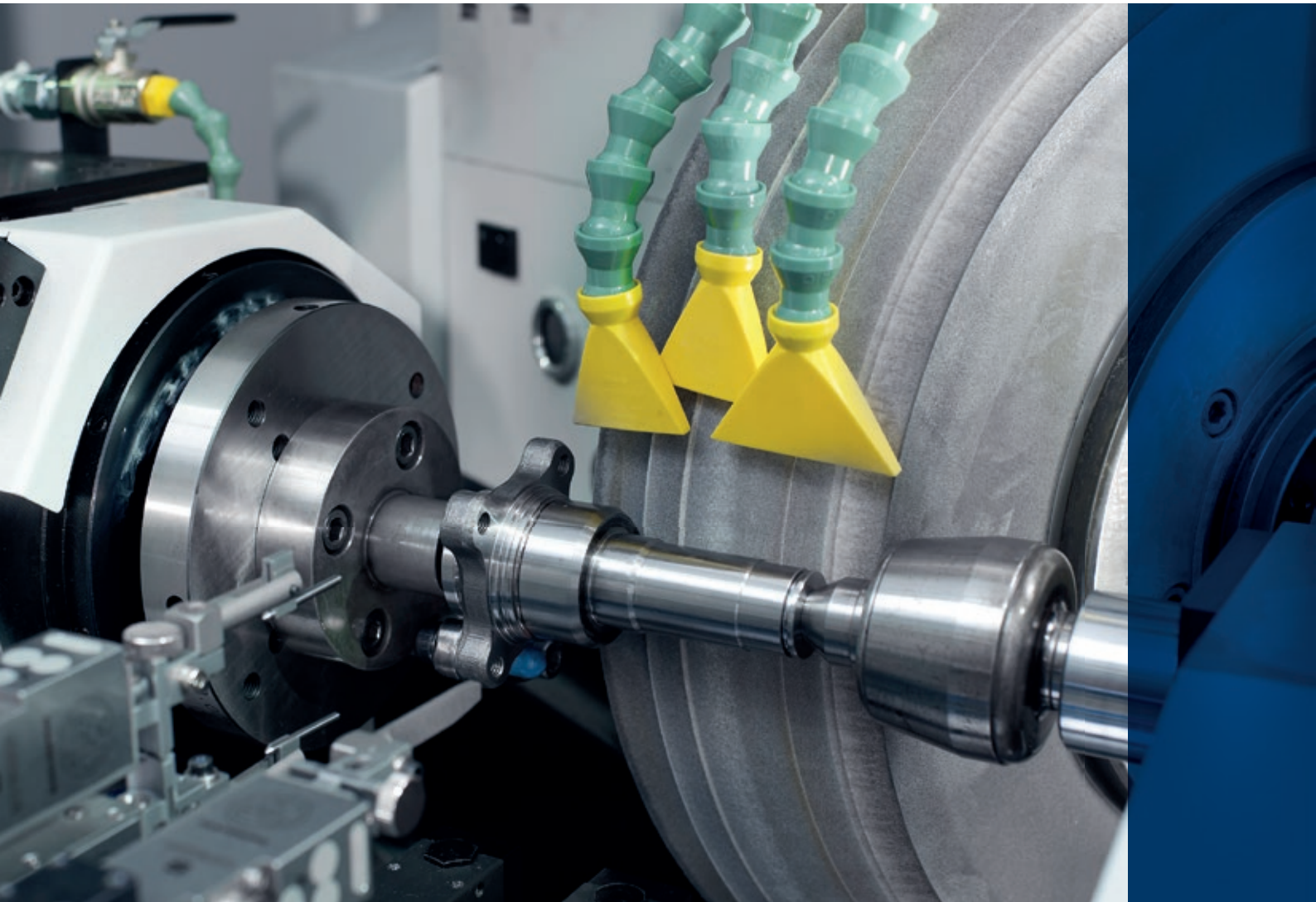
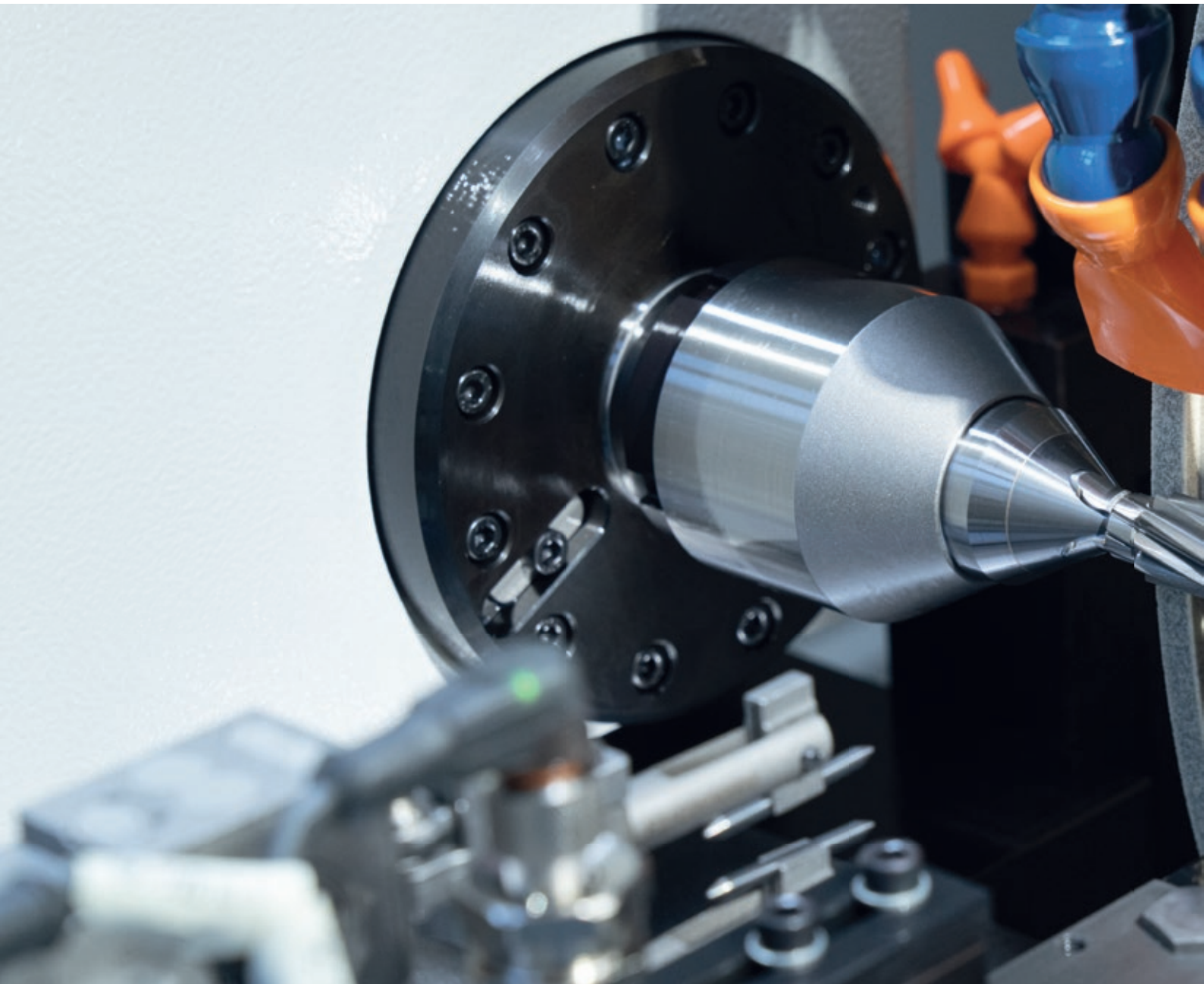


