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**CIMT Pi5 DENTAL
DENTAL MILLING UNIT**

**High Speed
Made in Germany**



CIMT Pi5 DENTAL.

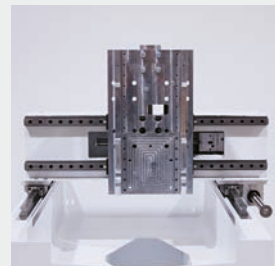
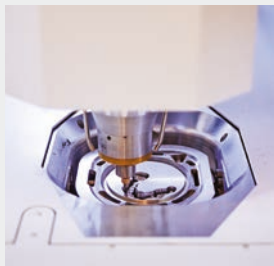
The new benchmark. For performance and value.

Digital transformation and ongoing changes in health-care policy have changed the dental world. Market dynamics are increasingly forcing dental technology into a balancing act between dentists and patients, budget and time constraints, and quality expectations.

So what are the factors that ensure continued profitability for dental laboratories and milling centers? Greater efficiency, better quality, greater speed. Automation and digital technology that can compensate for the shortage of skilled operators – standard requirements within the digital workflow. What is needed is a smart investment in high tech. And high speed.

Advantage: Industry Standard. Now in your own lab.

The CIMT Pi5 dental milling machine brings industrial-grade manufacturing quality into the dental lab for the first time. It offers premium industrial technology without compromise—except for its impressively compact format. From its extreme performance in terms of speed and precision, to the size of its critical components, to its full integration with digital systems, the CIMT Pi5 takes your dental lab to new levels of efficiency and quality, significantly improving profitability.



- Industrial quality in a compact package
- Extremely fast, precise, and accurate
- Unique acceleration with exceptional milling performance
- Increased productivity for maximum profitability

HIGH TECH MADE IN GERMANY.

From Rosdorf to the dental world.

CIMT Precision GmbH is a medium-sized high-tech manufacturer located in Rosdorf near Göttingen, in the heart of Germany, and part of the global EMUGE-FRANKEN Group. A team of highly qualified specialists at CIMT develops and manufactures the next generation of high-speed measuring and milling machines.



Taking things to the extreme. This is how excellence is created.

What separates the best from the good? They push boundaries in every way. In fact, that could very well be the guiding principle of our engineers and technicians. Drawing on their extensive experience in manu-

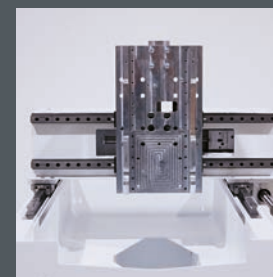
ring ultra-precision measuring and milling machines, they developed the idea for a dental milling unit with a new, unique profile: the CIMT Pi5 brings industrial-grade performance into a compact and economically attractive format.

Top-down means more reserves. By design.

Industrial quality Made in Germany has traditionally been characterized by a core principle: machines are designed for the maximum anticipated load or demand. Components are engineered for superior, long-lasting performance. The result? Precision and durability that delivers what it promises. The benchmark for the CIMT Pi5 was the demanding and complex machining of CoCr and titanium. If the milling unit can handle high-speed milling of these materials and cut chips consistently and accurately, it will also machine all other dental materials faster and more accurately.



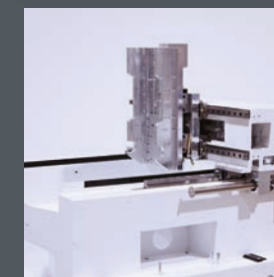
With an industrial-strength high-performance motion unit, the machine delivers precise response and reaction control in extreme dynamic movements.



This means no vibration, no deformation, and perfectly controlled acceleration, reducing wear and increasing precision.



Premium features coupled with industrial-grade performance and features—all in a compact format that fits seamlessly into almost any industrial or lab environment.



Solidly built, incredibly fast, and ultra-precise. A forceful powerhouse with the finesse of a watchmaker.

Better milling means more value from every job.

