E5

ENTER

A NEW ERA OF MILLING

5 Axes

1 Disc

6 Blocks

17 Tools

Dry

Mill

CAM Software incl.

vhf

THE INNOVATIVE MILLING MACHINE FOR DIGITAL DENTAL TECHNOLOGY IN THE PRACTICE LAB AND THE LABORATORY.

Optimize your digital workflow, enjoy maximum freedom and achieve perfect results with optimum efficiency.

PREMIUM DENTAL MILLING MADE EASY.

The E5 requires no compressed air; therefore, you have maximum freedom in the choice of the installation site, and you also benefit from minimal operating costs. The open system architecture of the E5 makes your entry into the digital production of dental restorations quick and easy, and it fits perfectly into your workflows. The integrated CAM software enables you to get started right away!

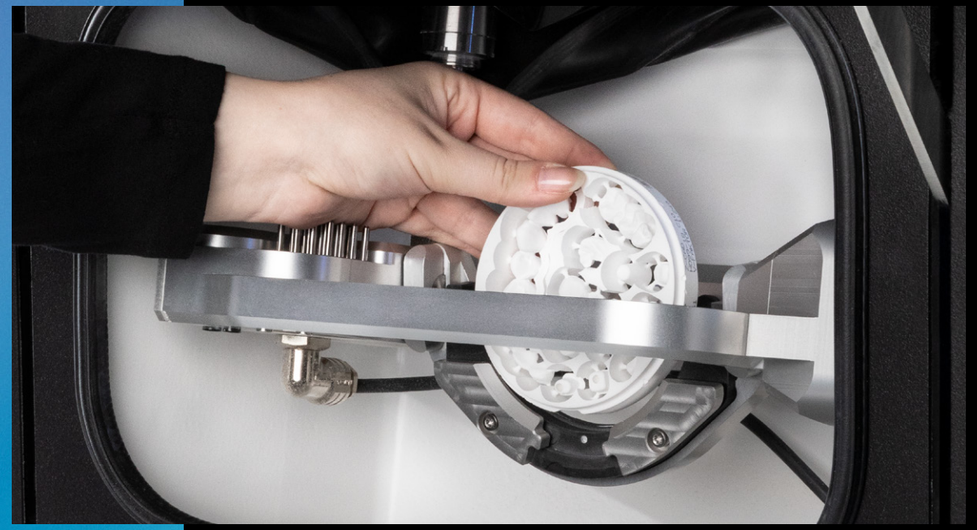
Plug & Mill: Unpack, connect, start milling!

Numerous innovations and without the need for expensive compressed air: The new E5.

Lucas Kehl
Head of Product
vhf camfacture AG

SIMPLY EASY.

5-AXIS DRY MILLING AT THE HIGHEST LEVEL. WITH EXTREMELY SIMPLE OPERATION.



LET THE WORK FLOW.

Despite its compact design, the E5 offers a generous working chamber with plenty of space in which to clamp the workpieces and load the automatic tool changer.

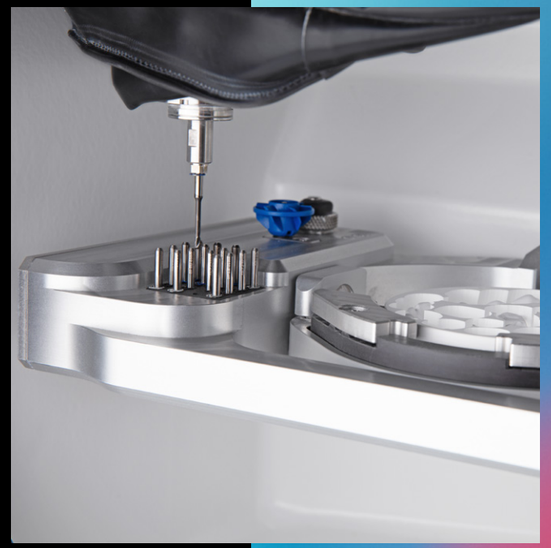
BEST RESULTS. WITH EASE.

The E5 was developed with an optimized weight of only 43 kg and is manufactured with only the highest quality industrial components, thereby fulfilling our claim of *Creating Perfection*. How do you benefit? The E5 achieves impressive, first-class results.

E5

LET'S GO WITH EASE!

The E5 not only allows you to mill discs; you can also use the appropriate holder to process up to 6 blocks of different sizes with minimal effort.



The automatic tool changer can accommodate 16 standard tools and an AIR**TOOL.**

E5

MATERIAL, MANUFACTURER, INDICATION.

