imes-icore®
Dental & Medical Solutions

CORiTEC® AM series

YOUR BUSINESS MODEL FOR WORKFLOW-BASED METAL PRINTING

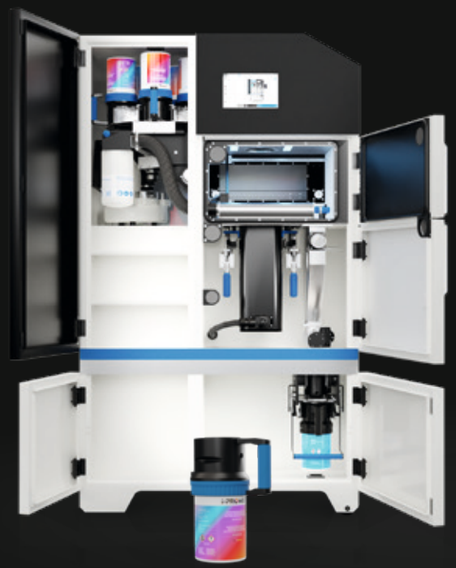
CORiTEC® AM series

THE IDEAL COMBINATION FOR PRODUCTION CENTERS AND DENTAL LABORATORIES

The CORiTEC AM100 metal 3D printer is the fast and affordable entry into additive dental production. The production of up to 250 tooth units per processing cycle sets new standards! By creating tooth prostheses using the laser melting process, highly complex frameworks such as superstructures, model casting, primary as well as secondary parts, crowns and bridges are possible. The innovative cartridge system also enables low handling effort, since the powder is already in the cartridge containers. In combination with the CORiTEC AMpure, used material can be recycled and reused. This coordinated technology ensures low manufacturing costs and thus rapid amortization!

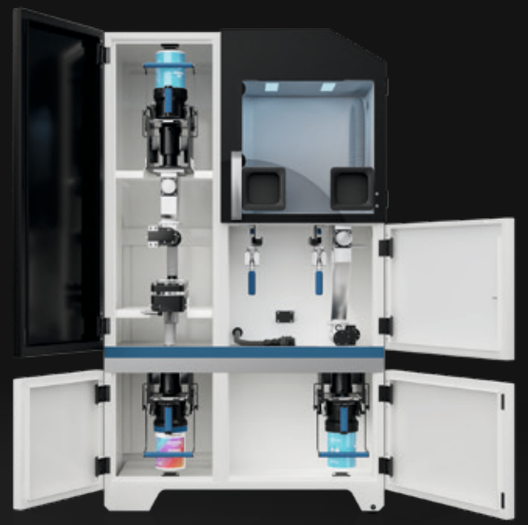
The CORiTEC AMpure unpacking station is a game changer! The door of the chamber has two integrated gloves. This makes it possible to unpack the components without any powder contact. The collected powder is prepared fully automated in the integrated ultrasonic sieving station and can be processed again in the CORiTEC AM100 - clean and sustainable, simple and up to date!

CORiTEC® AM100



3D Metal Printer

CORiTEC® AMpure



Unpacking station included ultrasonic sieve unit for simple and clean powder preparation