The industrial performance level of the CIMT Pi5 is evident in its significantly improved milling quality. The machine's efficiency translates into producing more parts in less time, with superior results.

- Harnessing the full potential of the digital workflow
- Milling more accurately in less time
- Maximum accuracy of fit
- Minimized rework
- Reduced need for specialist staff
- Less tool wear

**100 %
component
quality**
from industrially
certified
manufacturers

TIME IS MONEY.

Why not just do the math?



4 MINUTES

Custom abutments



18 MINUTES

Fully contoured CoCr crowns



29 MINUTES

Three-unit CoCr bridge



29 MINUTES

Three-unit CoCr secondary bridge



22 MINUTES

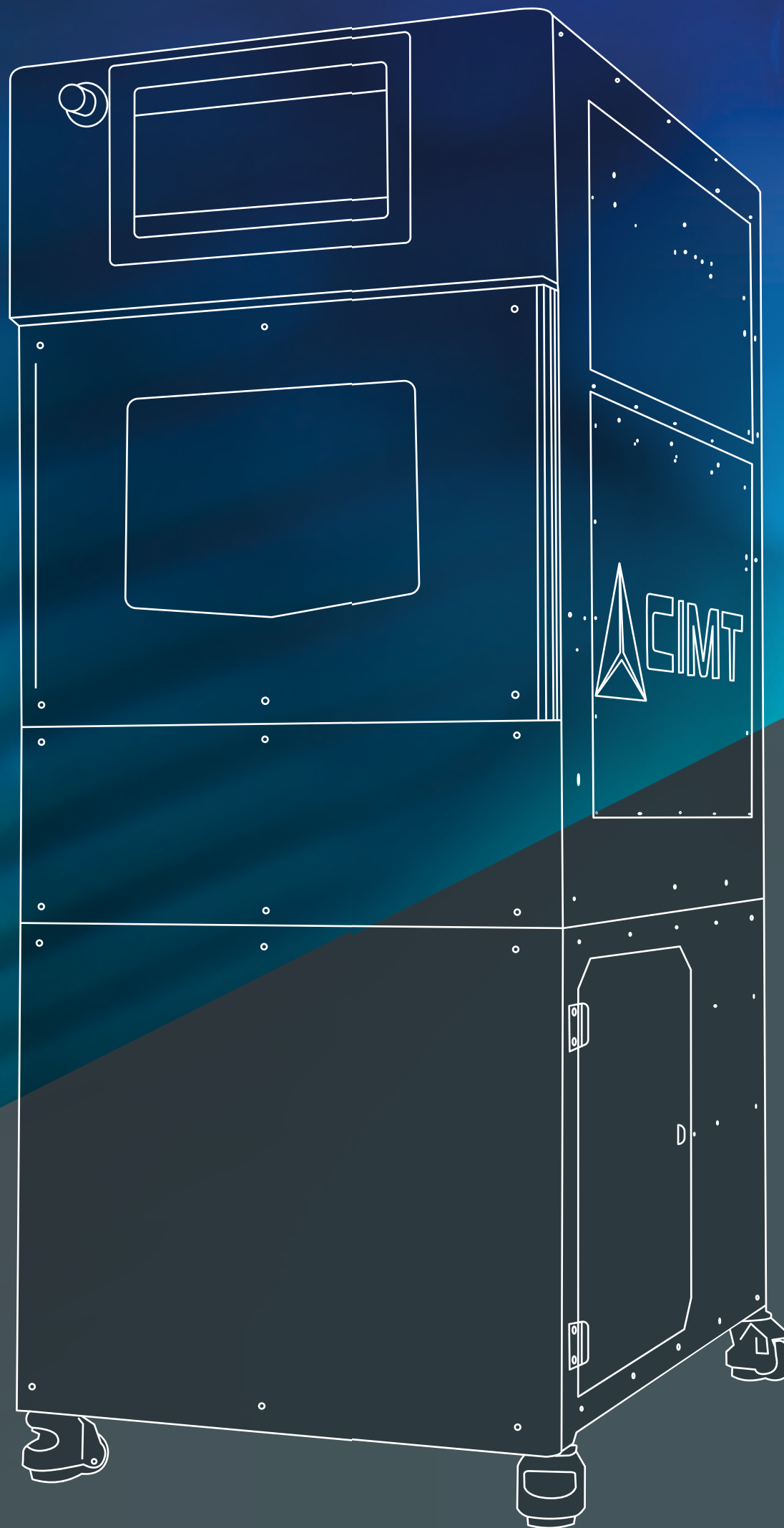
Splint, 5-axis simultaneous milling with undercuts