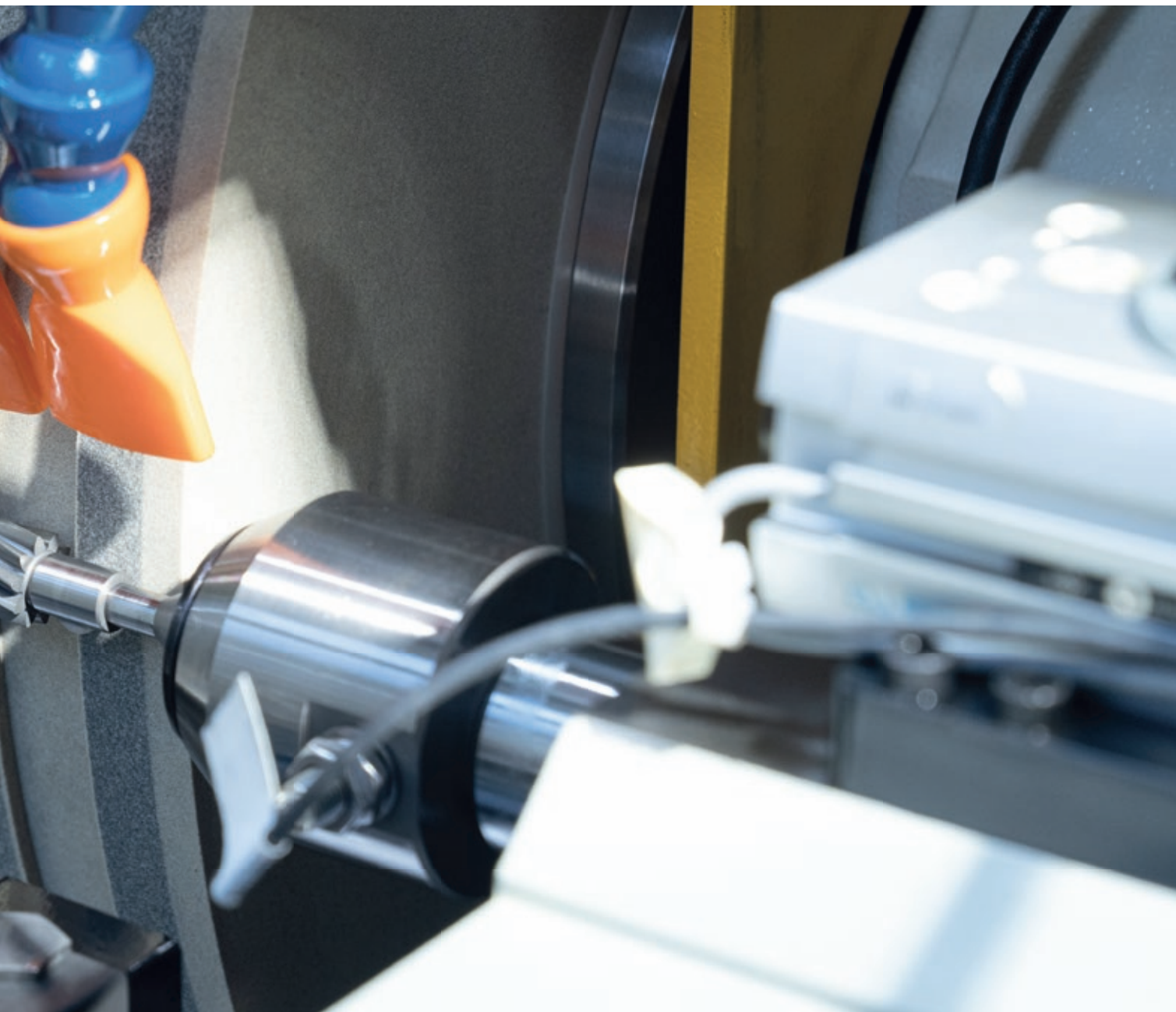
# EMAG Weiss Machine Portfolio



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# Philosophy

## Individual, powerful, precise - tailored to the requirements of our customers

We develop grinding machines that are individually and precisely tailored to the requirements of our customers. That is the core of our philosophy. We want our customers to get real added value from our machines and sanding systems that make them more competitive. To achieve this, we rely on a powerful team of highly qualified employees and have a strong partner in the EMAG Group, which supports us worldwide in all areas, whether in sales, service or project management. This cooperation enables us to process orders quickly and in a customer-oriented manner and to provide a high-performance service.

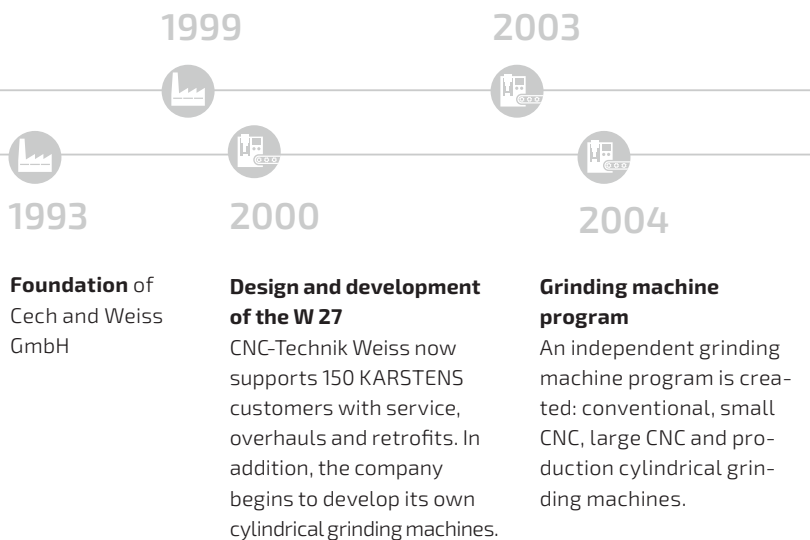


## FULL SUCCESS STORY

Special machine construction, retrofitting, service, training courses, repair services and grinding technology advisory services: CNC-Technik Weiss GmbH is an innovative full-service partner in the field of cylindrical grinding.

**Change of name to CNC-Technik Weiss GmbH**  
CNC-Technik Weiss becomes the service center for KARSTENS cylindrical grinding machines.

**The first CNC machines**  
The first fully automated CNC cylindrical grinding machines are developed and built for customers.





**EMAG Weiss is an integral part of the EMAG Group.** As part of this globally active company, we develop and produce high-quality CNC machines and systems that are used in numerous industries.

**Our products are characterized by the highest precision, reliability and innovative strength.** In order to maintain and constantly improve this high standard, we invest in the continuous further development of our products.

**Our EMAG Service offers fast and reliable support** for all questions and problems relating to our products - from commissioning, servicing and repair to training courses and software updates.

#### At the touch of a button 100 % manual and 100 % CNC.

The world innovation WUG 21 is presented - a revolutionary universal cylindrical grinding machine.

#### Further development of the WUG 21

Further development of the proven WUG 21, 4-fold turret for internal grinding, new C-axis software for out-of-round grinding.

#### Design and development of the W 11-EVO

Design and development of the new W 11-EVO hydraulic-free, axis drives with servo motor and ball screw drive, technology input of grinding parameters via touch screen, automatic parallel dressing with compensation, automatic free travel.

#### EMAG Weiss presents the WPG 7, a compact cylindrical grinding machine.

2007



2008

#### The new building

The new building in Neckartailfingen with a production area of 3,800 m<sup>2</sup> is occupied. Design and development of a new torque B-axis for fully automatic swiveling of the grinding head to less than 2" swiveling accuracy.

2012



2016

#### Expansion

Expansion of the machine program with the CNC-supported cylindrical grinding machine W 11 CNC.

2018



2019

#### EMAG Group

CNC-Technik Weiss becomes part of the EMAG Group. This opens up completely new opportunities in terms of design and development, construction, sales and service for Weiss products.

2021



2023

#### Expansion of production capacity by 30 %

through the construction of a new production hall in Neckartailfingen

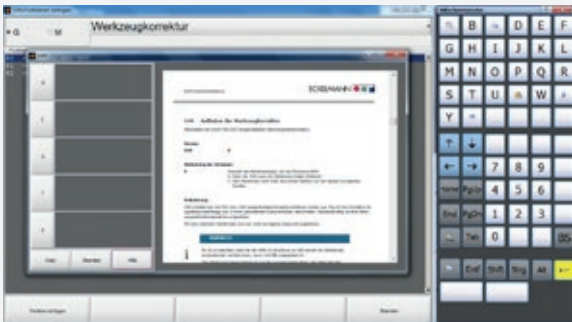
# CNC Control Touch HMI

## EASY! Touch HMI



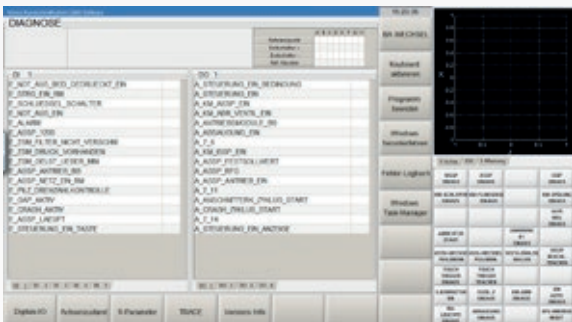
- + Windows-based user interface
- + USB and Ethernet interface
- + Simple input of the technology values in the respective cycle
- + Graphical support for technology parameters

## INTELLIGENT! G- and M-code support



- + Display of functions/cycles in plain text
- + Extensive help including documentation available on the machine control unit

## TRANSPARENT! Diagnosis

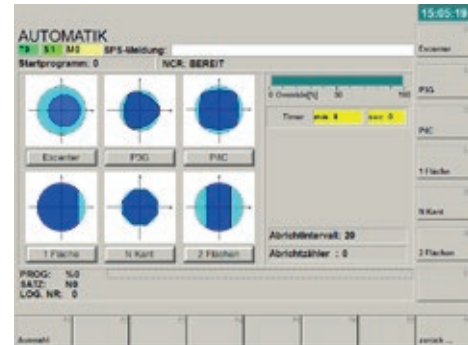


- + Display of PLC states in plain text
- + Drive diagnostics on the HMI
- + Trace recording and parameter field diagnostics
- + Optional BDE/MDE interface



**Robust and powerful**

## Software options



### Out-of-round editor:

- + Simple parameterization with shape catalogue
- + Grinding with constant path speed
- + Free form possible via XC/XY value table
- + 2D and 3D machining

### Further options:

Loader/handling operation integrated in the control unit

# W 11 CNC – CNC Control

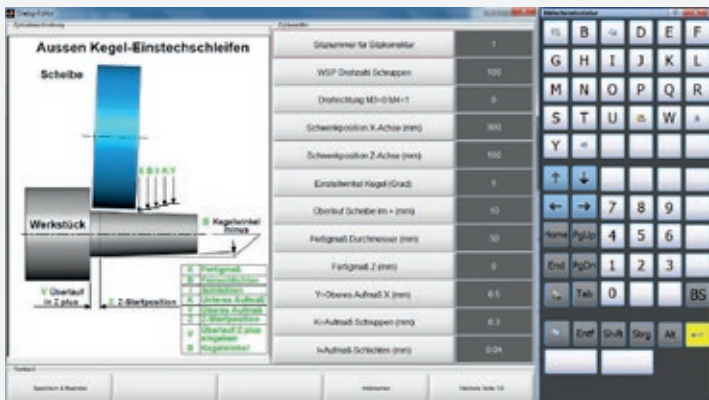
## Modern, fast, loop-oriented control.

Windows interface with USB and network interface for easy program management. Programming via dialog interface or optionally in DIN/ISO programming. All common sanding cycles are included in the basic scope of delivery. Options: DXF converter, geometry editor, special grinding cycles ...