CORiTEC® AM100

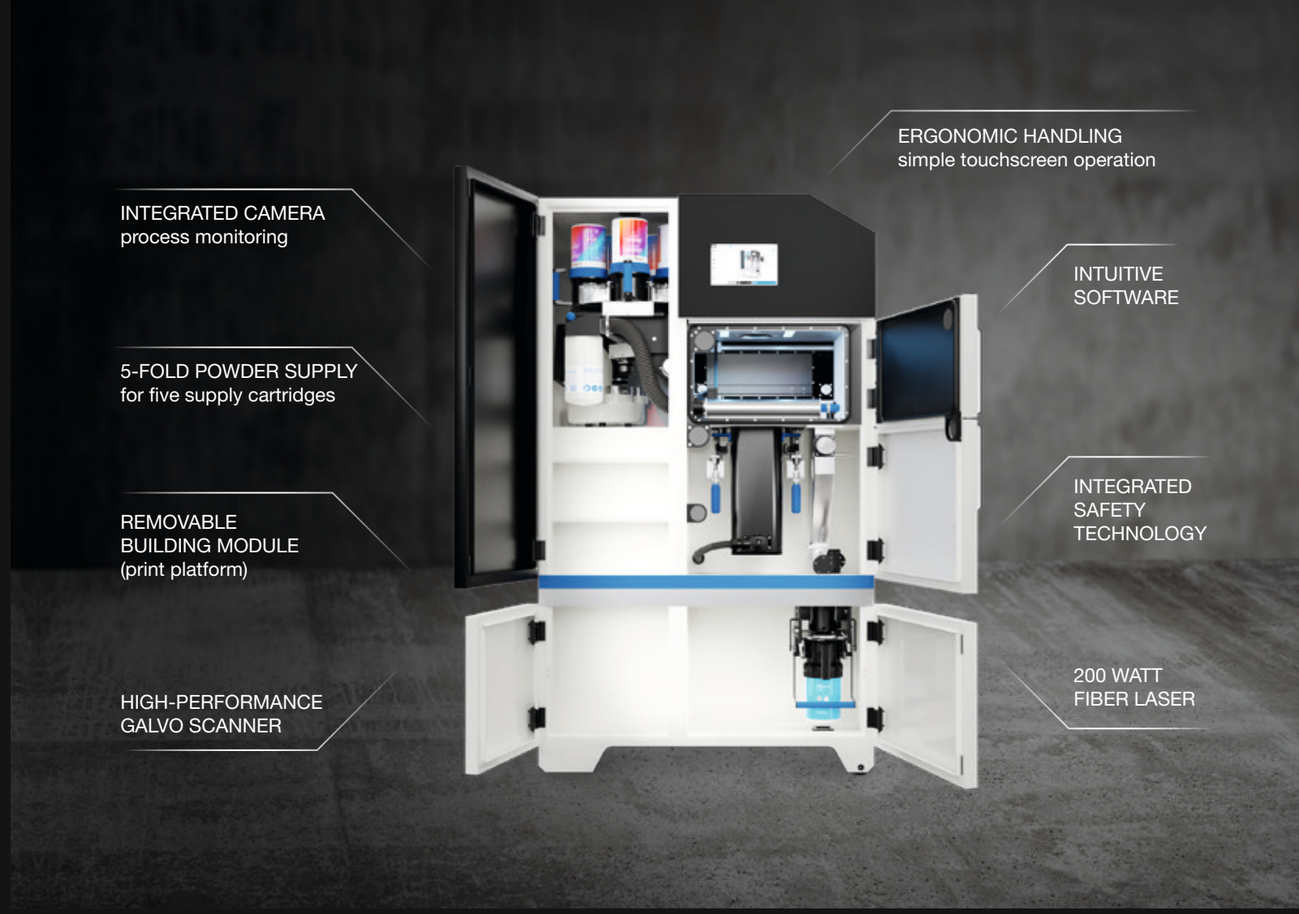
COMPLEX DENTAL CONSTRUCTIONS SIMPLY PRODUCED

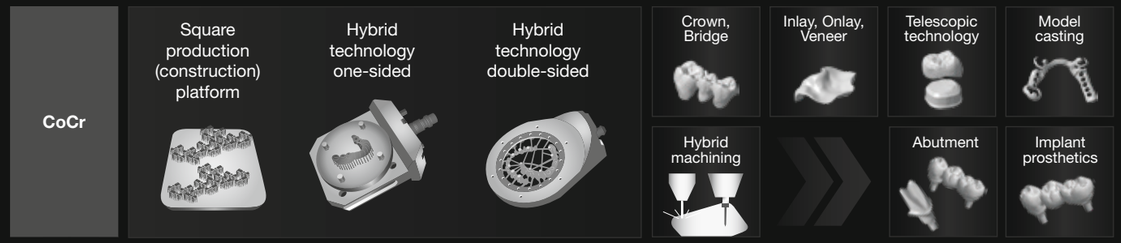
The metal 3D printer operates according to the Laser-Powder-Bed-Fusion process. A 200 watt fiber laser, with a focus diameter of 45 µm, completely melts the powder material layer by layer. This enables the production of the most complex geometries on a surface area of 5.9 x 5.9 inch (150 x 150 mm) and a maximum height of 5.9 inch (150 mm). This modern technology combines speed and sustainability with the result of cost-effective production of dental constructions!