140 MINUTES

Custom-milled complete maxillary and mandibular dentures, including dental arch and prosthesis base

**Your milling center for all
dental technology applications.**



TOP FEATURES:

Feel free to push ahead. With up to 1.7 G.

- Linear acceleration up to 1 G
- Resulting acceleration up to 1.7 G in the XYZ space
- Dental milling spindle up to 7.2 kW peak power
- Maximum rated speed 60,000 rpm
- Milling speed up to 8,000 mm/min
- Exceptional power and stability for milling CoCr alloys
- High-speed turn-milling of abutments with additional servo motor rotary axis (120 rpm)

**Fully virtual development process:
Designed, Engineered and Made in Germany**

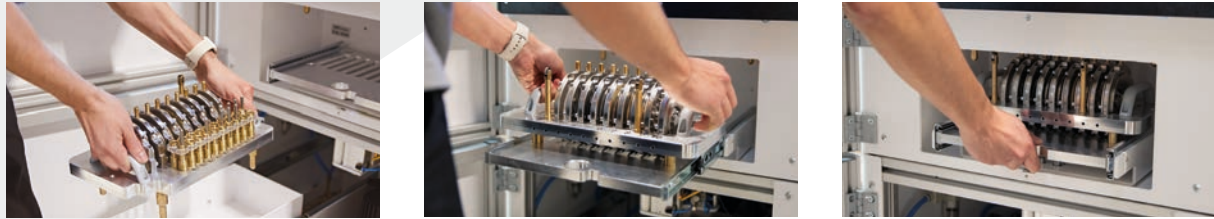
The materials: Everything is possible.

The CIMT Pi5 is designed to machine all common dental materials. Its clamping system accepts 98-mm blanks (max. height 40 mm).

COCR	GLASS CERAMICS	PMMA
ZIRCONIA	COMPOSITE RESINS	PEEK
WAX	PREFAB ABUTMENTS	TITANIUM

MODULAR CASSETTE AND BLANK HOLDER SYSTEM

The modular cassette system allows users to externally load as many cassettes as needed. Each cassette can hold up to 20 milling tools and 10 blanks, allowing quick and efficient material changes and saving valuable time. Each blank holder can accommodate either material blanks or abutment prefab holders.



COOLANT LUBRICATION

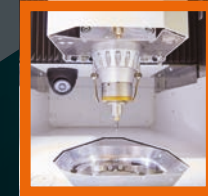
A perfectly adapted and well-functioning coolant lubrication system is a prerequisite for consistent milling quality and extended tool service life. The CIMT Pi5 features a powerful water pump and a large 22-liter tank with a filtration system.

- Powerful water pump
- Large (22-liter) water tank with filtration system
- Ideal for both dry and wet milling
- High-capacity (8-liter) chip container for wet milling



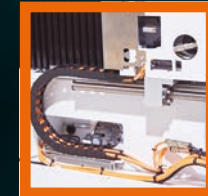
78 CM WIDE, 1 M² SURFACE AREA,
650 KG IDEAL WEIGHT.

Your new milling center.