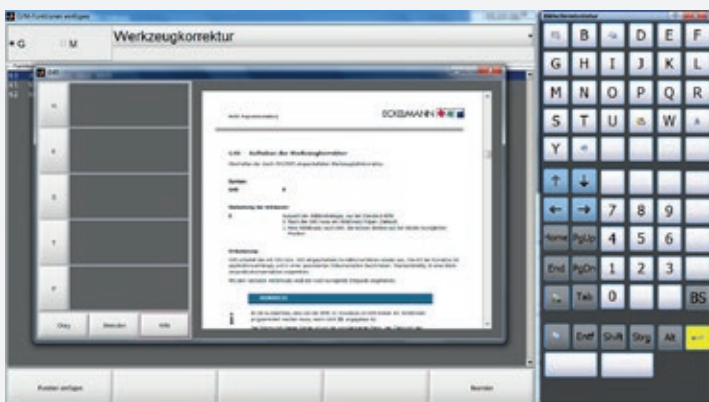
## Grinding in plunge-cutting or longitudinal grinding process

Simple and direct input of technology values or directly via teach-in



## Dialog-supported programming in "CNC mode"

Simple input of technology values in the respective cycle, graphical support for technology parameters



## Extensive G- and M-code support in "CNC mode"

Display of functions/cycles in plain text. Extensive help including documentation is available on the machine control.

# W11CNC – Perfect for single parts, prototypes and small series

## W 11 CNC - PERFORM A WIDE VARIETY OF GRINDING TASKS IN QUICK SUCCESSION

The W 11 CNC cylindrical grinding machine from EMAG Weiss - specially designed for demanding grinding tasks - **offers maximum flexibility and precision for external and internal cylindrical grinding.** With a workpiece diameter of up to 500 mm and a length of up to 1,500 mm, it is ideal for small series and prototypes. Intuitive operation and quick retooling in just five minutes guarantee maximum efficiency. **Equipped with a high-precision workhead, a flexible tailstock and a belt-driven grinding head, the W 11 CNC enables fast changeover processes and precision machining results.**



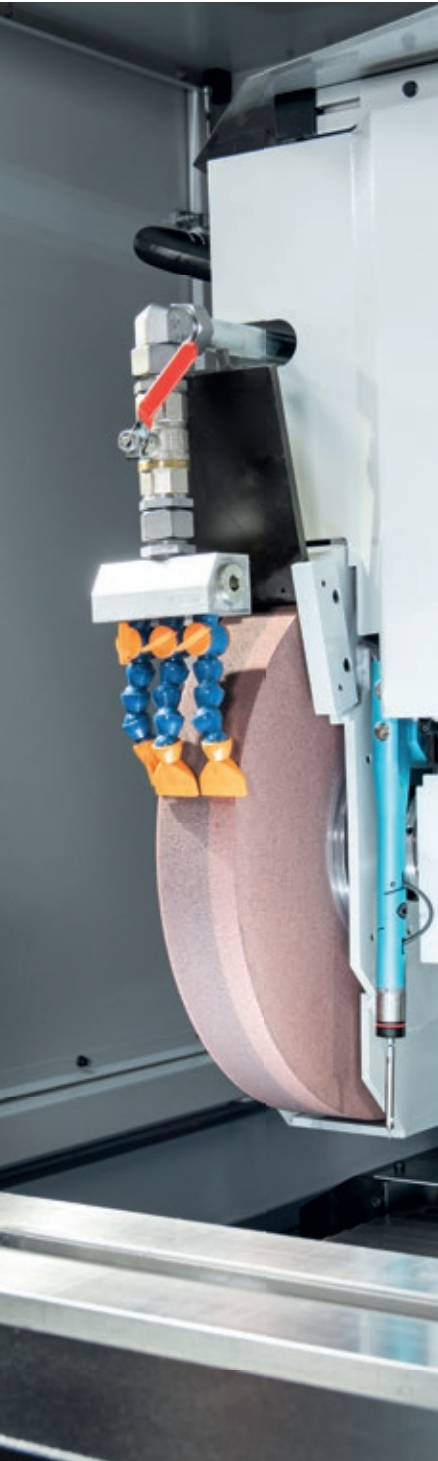
**The tailstock (MK4) can be operated manually or pneumatically via a foot switch.** The quill holder with a stroke of 45 mm enables loading between the centers up to a workpiece weight of 250 kg.



The spindle holder (with adapter MK4, MK5 or MK6) is equipped with a precision bearing, the motor speeds are infinitely adjustable from 1 to 650 rpm.



# W 11 CNC – Technical data



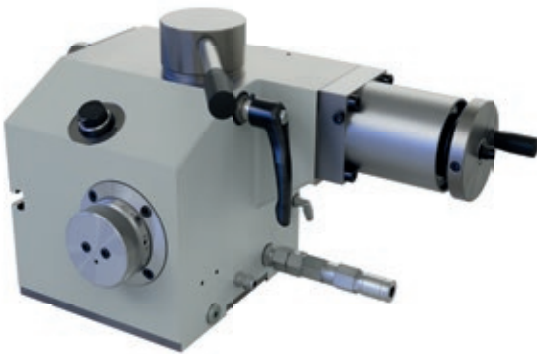
VERSION W 11 CNC		SL 650	SL 1000	SL 1500
Grinding length	mm	650	1.000	1.500
Center height	mm	200, option to 320 (technical test)		
External grinding $\emptyset$	mm	1 – 390	1 – 390	1 – 390
Max. weight flying MK 4	kg	100, option up to 150 MK 6		
Max. workpiece weight between centres	kg	250		
<b>Infeed</b>				
» X-axis travel	mm	480	480	380
» Z-axis travel	mm	1150	1250	1650
<b>Feed via digital servo motor:</b>				
» Express speed	m/min	15	15	10
» Plunge-cutting - rough-machining	m/min	0,1 – 9,9	0,1 – 9,9	0,1 – 9,9
» Smallest delivery amount	mm	0,001	0,001	0,001
<b>Grinding head</b>		Grinding wheel standard Li straight		
» Grinding wheel $\emptyset$	mm	400 / 500		
» Drive power	kW	9,0 – 11		
» Peripheral speed	m/s	20 – 50		
<b>Workpiece headstock</b>				
» Speed range	1/min	1 – 650		
» Inner cone holder	---	MK4, option MK5/MK6 or special		
» Centering- $\emptyset$	mm	63 for MK4		
<b>Tailstock</b>				
» Quill holder	---	MK 4	MK 4	MK 4
» Quill stroke	mm	45	45	45
» Cylinder fine adjustment travel	mm/ $\emptyset$	0,08	0,08	0,08

# W 11 CNC



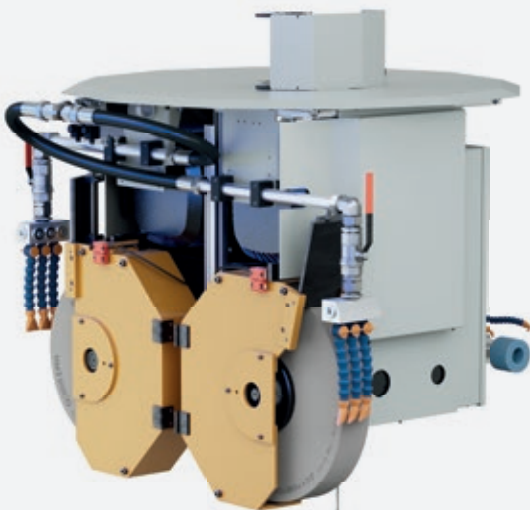
## Workpiece headstock

- + Spindle holder MK 4/MK 5/MK 6
- + Precision spindle bearing concentricity less than 0.5  $\mu\text{m}$
- + Infinitely variable motor speeds 1- 650 rpm
- + Option: vertical centre
- + Option: special clamping device, central clamping



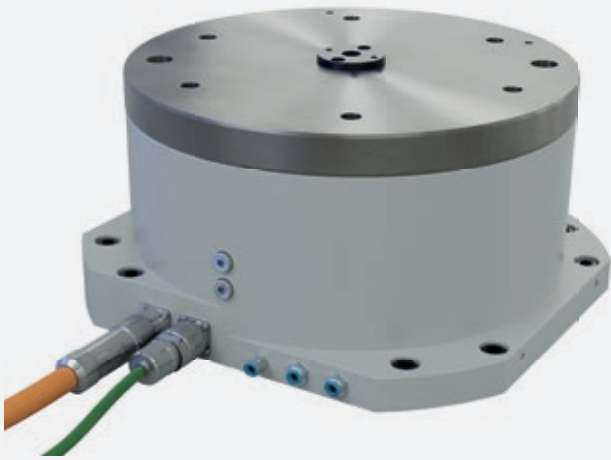
## Tailstock MK 4

- + Manual and pneumatic with foot switch
- + Quill holder MK 4
- + Weight between centres up to 250 kg
- + Quill stroke 45 mm
- + Option: manual cylinder correction



## Grinding head

- + Precision spindle bearing/ angular contact ball bearing or hydrodynamic plain bearing
- + Grinding disc dimensions:  $\varnothing$  400/500 mm, width 10 - 120 mm
- + Drive power 4.5 - 7.5 kW
- + Option: SUG
- + Option: GAP/Crash-Control



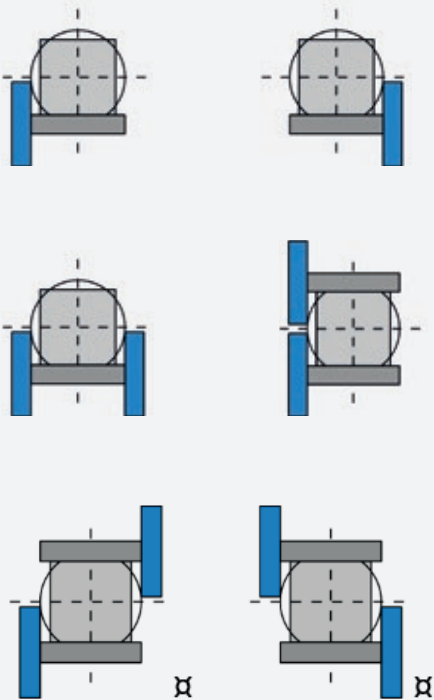
### B-axis

Directly driven torque axis for infinitely variable swivelling/positioning of the grinding head with a resolution of 0.001 degrees.