CORiTEC® AM100

HIGHLIGHTS

- Print time per tooth unit < 3 minutes
- Up to 250 dental units per processing cycle
- Up to 500 dental units per day possible
- The most modern production technology by 200 watt fiber laser and high-performance galvo scanner
- Simple touch screen operation
- Optimal process monitoring by integrated camera
- Online remote monitoring and maintenance
- Integrated 5-fold powder supply for five supply cartridges
- Loading the machine with prepared/new powder during the ongoing production process
- Removable building module (printing platform)
- Easy machine operation through intuitive step-by-step software

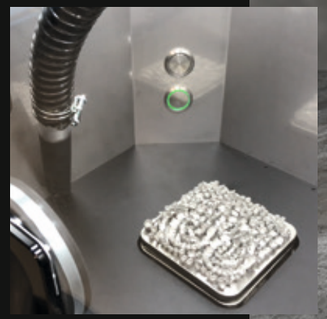


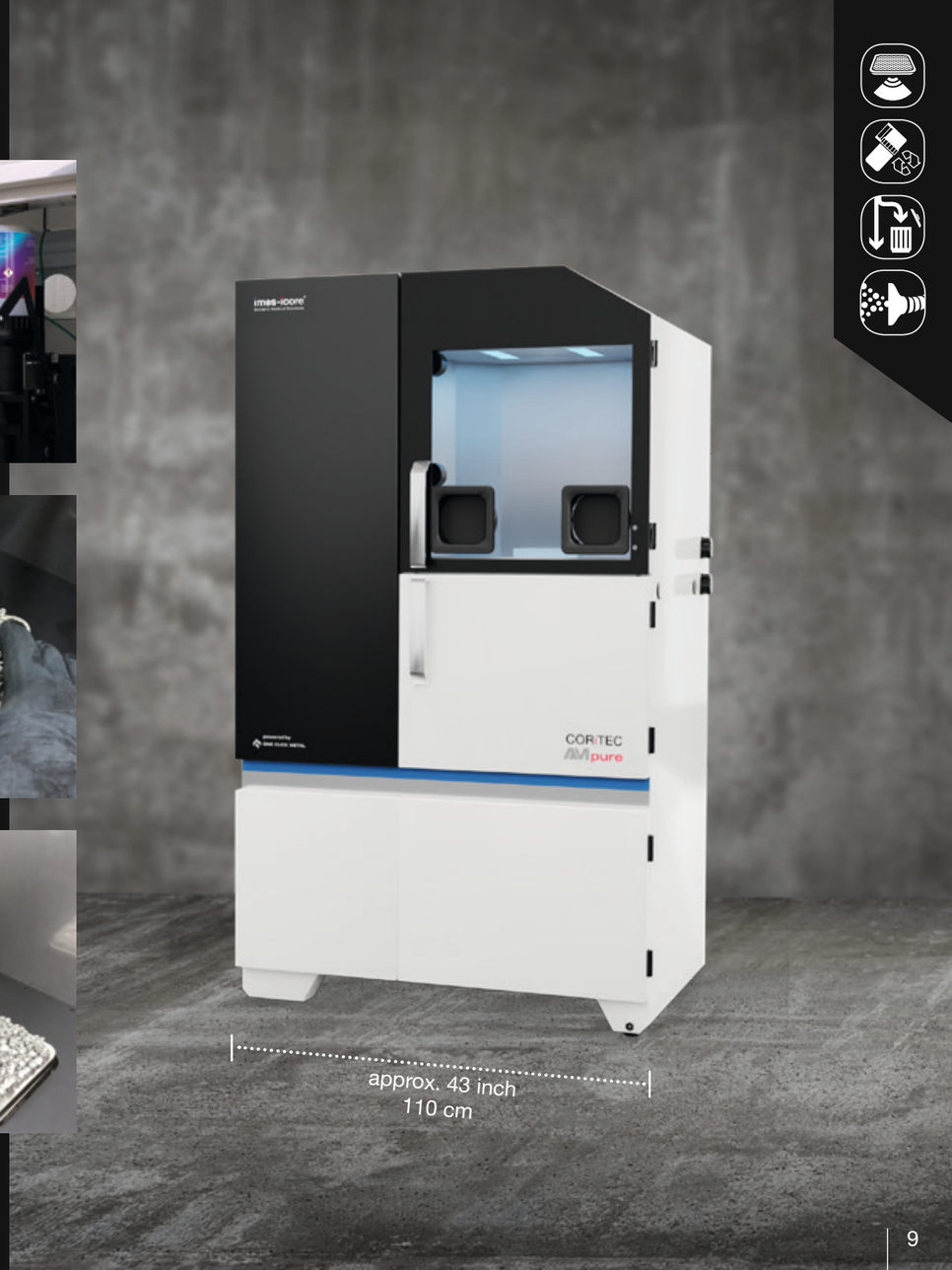


CORiTEC® AMpure

THE PERFECT SUPPLEMENT! SUSTAINABILITY AND CLEANLINESS IN ONE SYSTEM