MILLING SPINDLE

- Reinforced high-frequency spindle
- Heavy-duty spindle nose
- Ultra-high-speed synchronous motor
- Rated speed: 60,000 rpm, extreme pulse torque
- Direct clamping system for 6-mm endmill shank diameter
- Optional HSK clamping system



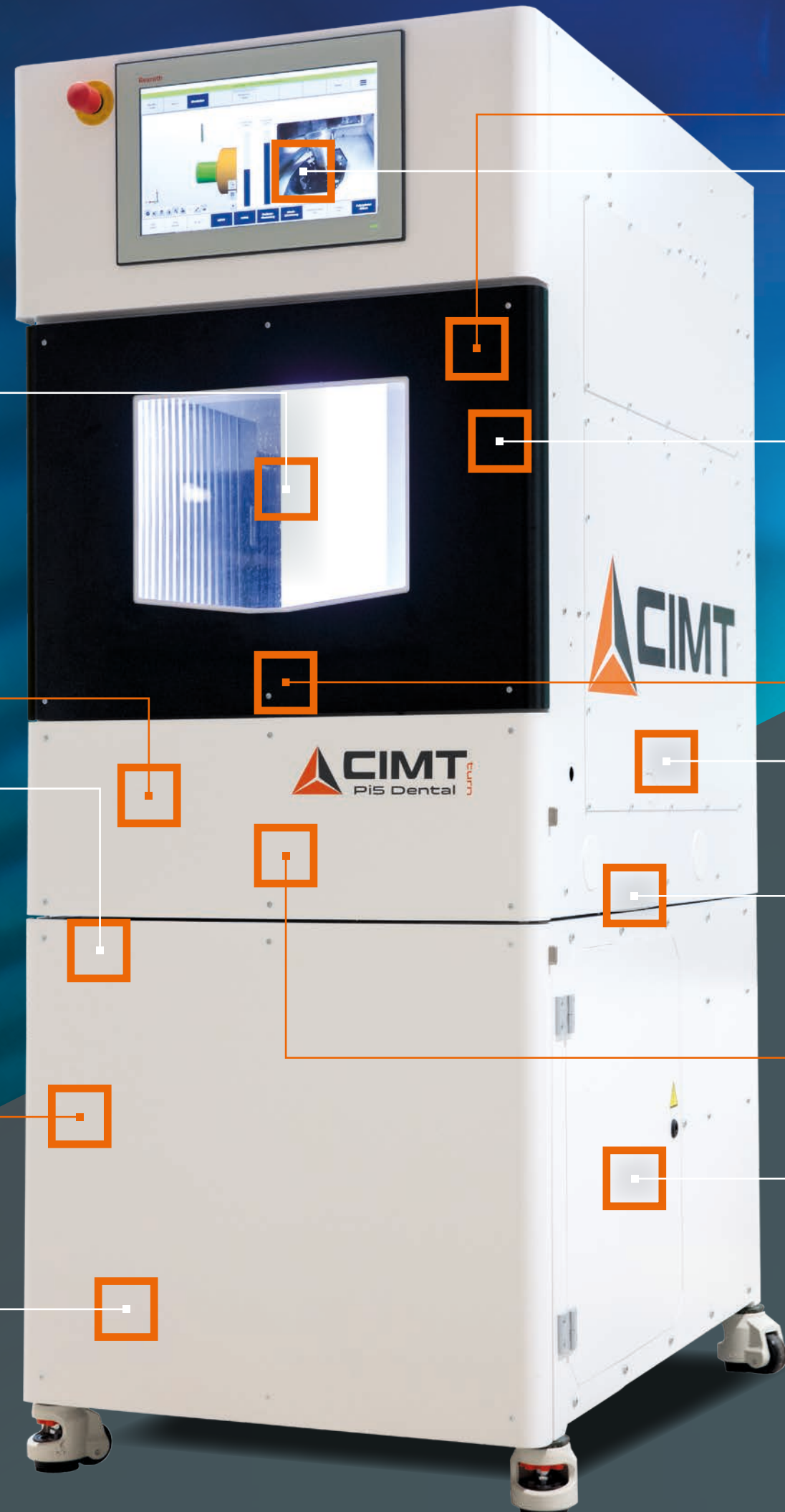
DRIVE

- Max. 1.7 G acceleration for constant milling tip speeds
- Servo motor for all 5 axes (Bosch Rexroth)
- Absolute positioning drives
- Linear guides with precision rollers for high rigidity
- Zero-backlash ball screw for best results
- Optional external position measuring system (linear encoder) for increased positioning accuracy