Enjoy great freedom of choice.

Compo-sites

PMMA & Wax

Zirconia

CoCr sintering metals

- Crown | Bridge
- Inlay | Onlay
- Veneer
- Occlusal splint
- Full denture
- Denture framework
- Implant bar
- Abutment
- Screw-retained crown
- Screw-retained bridge
- Surgery guide
- Primary crown
- Secondary crown
- Model plate
- Model tooth die

Be sure to review local and/or national regulations and/or regulations by other authorized organizations or entities (e.g. professional associations, health authorities).

NO COMPRESSED AIR NEEDED – DUE TO AIRTOOL.

One great innovation of the E5 is that it does not use compressed air: The E5 requires neither an external compressed air connection nor an integrated compressor, which is only possible with our patent-pending AIR**TOOL**. The AIR**TOOL** turbine blades use the speed of the high-frequency spindle to generate a powerful air flow, which keeps the workpiece free from dust and chippings. They are removed by vacuum from a dust collector.

SERVICE? EASY!

If your machine requires servicing, the central components, e.g. the spindle and control unit, are easy to replace and you can even service the machine yourself in just a few steps. In addition, the lightweight and service-optimized design saves transport time and resources.

E5

THE ADVANTAGES? THERE ARE SO MANY!

Innovative

No compressed air required with the patent-pending AIR**TOOL**

Machine design optimized for minimal weight

C-holder for 90° machining of anterior teeth (coming soon)

Modular machine design to optimize servicing and maintenance

Reliable

100% developed and manufactured in Germany

Optimum manufacturing results and high durability with only premium-quality industrial components

24-month guarantee

Fast & precise

800 W 60,000 rpm spindle

3 µm repetition accuracy

Cast aluminum body for low vibration in operation

Independent

Mills almost all materials up to CoCr sintered metals in a 98.5 mm disc format, holders available for 110 mm discs and blocks

Maximum indication versatility with a rotating angle of ±35° in the 5th axis and blanks with a thickness of up to 40 mm

DENTAL**CAM**-software with an open interface to all scanners and materials

Cost-effective

Sustainable operation with no compressed air

Environmentally friendly shipping due to low weight of machine

Fast and cost-effective entry into CAM production in the laboratory environment

Extremely simple operation with provided DENTAL**CAM** software featuring DIRECT**MILL** technology – no license fees

TECHNICAL DATA

GENERAL

Fields of application	Dry machining
Materials	Composites, plastics/wax, zirconia, CoCr sintered metals • Discs, height 10–40 mm, diameter 98.5 mm • Blocks up to 40 × 20 × 20 mm (block holder required)
Indications	Crowns, bridges, inlays, onlays, veneers, occlusal splints, full dentures, denture frameworks, implant bars, abutments, screw retained crowns, screw retained bridges, surgery guides, primary crowns, secondary crowns, model plates, model tooth dies
Holder systems	Holder for 98.5 mm discs (integrated) · holder for 110 mm discs (optional) · 3-fold block holder (optional) · Ivotion[1] accessory kit (optional)

BASE SYSTEM

Construction	Machine bed made of solid cast aluminum body
Housing	White high-gloss lacquer finish · upward opening lift door to the workroom
Number of axes	5
Linear axes X-/Y-/Z-axis	Precision ball screws · motors with resolution < 1 µm · ground precision guides made of high-alloyed steel · repetition accuracy ± 0.003 mm
Rotary axis A-axis	Backlash-free tension shaft gear with highest angular accuracy · rotation angle: 360°, infinite
Rotary axis B-axis	Backlash-free tension shaft gear with highest angular accuracy · rotation angle: ± 35°
Control unit	5-axis simultaneous control electronics with continuous path progression and dynamic pre-calculation · hardware-based real-time operating system with standardized instruction set · FPGA-integrated processor · updateable hardware · real-time path and ramp calculation via dedicated hardware engines in the FPGA · four-quadrant control of the motors for particularly smooth running · multiple digital I/Os for controlling the peripherals · integrated inverter for synchronous and asynchronous motors, electronic gate detection · Ethernet and USB interface
Lighting	RGB LED lighting with status indication

SPINDLE

General	High-frequency spindle with electromechanical tool change
Speed	Up to 60,000 rpm
Power	Peak power (P_{max}): 800 watts · nominal power (S6): 400 watts · continuous power (S1): 300 watts
Bearing	2-fold hybrid ceramic ball bearing
Collet	For tools with 3 mm shank diameter and max. 40 mm total length