The 2in1 unpacking station – unpacking and sieving – with integrated connection for vacuum cleaner offers the perfect synergy between the Laser-Powder-Bed-Fusion printing process and the subsequent cleaning of the components without powder contact. During cleaning, the excess powder is collected in an overflow cartridge and then processed in the ultrasonic sieve station. Thus, the prepared powder can be reused for the next printing process! The innovative cartridge system offers safe and easy handling operation, and therefore enables massive material savings.

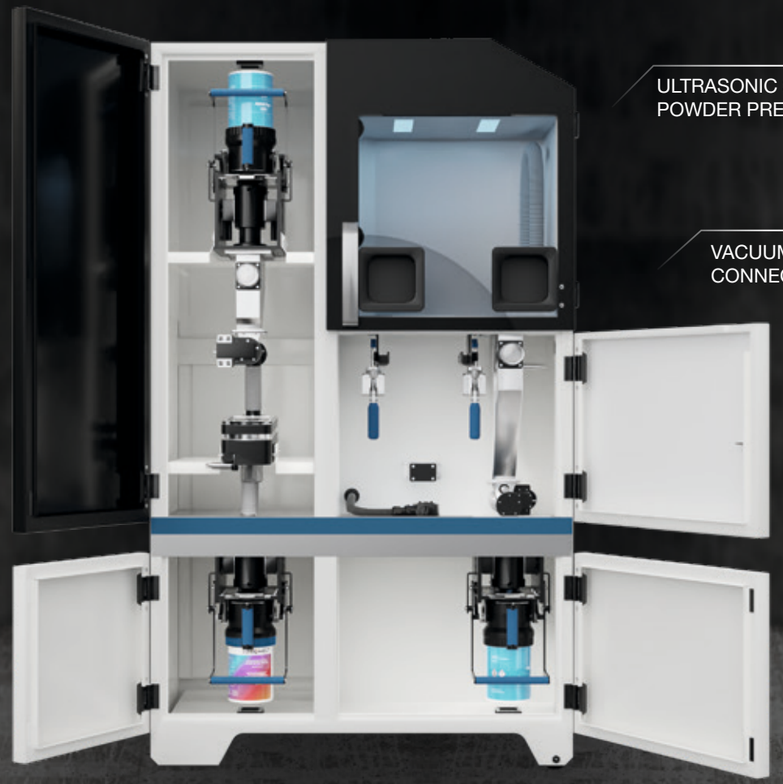




CORiTEC® AM pure

HIGHLIGHTS

- Glove intervention for unpacking the components with minimum direct powder contact
- Powder preparation by intelligent ultrasonic sieving station
- Massive material savings by recycling the sieved powder
- Innovative powder management including compatible overflow and supply cartridges
- Easy disposal of the overflow powder through a separated collection container
- Connection for the external suction system