MACHINE BED

- Ultra-rigid mineral-cast steel-frame machine bed



SCREEN INTERFACE

- 15-inch multi-touch screen
- Dental CIMT GUI for intuitive operation
- All functions monitored
- Full remote-control option

MINIMUM QUANTITY LUBRICATION (MQL)

- Focused cooling for enhanced surface quality when milling plastics



ROTARY-TILT AXIS

- Rigid, accurate and consistently reliable rotary axes for 5-axis machining tasks

EXTRACTION SYSTEM

- Powerful extraction system
- Chip pre-separator with cyclone turbine for optimized chip evacuation



CONTROL UNIT

- Advanced CNC control technology
- Intelligent servo drives and motors
- Extensive PLC and CNC programming (DIN 66025)
- Integrated RJ45 Ethernet connection
- Supports I/O link systems for Industry 4.0 applications



ABUTMENT TURN-MILLING WITH A 6TH ROTARY AXIS

The optional sixth rotary axis in the top-of-the-line CIMT Pi5 turn can significantly improve your bottom line. This feature allows you to turn-mill abutments from prefabs up to 6 times faster while maintaining perfect fit and form. Your turn-milling center for industrial-level tasks.

- Additional sixth servo rotary axis for advanced turn-milling operations
- Dramatic time savings: processes are up to six times faster than conventional prefab milling
- Custom abutments in less than 4 minutes
- Perfect fit
- Integrated zero-point clamping system for secure holding of abutment prefabs
- Significantly improved surface quality thanks to a continuous cutting process
- Automated exchange system for 16 abutment prefab holders
- Developed in collaboration with EMUGE-FRANKEN and leading CAM manufacturers for optimized performance



TACTILE 3D MEASURING SYSTEM



A high-precision 3D measuring sensor to calibrate the milling unit and measure hybrid laser-sintered parts. Shapes can be edited by re-milling until a perfect fit is achieved. As an integral part of the design, this innovation breaks new ground in the dental industry.

PI-CLEAN FOR THE MACHINING CHAMBER



When precision and speed are paramount, cleanliness is critical. The fully automated Pi-Clean system for the machining chamber ensures that the work area is cleaned quickly and thoroughly. The fully automated extraction system safely removes chips and dust. A chip pre-separator with a cyclone turbine completes the system.



Your direct link to all details and features.

See it in action: The CIMT Pi5 turn with its 6th rotary axis mill-turning an abutment.

PRECISION YOU CAN FEEL.

Put your hand on it.

As a dental technician, you know the feel of precise craftsmanship. When you experience the CIMT Pi5 in action, you can almost feel its quality. Place your hand on its solid, steel-mineral cast body and feel the forces of dynamic movement in the motion unit. Through the observation window, you can see how the robust mechanics translate your 3D data into micrometer-level movements of the cutting tool. Fast directional changes, no overshoot, vibration-free, ultra-precise.

Industrial-strength milling makes the most of your data.

CAD programs typically generate a relatively coarse grid when sending data to the NC programs of milling units. Not so with the CIMT Pi5: It uses industrial path calculation to find the optimal “smooth” path between millions of milling points. This technology allows for rapid acceleration and deceleration without overshooting the axes, achieving highly dynamic movements, resulting in extremely precise surfaces with a perfect fit. Combined with the machine’s mechanical capabilities, this approach produces clean surface transitions that do not require manual finishing



Real-time calculation of the optimal milling paths. For more accurate surfaces than standard CAD/CAM systems can provide.



Faster and more accurate milling. Consistently and reproducibly accurate results in less time.