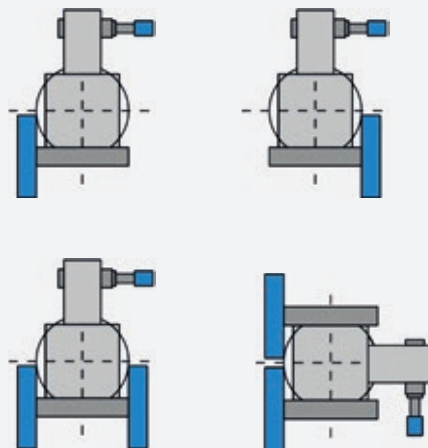
With mechanical holding brake. Transformation of the pivot point coordinates of the grinding wheel.

## GRINDING HEAD VARIANTS

### EXTERIOR



### COMBINED



# WPG 7 – Compact external cylindrical grinding machine for workpieces up to 250 millimetres in length

**Highly productive, with an extremely small footprint - the new WPG 7 CNC external cylindrical grinding machine ensures leaps in performance when machining small and medium-sized workpieces.**

This solution perfects the sanding processes: The machining of workpieces up to 250 millimetres in length becomes all-round efficient with the WPG 7 from EMAG Weiss.

This is ensured by a rigid machine concept, very dynamic axes, a powerful grinding wheel drive and an extremely small footprint. Overall, the WPG 7 only requires a space of around four square metres!

In addition, the robust machine is easily accessible and can be quickly re-tooled for changing machining requirements.

**WPG 7 from  
EMAG Weiss  
save  
space!**

## HIGHLIGHTS

### + Minimal footprint

Small 'hook machine' with a footprint of 1,800 x 2,400 mm - including electrical cabinet and peripherals

### + Maximum flexibility

Adjustable grinding wheel peripheral speed up to 50 m/s, maximum grinding wheel size 500 x 80 mm, simple cycle programming, tailstock with fine adjustment MK3

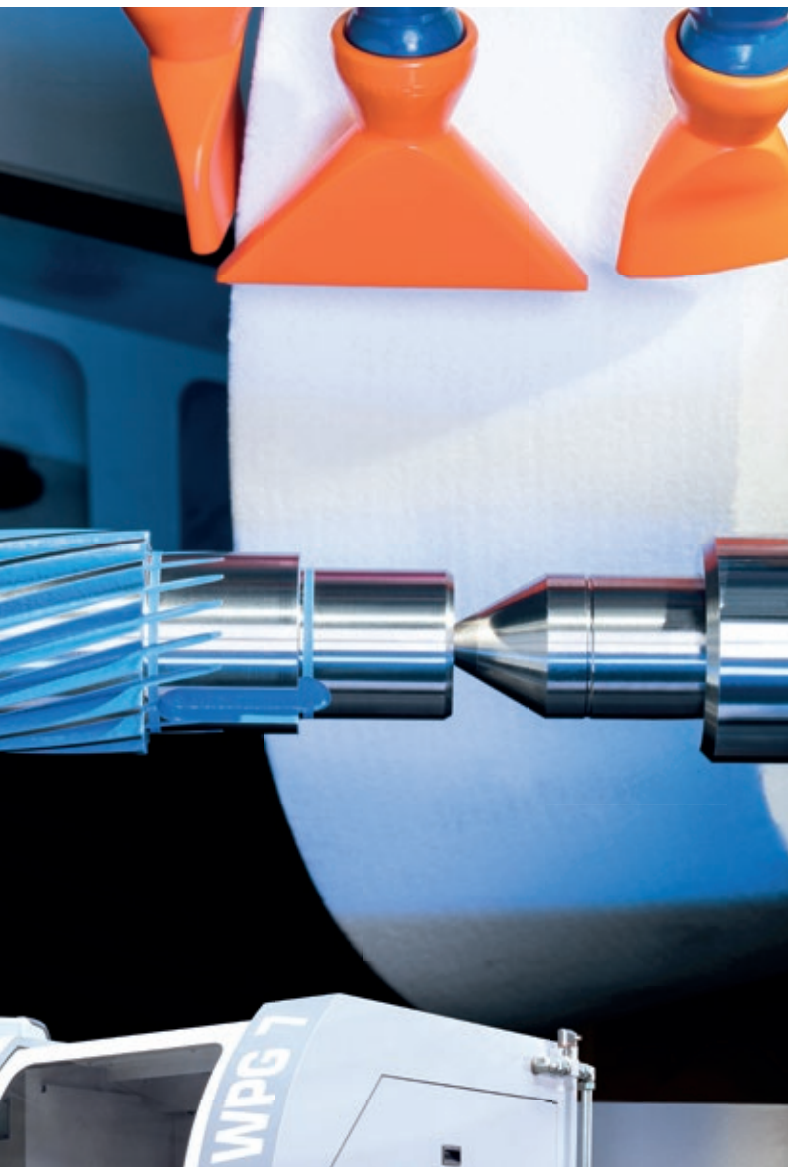
### + Variable configuration

Available as a 0° straight plunge-cut or 30° angled plunge-cut machine, work-head with stationary and travelling centre MK4

### + Optional plus points

Options include in-process measuring control (diameter), passive longitudinal positioning, an automatic balancing system as well as GAP and crash control.





## TECHNICAL DATA

Center height 100 mm

Center distance 250 mm

Workpiece weight 30 kg

### Longitudinal axis (Z)

Longitudinal travel 350 mm

Feed speed 10 m/min

Table adjustment 8°

### Transverse axis (X)

Transverse travel 190 mm

Feed speed 10 m/min

### Grinding head

Grinding wheel dia. 500 mm

Grinding wheel width max. 80 mm

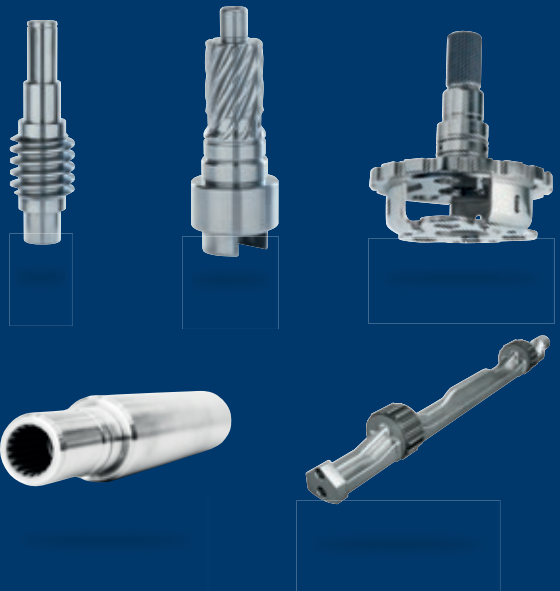
Grinding wheel bore 127 (203)

Grinding wheel circumferential speed 50 m/s

### Workpiece headstock

Mounting cone MK 4

Motor speeds 0 – 2.000 1/min



## WPG 7 Automated success

**Whether chain conveyor belt, pallet circulation or robot - many individual link-ups can be integrated with this machine. Medium quantities are produced at high speed.**

The decisive factor here is that the specialists at EMAG Weiss have developed their own linear gantry, which can be integrated into the machine's enclosure at the customer's request.

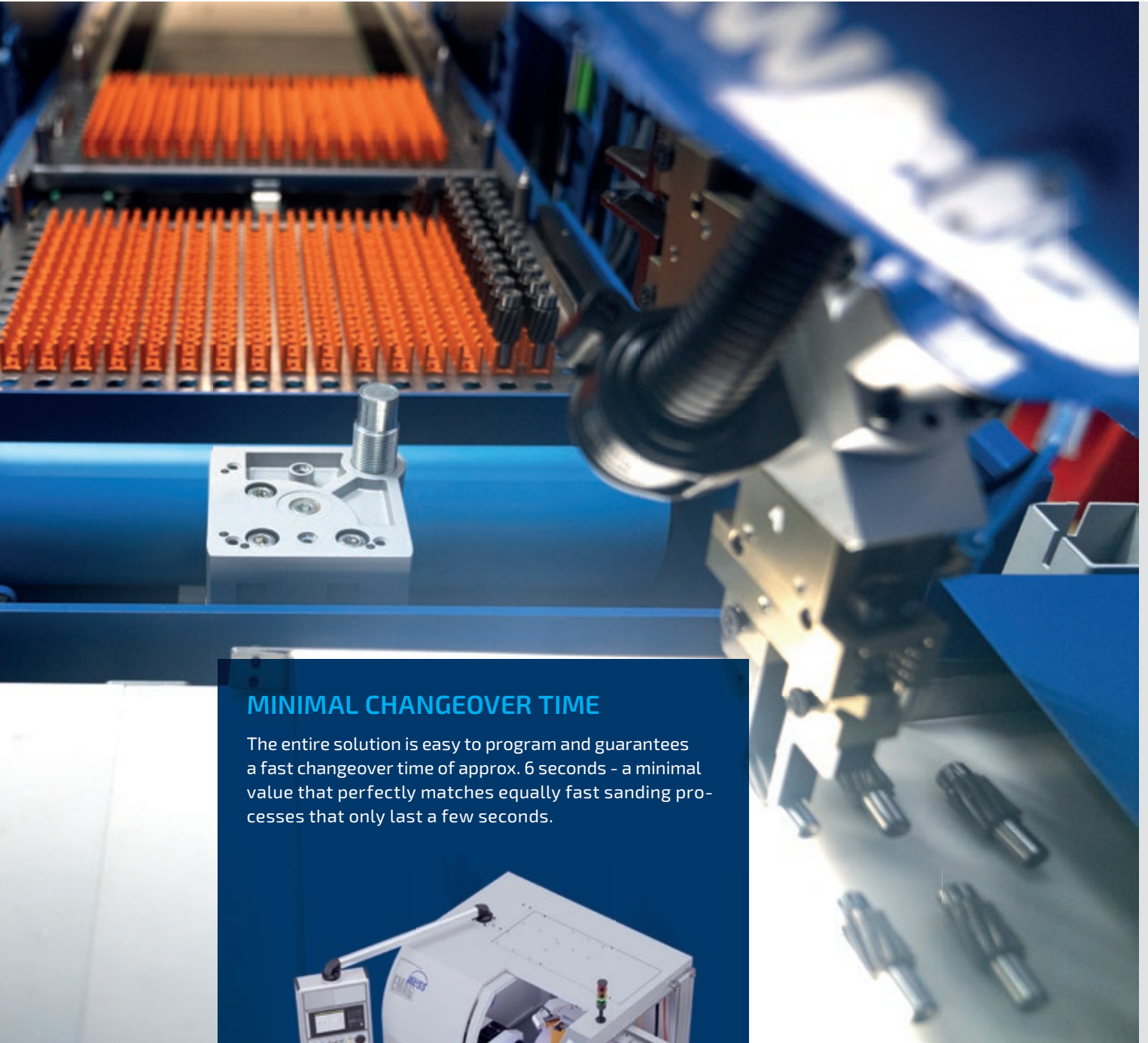
The gantry removes the raw-parts from the chain conveyor (or another solution) and then feeds them into the work area from the side at high speed. Once the process is complete, the finished parts are returned to the conveyor belt by the gantry.