CORiTEC® AM STARTERKIT

PERFECTLY EQUIPPED - GET STARTED RIGHT AWAY!

Professional start! Thanks to the comprehensive starter kit, your 3D- print production is ready for immediate use in just a few steps. It contains all the necessary components and offers the option of using both machines separately. The expansion option, which includes an additional add-on module and two additional empty supply cartridges, enables the CORiTEC AM series to operate non-stop! While the first job in the CORiTEC AMpure is unpacked and cleaned, a new job with a second build module can be started directly in CORiTEC AM100.

- Training for the CORiTEC manufacturing workflow
- Tried and tested parameters designed for your manufacturing
- Remote access to the HMI
- Personal protective equipment as well as required tools
- Set of 5 supply interfaces
- Set of 2 overflow interfaces
- Set of 2 overflow containers
- 5-pack cartridge set with CoCr powder
- 10-pack of coater medium
- 2 x 3-pack substrate plate
- Bayonet lock
- Electric lifting device incl. construction module fork*

*contained in the CoCr starter kit with lifter

Powder material

i-PROMELT

PERFECTLY MATCHED TO THE CORiTEC AM SERIES

In addition to software and hardware, the material in particular is of great importance for production success. The i-ProMelt powder is a certified and quality-tested powder for the CORiTEC AM100 and its parameters to set up dental applications.

Supplied ready to start in the proven form – the powder container also serves as a supply container in the machine – the material can be fed directly into the process, without cumbersome filling of cylinders or building chambers of the machines. The powder has excellent process and flow properties and, with a particle size distribution of 10 – 30 µm for optimum surface quality.

Highly complex frameworks can be built with i-ProMelt! Thus, i-ProMelt forms the perfect basis for a variety of veneering ceramics and composite build-ups, such as model casting.

HIGHLIGHTS

- A particle size distribution of 10 – 30 µm
- Excellent processing properties
- Due to the type 5 alloy according to DIN EN ISO22674 perfectly suitable for highly complex frameworks, such as superstructures, model castings, primary and secondary parts as well as crowns and bridges
- Perfect base for a wide range of veneering ceramics due to a CTE value of 14.5 (20 – 500 °C)
- Optimum handling of the powder material due to suitable containers for the CORiTEC AM cartridge system (VPE 5 kg)