AUTOMATION

Tool change	Tool magazine for 16 tools plus one AIR**TOOL** · length measurement and tool breakage monitoring via precision measuring key · access via front-door, safety-locked

PROCESSING MODES

Dry	Compressed air-free operation through use of AIR**TOOL**s · hose connection for external suction unit on the back of the housing · 24 V switch output for controlling suction units

CONNECTION REQUIREMENTS

Compressed air	–
Power supply	100–240 volts · 50/60 Hz, 500 watts
Extraction system	Extraction filter class M, 2,500 l/min extraction capacity at 200 hPa
Data	10/100/1000 MBit/s BaseT port (auto-sensing) Ethernet via RJ-45 socket

ENVIROMENTAL CONDITIONS

Operating temperature	Between 10 °C and 35 °C
Air moisture	Max. 80 % (relative), non-condensing

APPROVALS

All models	CE
North America model	UL 61010-1, CAN/CSA C22.2 No. 61010-1

DIMENSIONS & WEIGHTS

Dimensions (W/D/H)	472 × 484 × 734 mm with closed door · 472 × 567 × 734 mm with open door
Footprint (W/D)	387 × 370 mm
Weight	43 kg

SCOPE OF DELIVERY

CAM Software	DENTAL**CAM** software included
Accessories	Spindle service set · calibration set incl. stirrup measuring screw · tool magazine inserts (1 piece) · Torx wrench set · torque drover 1.5 Nm · AIR**TOOL** for wax and plastics · drill bit (tool positions) · cleaning brush and microfiber cloth · Administrated Tool Board (ATB) for tool storage · power cable · Ethernet network cable · operating manual

[1] Ivotion is a brand of Ivoclar Vivadent

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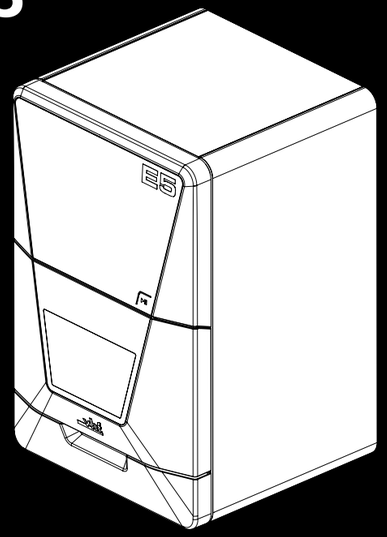

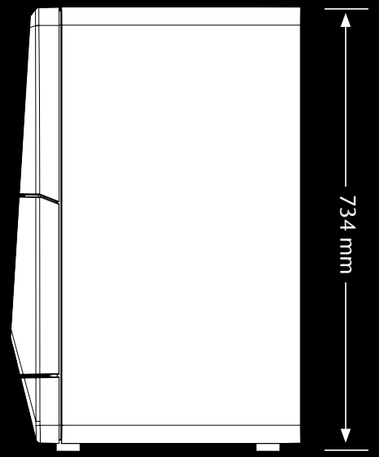

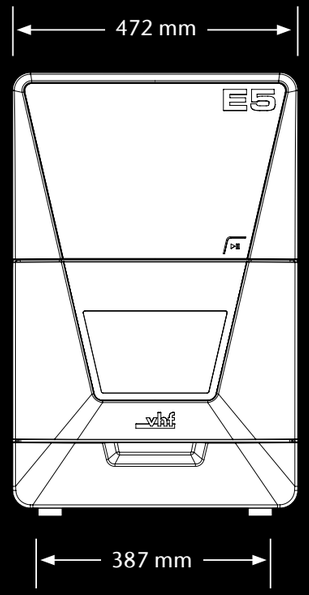

The E5 from vhf has enabled me to get started with digital dental technology.

I can now provide almost any indication in my practice lab. Virtually no reworking is required, and the E5 is extremely easy to operate.

Dr. Tim Wiesner
Dentist, Tübingen

Creating Perfection.

With more than 30 years of experience, vhf is a leading manufacturer of dental milling machines. As a CAM full-service provider, vhf meticulously develops and produces each individual milling machine and the perfectly matched tools and software all in-house. Everything from a single source. Made in Germany.

Service. We are passionate about what we do.

Our products are extremely low-maintenance and highly durable, but the servicing of your machine is important to us. We provide customer support with our user-friendly Dental-Portal, numerous online tutorials and personal assistance through our international service network.

ease.vhf.com/E5

WE LOOK FORWARD TO HEARING FROM YOU.

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