**Left: The associated automation solutions also take up very little space.**

**Right: The components are precisely positioned.**





### MINIMAL CHANGEOVER TIME

The entire solution is easy to program and guarantees a fast changeover time of approx. 6 seconds - a minimal value that perfectly matches equally fast sanding processes that only last a few seconds.



The linear gantry is an in-house development from EMAG Weiss.



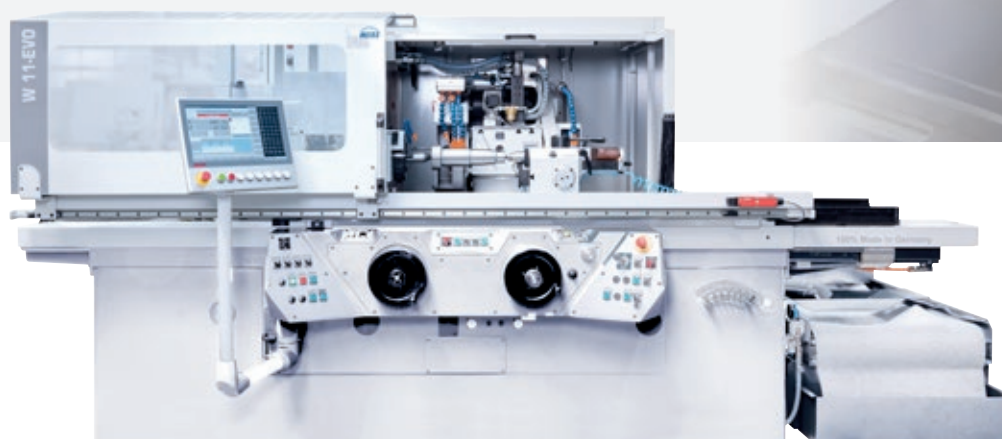
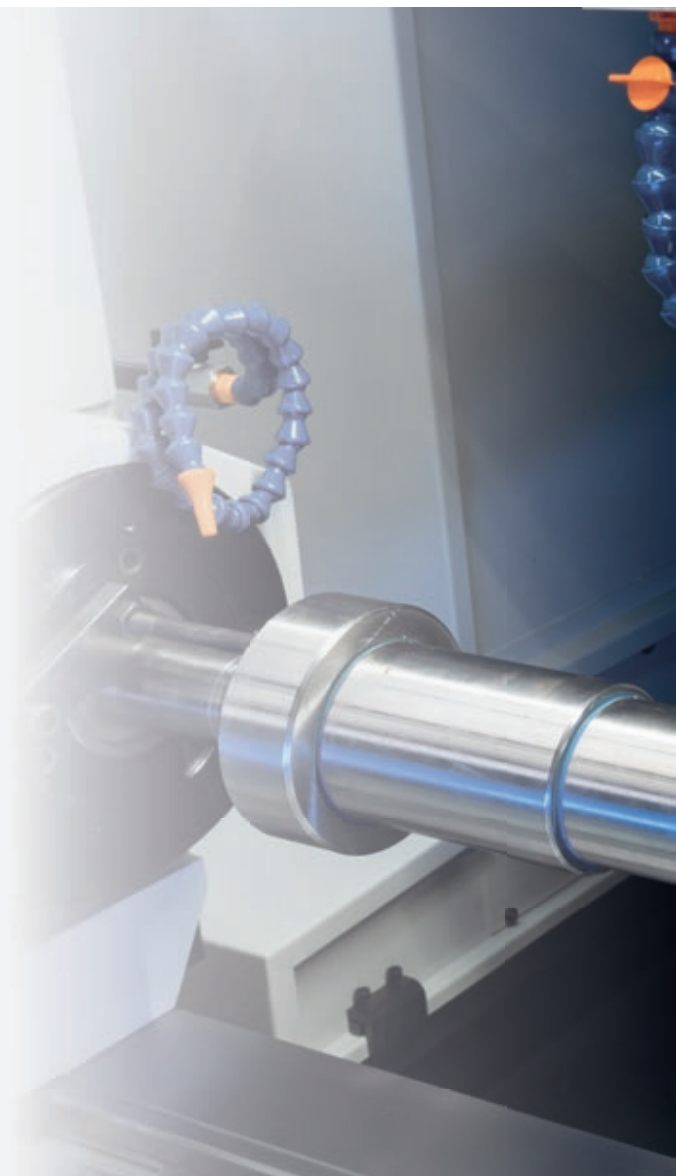
# W 11-EVO (hydraulic-free) – Conventional cylindrical grinding machines

**The W 11-EVO from EMAG Weiss specializes in manual cylindrical grinding. Developed for tool and mould making, maintenance staff and training facilities, this machine combines traditional craftsmanship with state-of-the-art technology. Its servo-electric Z and X axes allow easy programming of external and internal grinding processes, while many processes are automated to ensure the highest quality.**

Intuitive operation and the option to control processes manually contribute to increased process reliability. Thanks to high-precision angle encoders on the B-axis, the user can quickly switch between different grinding processes without having to compromise on accuracy.

The W 11-EVO is characterized by its good accessibility and the possibility of manual settings. The integration of technologies from NC grinding technology ensures top performance, including an infinitely variable spindle speed and pneumatic tailstock actuation.

It represents a new generation of manual cylindrical grinding that emphasises efficiency, precision and user-friendliness and is aimed at a wide range of industries, from prototyping to contract manufacture.



## » Example W11-EVO

Servo-electric Z-axis  
Servo-electric X-axis

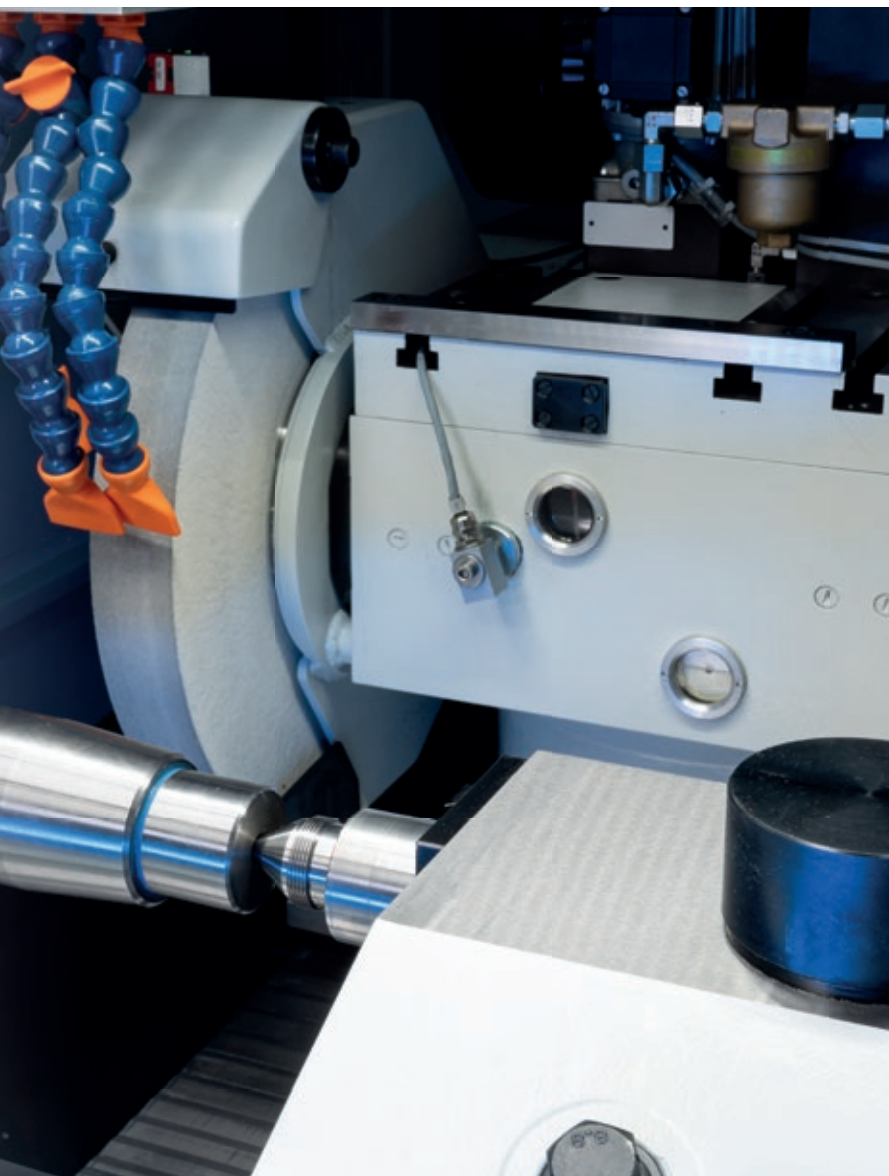
## GRINDING NEXT GENERATION WITH THE W11-EVO

We revolutionized the W 11 in 2018!

We offer you the W 11 machine in a new, contemporary design. Hydraulic-free, axis drives with servo motor and ball screw drive, technology input of grinding parameters via touchscreen, automatic parallel dressing with compensation, automatic free-move.

All this with the simple and proven operating concept of the classic W 11!