i-PRODENS

Powder management

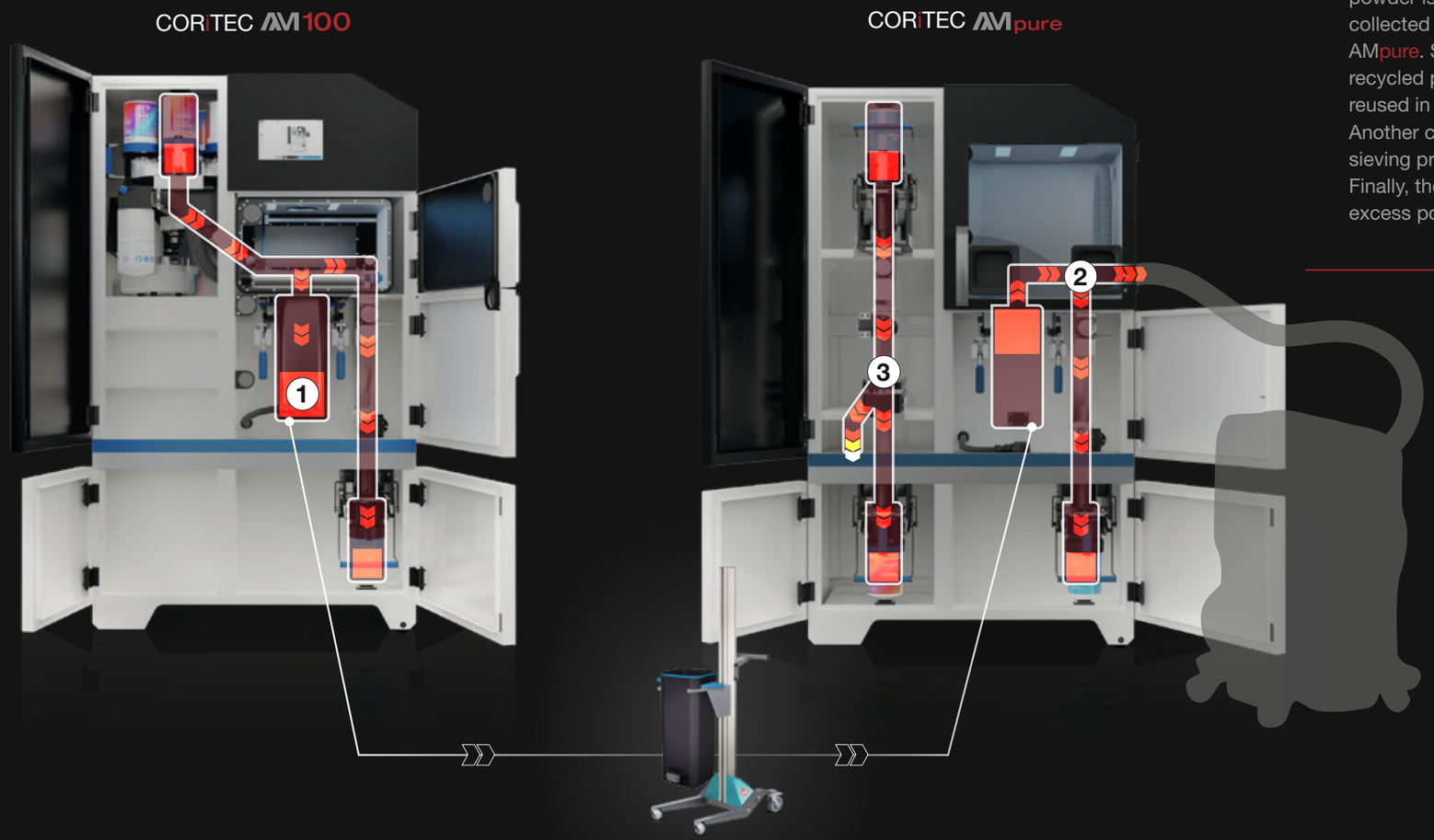
SUSTAINABLE PRODUCTION IN JUST A FEW STEPS

① Printing process

The powder is added from the supply cartridge. The overflowing powder is collected in the overflow cartridge. Subsequently, the building module is transported to the CORiTEC AMpure by means of a lifting device for unpacking.

② Unpacking process

The overflow powder is collected in the CORiTEC AMpure. The disposal of the remaining overflow powder takes away by means of suction, so that the empty construction module is ready for the next print job in the CORiTEC AM100.



③ Sieving process

For sieving preparation, a cartridge change takes place between both machines. The powder is now sieved and collected by the CORiTEC AMpure. Subsequently, the recycled powder is ready to be reused in the CORiTEC AM100. Another cartridge change and sieving process is now completed. Finally, the proper disposal of the excess powder will be carried out.

Scan it to see the video!

Machine software

JUST A FEW STEPS TOWARDS A SUCCESSFUL START

The control software enables absolutely intuitive operation of the CORiTEC AM100 3D metal printer. The handling is self-explanatory and allows a quick start in dealing with the machine. Take advantage of the saved time for your workflow and start with just a few clicks.

