner radii or contour transitions of free surfaces. Thanks to our Multigrind® Horizon software, the milling cycles can be easily controlled and programmed.



Practically
organized!

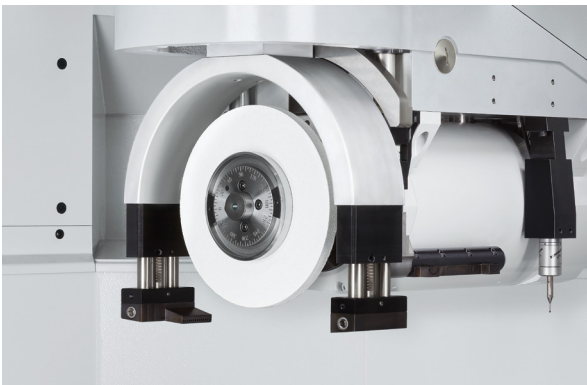
In the supply cabinet of the Multigrind® CB, you have everything in view and under control. All displays are ergonomically arranged and all refill containers are within easy reach.

Best of Multigrind®



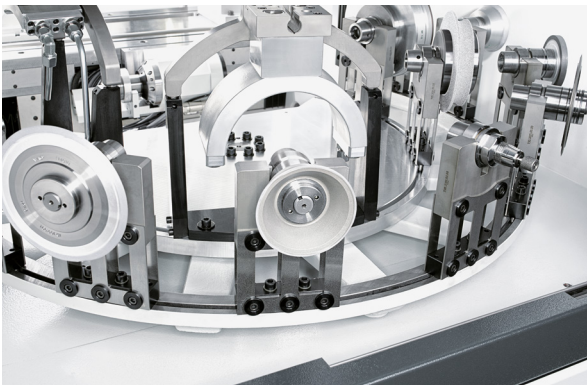
Dressing technology

With up to three dressing units, the Multigrind® CB offers every possibility to adapt to a wide variety of grinding wheels and requirements. NC-controlled contour dressing and the use of profile dressing rolls are just as possible as crushing grinding wheels.



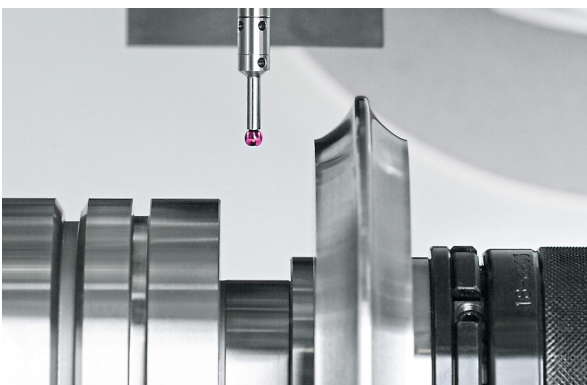
Flexible coolant solution

Thanks to the height-adjustable coolant unit, which automatically adapts to the wheel diameter, coolant nozzles are in the right position even after the wheel has been changed. Replaceable grinding wheel guards are available for your Multigrind® CB.



Tool changer

Integrated and patented by us: the double-wheel tool changer for unique series machining of different workpieces. It can handle up to 27 wheels with a diameter of 100mm. If fewer disks are used, one of the two segment wheels becomes the workpiece storage.



Probing in the machine

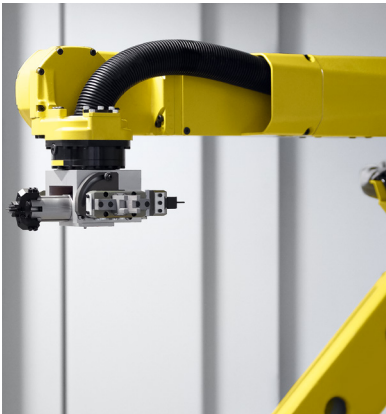
The Multigrind® CB is equipped in series with an integrated probing unit mounted on the spindle. Thanks to the optional wireless measuring probe from the tool changer, everything is accurate. Workpieces are calibrated, aligned and compensated with it. Your assurance that even highly complex processes run smoothly. Without any external technology, without any effort.



Clamping devices according to your needs

As the direct interface between the blank and your grinding machine, the clamping device is crucial for a precise and repeatable result. This is because the optimum clamping device guarantees reliable clamping forces, exact form or force closure and is responsible for the transfer of many requirements in grinding operations. Particularly in the automated production of increasingly smaller batch sizes and in large-scale production, more flexibility and efficiency are required. In short: special tasks are commonplace. And for these, Adelbert Haas develops special clamping devices, tailored to customer-specific production of special workpieces on your Multigrind® grinding machine.