For optimum surface quality, the unit operates without vibration, bending, or resonance. Cutting tools will benefit from increased stability and longevity.

Centralized. Decentralized. Dentalized.

Designed to be controlled directly from a PC or through integrated, networked CAM systems, the CIMT Pi5 features an open digital architecture. This allows for centralized control of multiple units, even in different locations. A unique performance profile ensures optimal utilization for automated 24/7 production, maximizing both machine efficiency and staff scheduling.

With SPS-NC and HMI-CAM digital interfaces, the CIMT Pi5 is highly adaptable, allowing individual control based on specific production requirements.



NUMBERS THAT COUNT. CIMT Pi5 TECHNICAL SPECIFICATIONS.

Milling spindle

- Reinforced high-frequency spindle
- Rated speed: 60,000 rpm
- Ultra-high torque 7.2 kW peak synchronous motor
- Nominal torque: 0.5 Nm
- Pulse torque: 1.7 Nm
- Direct clamping system for 6-mm shank diameter
- Optional HSK clamping system

Drives, dynamics, travel distance

- Linear acceleration: Up to 1 G, for constant milling-path speeds
- Resulting acceleration in space: Up to 1.7 G
- Rapid traverse: max.: 35 m/min
- Milling path speed: Up to 8,000 mm/min (up to 4,200 mm/min for CoCr)
- Servo motor for all 5 axes (Bosch Rexroth) plus additional 6th rotary axis for turn-milling operation
- Absolute encoder drive motors
- XYZ travel distance:
~ 220 mm / ~ 365 mm / ~ 163 mm
- Outer rotary axis: $\pm 35^\circ$ at 30 rpm
- Continuously rotating inner rotary axis (blank clamping system)
- Optional external linear encoder

Machine bed, motion unit, ball screw, protection class

- Mineral-cast steel-frame machine bed
- Ultra-rigid size 25 high-precision linear roller guides
- Zero-backlash, high preload, size 25 ball screw
- IP61 enclosure with PLC safety interlock for staff protection
- Control cabinet in IP20 configuration with VDE lock
- Dust collector integrated in the 5-axis system
- NW50 exhaust connection

Wet-milling system, coolant lubrication

- Powerful water pump
- Large (22-liter) water tank with filtration system
- Ideal for both dry and wet milling
- High-capacity (8-liter) chip container for wet milling

Control, safety technology

- 5-axis simultaneous CNC control (Bosch Rexroth)
- Up to 6 x Sercos III servo drive controllers with STO functionality (Bosch Rexroth)
- Full OPC UA integrated data interface, Industry 4.0
- Tool changer with sister tool function
- Multi-Touch (Bosch Rexroth) 15"
- Customized dental CIMT user interface
- Integrated RJ45 Ethernet connection
- Integrated I/O ILink System for Industry 4.0, ECO power-saving mode
- Integrated camera for remote maintenance

Dimensions

- Width x depth x height:
780 mm x 1,291 mm x 1,913 mm
- Weight: 650 kg

Electrical connection

- Power: 3 x 400 V / 50 Hz / 16 A. 5 m of cable and 16 A 5-pin three-phase plug included
- Universal current-sensitive circuit breaker, type B
- Compressed air: 6.5–9 bar / 90 l/min / NW10

Color

- Body: RAL 9003 white; machine door: RAL 9017 black (powder-coated, slightly textured)

FRANKEN-CIMT premium dental cutting tools: technology teaming up for best results with the CIMT Pi5.

MILLING AS PART OF A SYSTEM ALLIANCE.

Creating high-end synergies.

For more than 100 years, cutting-edge precision tooling technology has been at the heart of the family-owned EMUGE-FRANKEN group. Since 2023, CIMT has been a part of this group, forming a partnership that is committed to precision and innovation. The technological milestones of the EMUGE and FRANKEN brands in areas such as drilling, tapping, measuring, clamping, and milling are the perfect link to the state-of-the-art technology of the CIMT Pi5 dental

milling unit. This partnership enables top-tier performance at a premium level, creating a perfect symbiosis between the machine and its tool.