FEATURES

- Six steps to start processing the CORiTEC AM100
- Simplest operation due to intuitive graphical user interface
- Consistent structure of the software interface in every processing step
- Web-based access enables process monitoring from everywhere

OVERVIEW
General overview

1. BUILD JOB
   Select construction job
2. BUILD MODULE
   Prepare construction module
3. POWDER SUPPLY
   Check powder supply
4. OVERFLOW POWDER
   Check overflow powder
5. MAINTENANCE
   Check machine
6. FIRST LAYER
   Apply first layer

START BUTTON
Start construction job

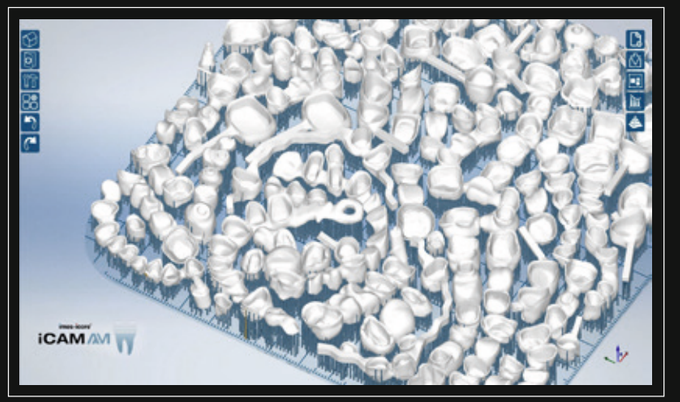
CAM/Slicing Software iCAM AM

THE SMART HIGH-END SOLUTION

The iCAM AM laser software – based on state-of-the-art software architecture in Windows environment – is the software solution for fast print job preparation perfectly matched to the CORiTEC AM100. All features and automatisms required for the manufacturing process of the components are included in iCAM AM.

FEATURES

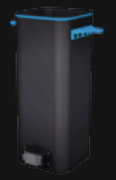
- Modern intuitive user interface
- Part analysis and repair through integrated MeshFixer
- Fast platform preparation through drag & drop and automatic or manual part nesting
- Flexible part editing through automatic or manual alignment, scaling and copying
- Automatic detection of critical areas incl. repair through support structures support
- Perfect hatching parameters for the validated powder i-ProMelt



30 DAYS TESTING
Test installation of the full version possible

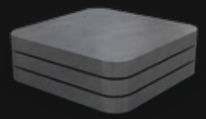
Consumables & Accessories

Building module



- Building volume: 150 x 150 x 150 mm
- Integrated connection for the build platform and atmosphere balancing process
- Fixed substrate plate by means of bayonet fitting

Substrate Plate | 2x 3-pack



- Dimensions: 152 x 30 x 152 mm (W x H x D).
- Provides the perfect base for welding the component
- Avoidance of distortion as well as optimal heat dissipation

Replacement cartridges for supply & overflow

- Ergonomic handling with max. 11 kg filling quantity
- Integrated NFC tag (no batch mixing possible*, quality assurance of the powder, automatic closing cycle detection, fill level query)

Main filter | 6-pack

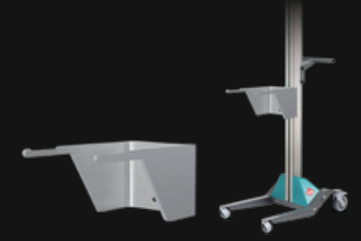
- Dimensions: 135 x 235 x 135 mm
- Optimal filtering of the welding fumes for reuse of the gas

PSA package for one person

- Personal protective equipment
- 1 x powder gown | 1 x safety goggles | 5 x disposable respirator mask | 1 x pack of rubber gloves (L)

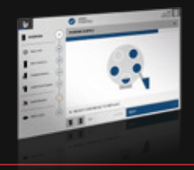
*In preparation | **Advanced version is chargeable