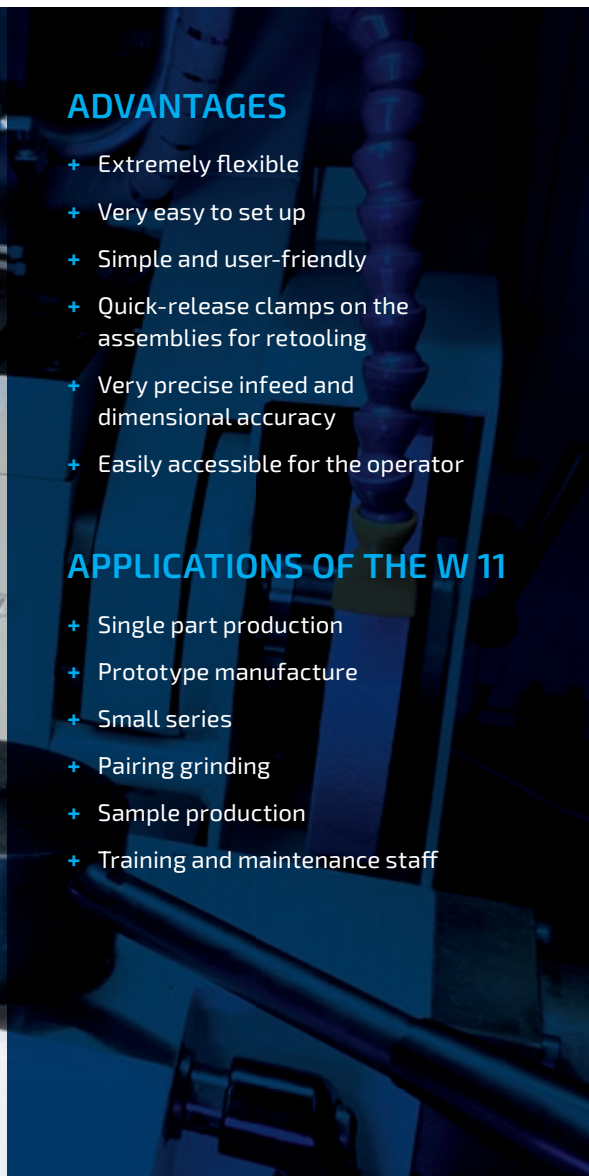


## ADVANTAGES

- + Extremely flexible
- + Very easy to set up
- + Simple and user-friendly
- + Quick-release clamps on the assemblies for retooling
- + Very precise infeed and dimensional accuracy
- + Easily accessible for the operator

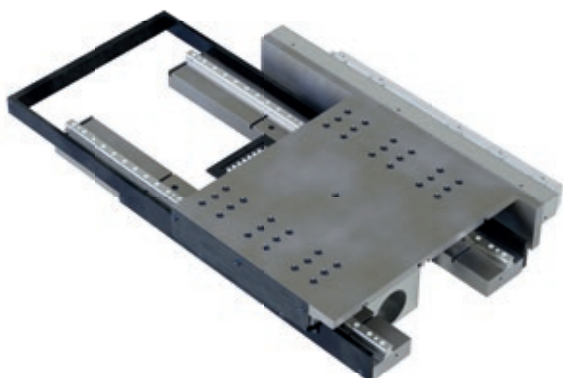
## APPLICATIONS OF THE W 11

- + Single part production
- + Prototype manufacture
- + Small series
- + Pairing grinding
- + Sample production
- + Training and maintenance staff



### X-axis

- + Modern X-axis with precision linear guides, ball screw drive and servo motor for  $\mu\text{m}$ -accurate positioning
- + The entire X-axis travel can be utilized without course adjustment



### Z-axis

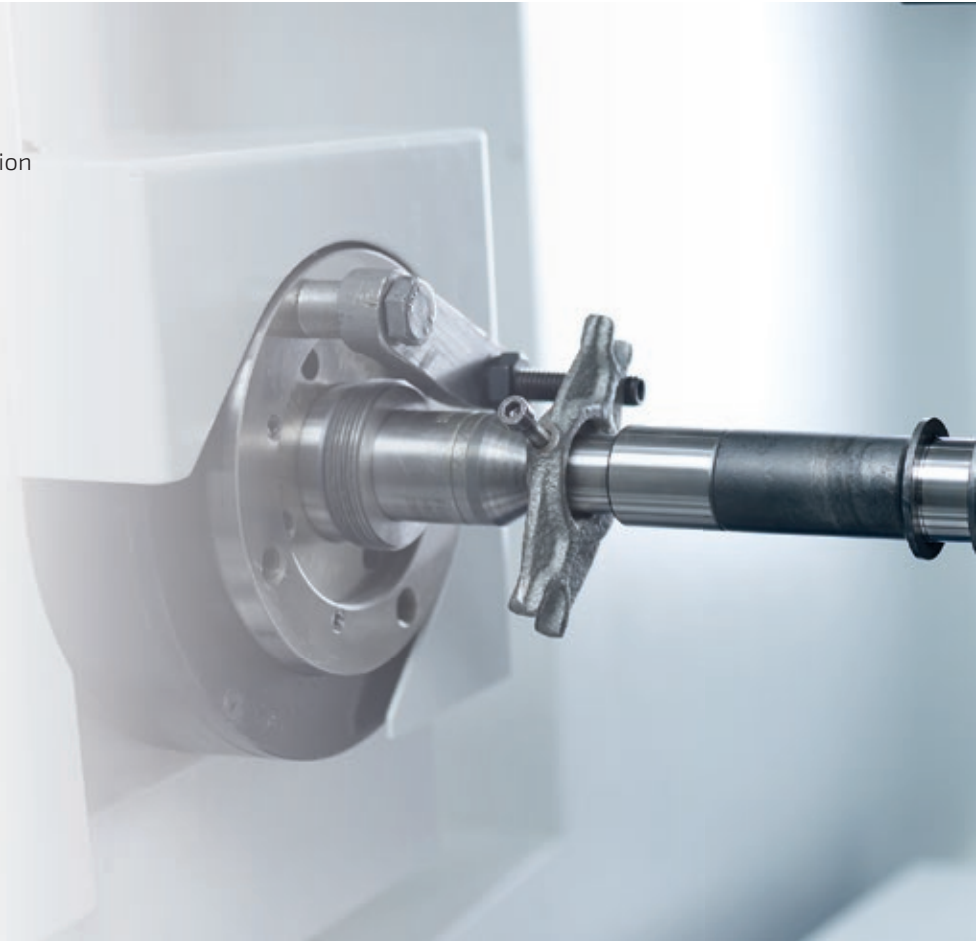
- + Modern Z-axis with precision guidance, ball screw drive and servomotor, enabling  $\mu\text{m}$ -accurate reversing and positioning.



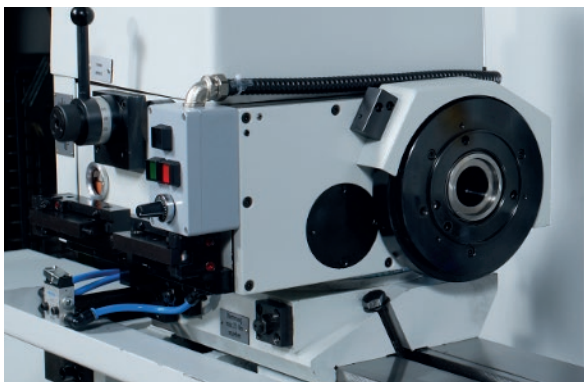
# W 11-EVO (hydraulic-free) – Conventional cylindrical grinding machines

## GRINDING HEAD

- + Spindle bearing hydrodynamic or precision spindle bearing
- + Grinding wheels Ø 300/400/500 mm
- + Drive power 4 kW, 5.5 kW, 7.5 kW
- + Constant/adjustable grinding wheel peripheral speed