Grinding, fully automated.



A wide range of high-quality workpieces at competitive unit prices - standard with us. Because in addition to the best grinding machines, we also offer you the best, individually developed grinding process.

With our Multigrind® Horizon grinding software, we design grinding programs and link them to an automation concept that exactly matches your requirements.

With the help of our grinding software, a 6-axis robot in the magazine of the Multigrind® CB takes over the loading and unloading of the machine - fully automatically and reliably. At the same time, it carries out preparatory work. As a result, you gain productivity in series production while maintaining consistent quality.



Know what else is happening.

On our grinding blog, you will find exciting articles about the latest developments in the company and in our products:
www.multigrind.com/en/blog

Multigrind® Horizon. Makes your machine a specialist.

Get the most out of your Multigrind® CB grinding machine. With grinding software that thinks instead of dictates. As an enabler, Horizon helps you program, grind and duplicate your workpiece faster and more flexibly than you can imagine.

Your benefits at a glance:

01 More flexibility through individual combination of workpiece elements and parameterization

02 Quick and easy operation thanks to clear user interface and clever application standards

03 Always one step ahead with quarterly software releases

04 Everything in view and under control thanks to digital twin

05 Sustainable quality improvement in series production through Closed-Loop processes

06 A new kind of visualization with Multigrind® Styx



Multigrind® Styx. Shows your data instead of simulating it.

The new simulation software from Adelbert Haas is not simulation at all:

Multigrind® Styx shows pixels directly, with maximum accuracy.

This turns simulation into visualization - and grinding processes can be completely mapped in advance. Without any surfaces, without any limits. Without wasting time, material and nerves. And thanks to the cloud-based solution, you need less computing power for more performance.



More program.

Everything about our software solutions can be found on the website:

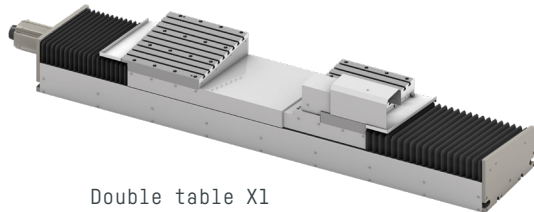
www.multigrind.com/en/multigrind

Tables. As individual as your requirements.

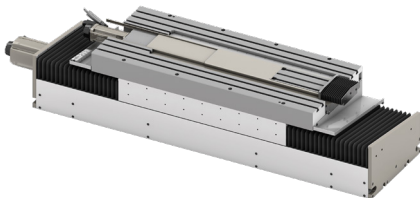
With the right table, you can grind both the smallest precision tools and enormous hobs on the Multigrind® CB. The stable guide, generous ball screws and direct path measuring systems in the highest resolution guaranteed maximum precision and quality.



T-slotted plate



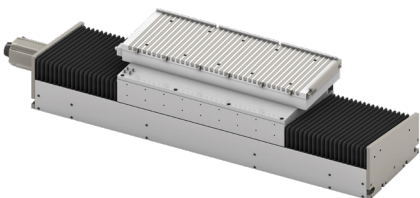
Double table X1



T-slotted plate X3



Double table X5



Magnetic clamping plate



Linear drive

Our tool magazine - your independence.



The facts:

- 2m long × 1.5m wide × 3.2m high
- space for 54 wheels with a diameter of 300mm
- 14 coolant guards
- mechanically independent of the machine
- integrated in the Multigrind® Horizon software
- tool change in 10 seconds

In most cases, the integrated tool changers of the CB are completely sufficient. However, manufacturers of cutting tools or products for medical technology are increasingly looking for ways to save money. For this purpose, we have developed a large tool magazine that has space for 54 grinding wheels.

In order to reduce setup and unit costs, a workpiece is machined in a single setup. All tools for this are ready for use in the magazine. The reclamping process is accurate. In this way, you also increase your product quality.

Intelligent interaction

The tool changer connects the magazine and the grinding machine. The linear handling system transports up to 54 grinding wheels and the coolant guards. These are inserted one after the other and picked up with the help of the handling system. In the process, the tool arm takes on the role of the normal tool changer.



Always appropriate.

Together we develop customized tables
for each of your grinding tasks:

www.multigrind.com/en/customer-care