Customers can easily access the FRANKEN-CIMT dental tools, which are precisely tailored to the CIMT Pi5, via the direct link to the online shop.

Extremely precise? Precisely.

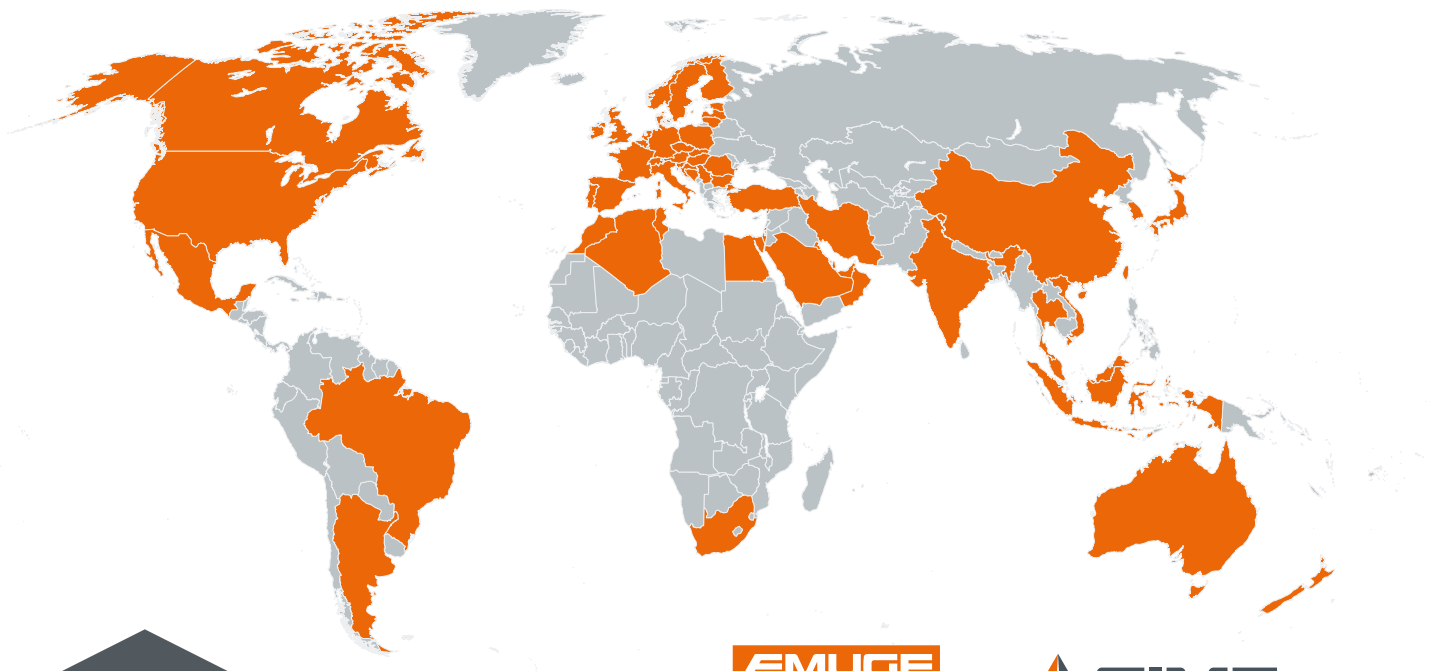
With this level of precision, the synergy potential for the dental world is clear: perfect system integration from machine to cutting tool, from CAM automation to material connection. CIMT customers benefit from complete solutions from a single source. This is the ideal case of a perfectly coordinated system that delivers maximum efficiency AND quality.



CIMT provides a highly qualified and robust team for training, maintenance, and on-site service through certified service partners and engineering expertise of EMUGE.


GLOBAL PRESENCE.

We and our technology partners are so close!



The EMUGE-FRANKEN Group has sales offices in
60 countries worldwide.

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