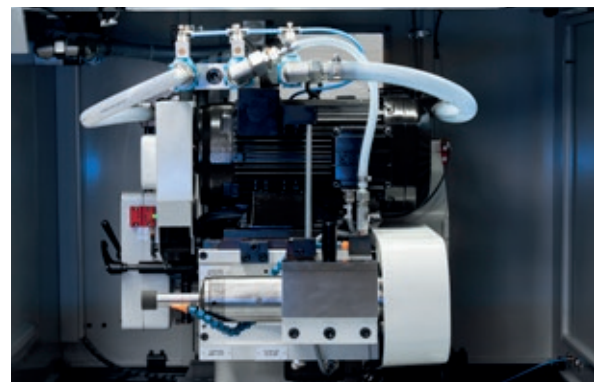


## Workpiece headstock

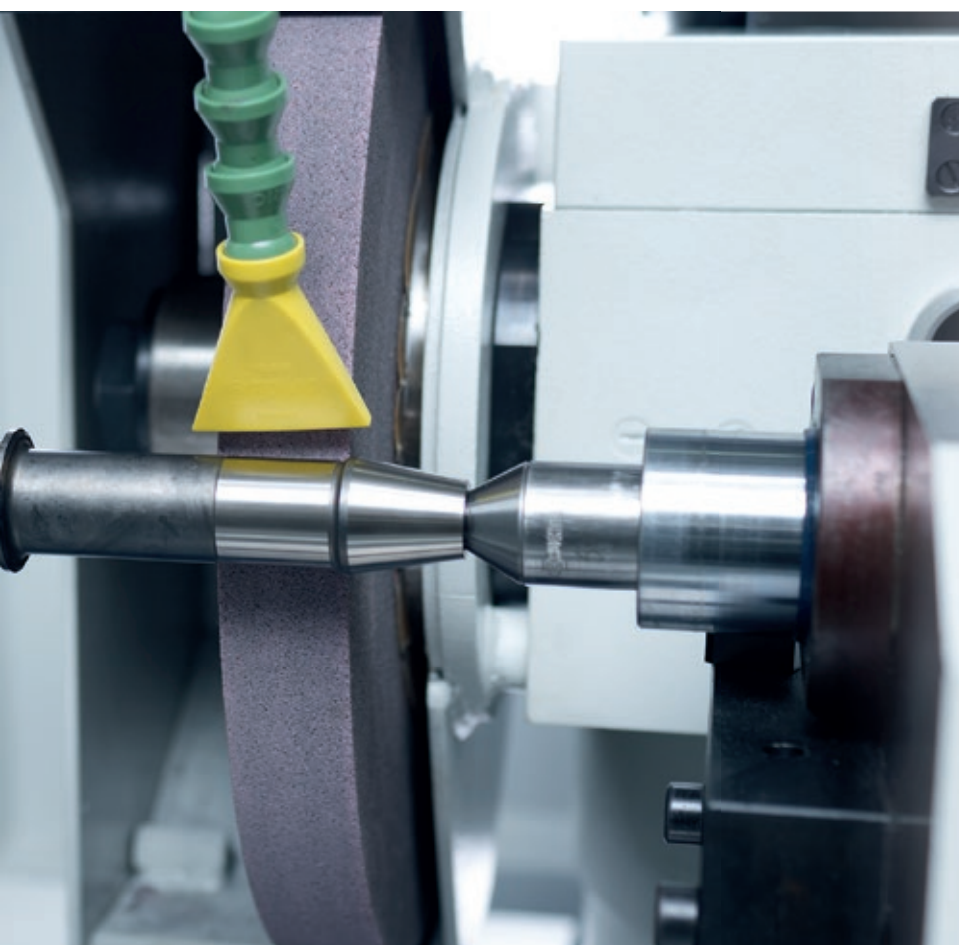


- + Mounting MK4/MK5/MK6 or special mounting
- + Spindle stationary (option) and co-rotating, infinitely variable speed 10 - 450 1/min
- + Option: Servo control from 1 - 1,000 1/min
- + Option: Encoder angle display
- + Option: Air cushion for swivelling and shifting
- + Option: Collet chuck, magnetic chuck or jaw chuck

## Internal grinding device



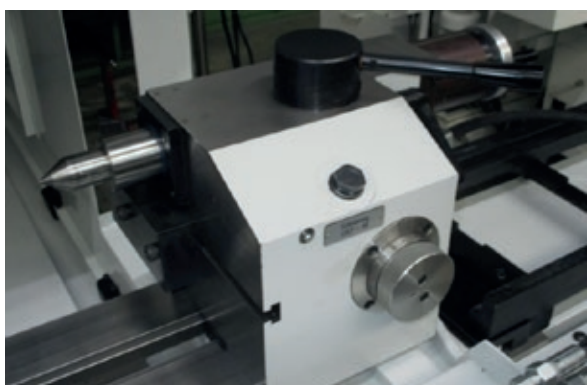
- + Rear-mounted, with separate drive motor for belt spindle, Ø 40 - 80 mm
- + Manually swivelling via central clamping, machine setter mounted at the rear
- + Holder for spindle Ø 100 mm
- + Speed control for grinding wheel SUG
- + Option: Motorised spindle



### ADDITIONAL OPTIONS:

- + Partial compartment panelling with oil mist extraction
- + Digital display
- + X-axis, Z-axis
- + Angle display for grinding spindle headstock/workpiece headstock/upper table adjustment
- + Adjustable SUG outside and inside
- + GAP sensory equipment
- + Steady rests
- + Special clamping devices

### Tailstock



- + MK4 or special holder
- + Quill stroke 45 mm
- + Option: Cylinder fine adjustment +/-0.04 mm
- + Option: Foot switch
- + Option: Air cushion for shifting
- + Option: Tailstock support for internal grinding

### Surface grinding device



- + Surface grinding device mounted on the right of the external grinding spindle
- + Grinding wheel  $\varnothing$  250 mm
- + Can be swivelled manually via central clamping

# W 11-EVO

## Touch user interface



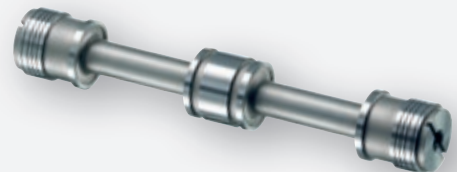
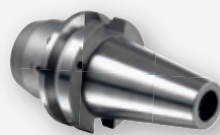
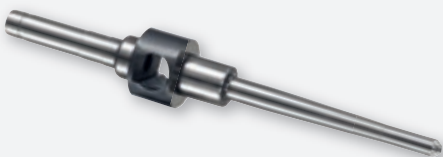
### Touch user interface

- + With preselection for plunge-cutting - longitudinal grinding
- + Input of feed rates for rough-machining/finish-machining
- + Firing time, idle strokes
- + Return path/clearance positions
- + Integration of the grinding wheel control SUG and the dressing parameters for each grinding wheel



# W 11-EVO – Technical data

VERSION W 11-EVO		SL 650	SL 1000	SL 1500
Grinding length	mm	650	1.000	1.500
Center height	mm		180 / 200	
External grinding Ø	mm		0 – 350 / 0 – 390	
Max. workpiece weight flying MK 4	Nm		100	
Max. workpiece weight between centres	kg		250	
<b>Infeed X-axis</b>				
» Rapid traverse	mm		350	
» Rough adjustment via air cushion	mm		not applicable	
» Rapid traverse speed	m/min		12	
» Jog infeed	mm		0,001	
<b>Z-axis infeed</b>				
» Max. traverse path	mm	760	1.150	1.680
» Travelling speed	m/min	12	12	12
» Resolution length measuring system	mm	0,0001	0,0001	0,0001
<b>Grinding head</b>				
» Grinding wheel Ø	mm		400 / 500	
» Drive power	kW		5,5 – 7,5	
» Peripheral speed	m/s		25 – 50	
<b>Workpiece headstock</b>				
» Speed range	1/min		1-1.000	
» Inner taper mount	---		MK4, option MK5 / MK6	
» Centering-Ø	mm		63 / 80	
<b>Tailstock</b>				
» Quill holder	---		MK4	
» Quill stroke	mm		45, special stroke option	
» Cyl. fine adjustment travel	mm/Ø		0,08 (+/-0,04)	



+ **Special shaft**  
for the packaging industry

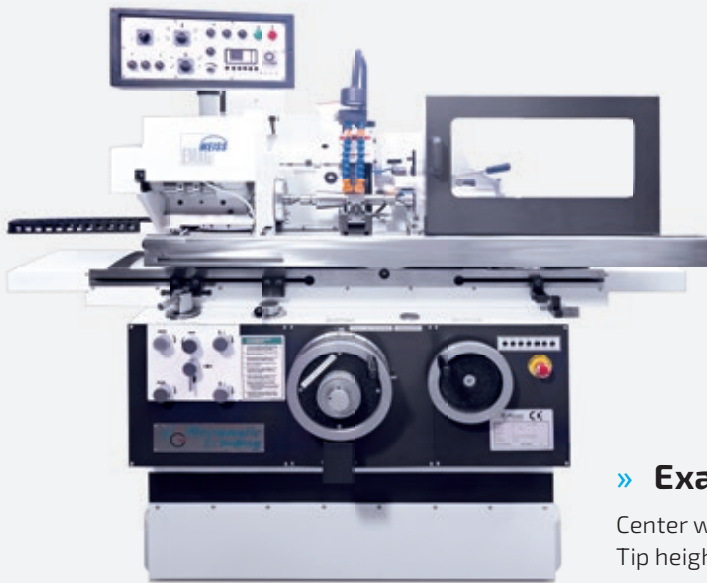
+ **Special tool holder**  
with SK taper

+ **Hydraulic slide valve**  
for slide valve

# ECO 200 – Conventional external-internal cylindrical grinding machine

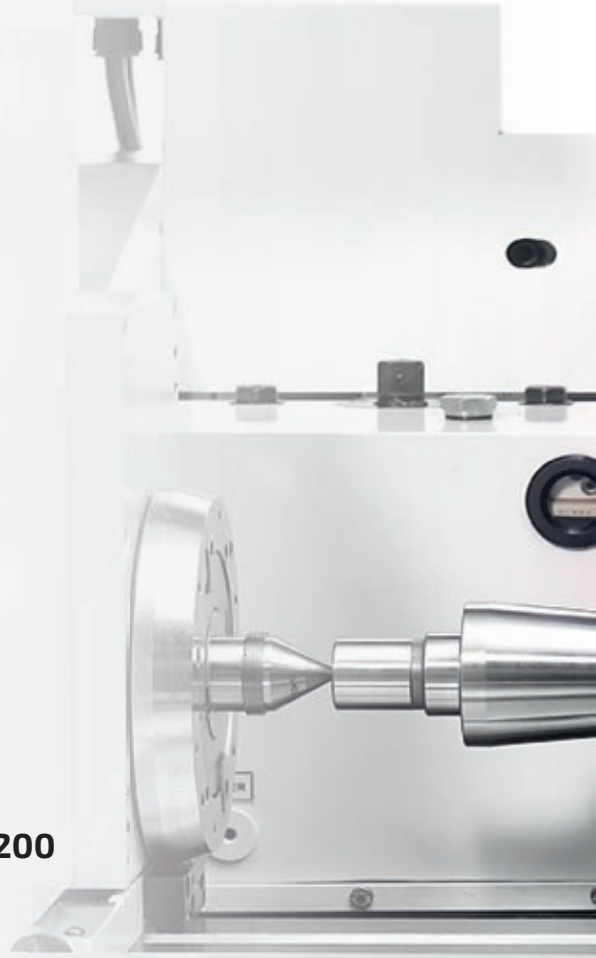
## SIMPLE, COST-EFFECTIVE, HIGH-PRECISION CYLINDRICAL GRINDING MACHINE

Easy operation and retooling of the machine, good accessibility, simple machine concept, small footprint of 2,100 x 1,700 mm. Further options such as DXF converter, contour editor ...



### » Example ECO 200

Center width 400 mm  
Tip height 100 mm



### Grinding head



- + Spindle bearing hydrodynamic
- + Grinding wheel  $\varnothing$  350 x 50 x 127 mm
- + Grinding wheel arrangement right
- + Drive power 3.7 kW, 35 m/s
- + Option: SUG speed control

### Workpiece headstock

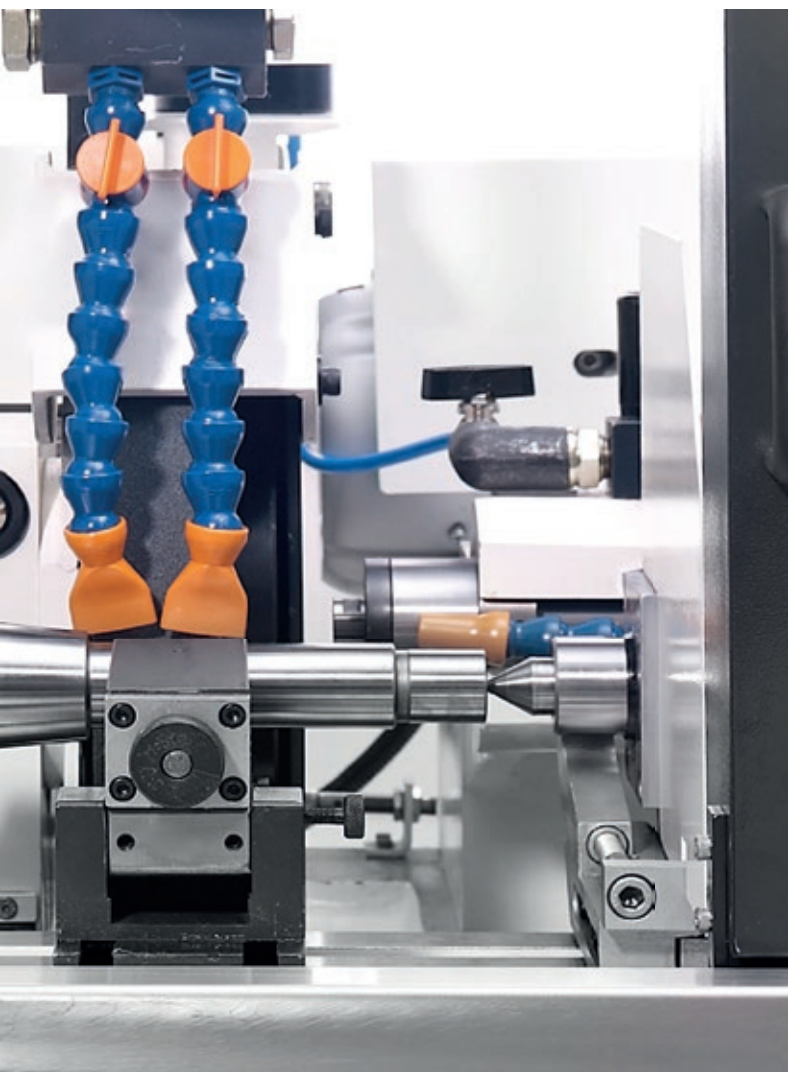


- + Spindle bearing hydrodynamic/roller bearing
- + Mounting MK4
- + Spindle stationary and rotating
- + Speed infinitely variable 10 - 500 1/min
- + Drive power 0.75 kW

### Tailstock



- + Mounting MK3
- + Quill stroke 25 mm
- + Option: Cylinder fine adjustment, foot switch



## ECO 200 – Technical data

Grinding length	mm	400
Center height	mm	100
External grinding $\emptyset$	mm	1 – 100
Max. weight flying MK 4	kg	30
Max. workpiece weight between centers	kg	50

### Infeed X-axis

» Rapid traverse	mm	40
» Spindle adjustment via handwheel	mm	20
» Coarse adjustment	mm	150
» Automatic grooving path	mm	1,7 [3,4]
» Smallest infeed $\emptyset$	mm	0,001
» Firing during plunge-cutting	s	0 – 30

### Longitudinal slide Z-axis

» Table travel	mm	450
» Table speed	m/min	0,1 – 5
» Smallest table travel	mm	2
» Swivel path	Grad	-2° to +30°

### Grinding head

» Grinding wheel $\emptyset$	mm	350
» Drive power	kW	3
» Peripheral speed	m/s	25 – 50

### Workpiece headstock

» Speed range	1/min	90 – 1.000
» Inner taper mount	---	MK4
» Drive power	kW	0,75
» Perm. load in chuck	Nm	30

### Tailstock

» Quill holder	---	MK3
» Quill stroke	mm	45, Option special stroke
» Cyl. fine adjustment travel	mm/ $\emptyset$	0,08

## Internal grinding device



- + Spindle holder  $\emptyset$  80 mm
- + Drive power 1.1 kW without internal grinding spindle
- + Option: Fischer-GMN belt spindle

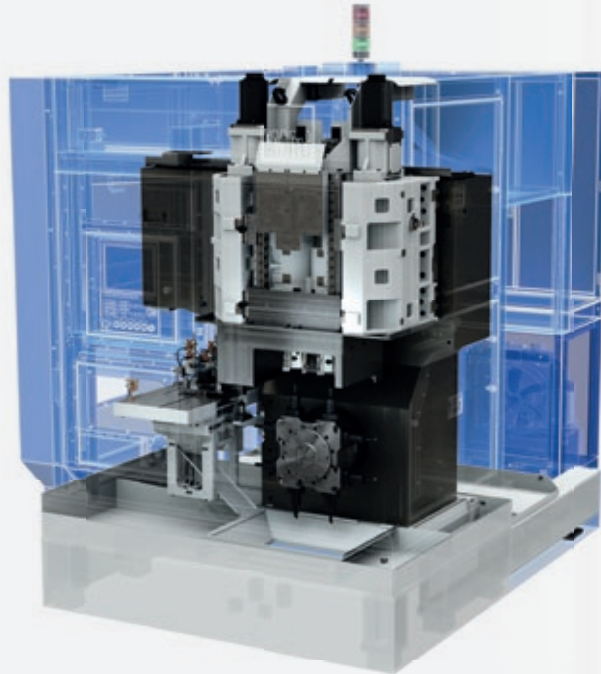
# Retrofit at EMAG

## NEW TOP PERFORMANCE FOR YOUR EXISTING MACHINE

Retrofit at EMAG - that means the highest quality in every detail: Used machines or machines in your inventory are precision overhauled, modernized and perfected all around.

The range of services extends from replacing individual assemblies such as spindles and upgrading control systems to the complete conversion of individual machines or complex manufacturing systems - including new tool systems. Users benefit from the usual EMAG quality: Tailor-made solutions for efficient production processes are created.

Retrofit at EMAG: Benefit from the know-how and experience of the original manufacturer!



## Customized cylindrical grinding machines uncompromisingly individual!

A willingness to compromise is required in many areas of life. Not so at EMAG Weiss. Our customers get exactly what they need. Because with us, the technology is geared to the user, not the other way around.



BEFOR



AFTER

It is the little things that make perfection, but perfection is anything but a little thing.  
(Henry Royce)

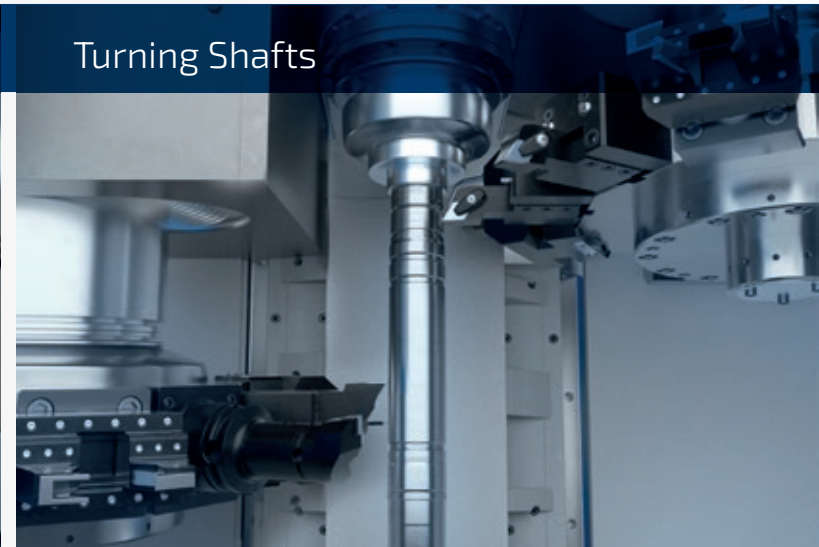




# TECHNOLOGY. CONNECTED.



Turning Chucked Components



Turning Shafts



Gear Grinding



Cylindrical Grinding

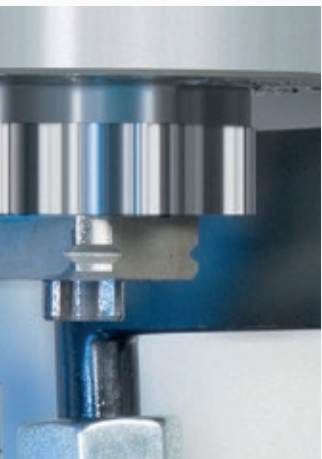


Out-of-round G

Milling



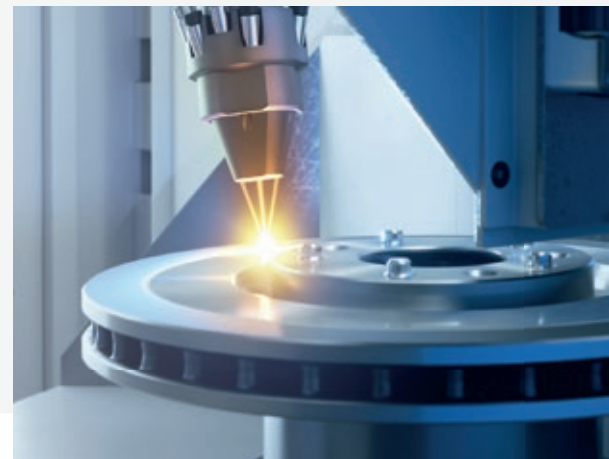
Gear Hobbing



Grinding



ECM/PECM



Laser Processing

At home all over the world.



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