Electric lift incl. construction module fork



- Uncomplicated transport of the building module with a lifting speed of 100 mm/s (with load) with a load capacity of 80 kg
- Ergonomic due to adjustable handles

Remote control and monitoring software



- Free software**
- Status monitoring of machine and job parameters

i-ProMelt powder package

- Powder content per storage container: 5 kg
- Low annual machine utilization: 5-pack (recommended)
- High annual machine utilization: 10-pack (recommended)

i-PRODENS

Suction system

Current type	220 – 240 V/50 – 60 Hz
Air flow	61 l/s
Vacuum	220 mbar / 22 kPa
Container content	75 l
Rated input power	1000 W
Standard nominal size	DN 40
Weight without accessories	27,8 kg
Weight incl. packaging	33,2 kg
Dimensions (W × D × H)	640 x 540 x 925 mm

Further accessory equipment,...

...such as annealing furnace, nitrogen system and metal band saw can be requested via imes-icore.

The hybrid process

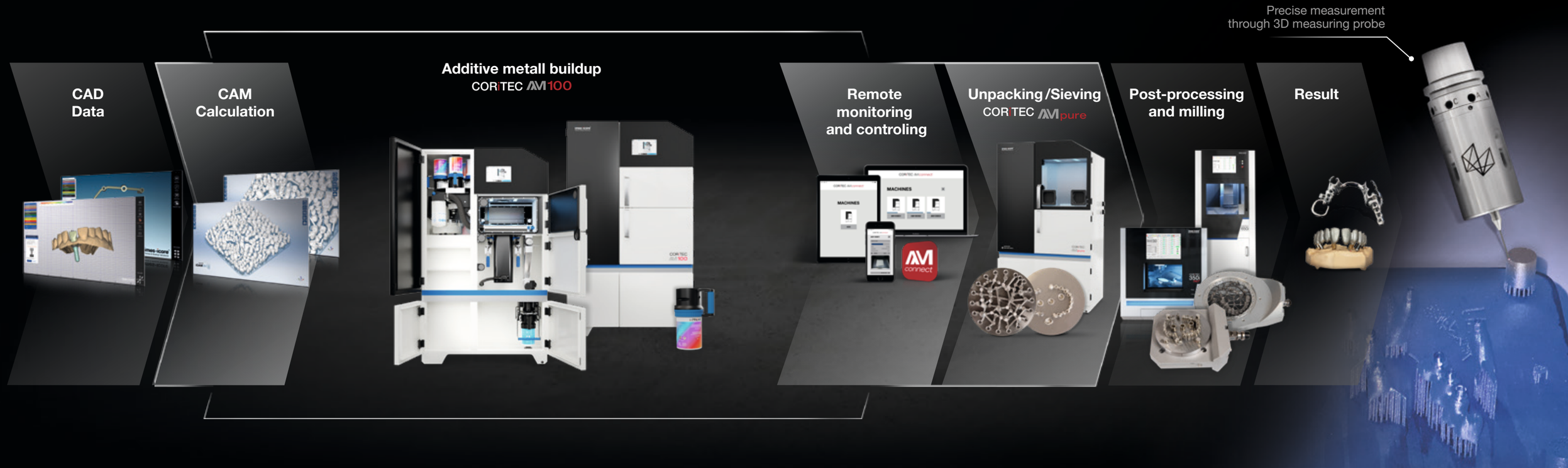
...FOR WORKFLOW-BASED 3D METAL PRINTING

In combination with the 350i and 650i series of CORiTEC milling systems, new standards in hybrid technology for high-quality dental restorations are set by the re-milling of LPBF units. Coordinated hardware and software interfaces as well as automated measuring functions via the CAM and slicing software guarantee the precise and easy handling. The special process was developed, for instance, to build up highly complex bar constructions in advance in a cost-effective additive process and then to rework the interfaces with the CORiTEC milling machines to the perfect, absolute fit and surface quality. An optimally coordinated system, with a well designed and integrated workflow.

The final processing

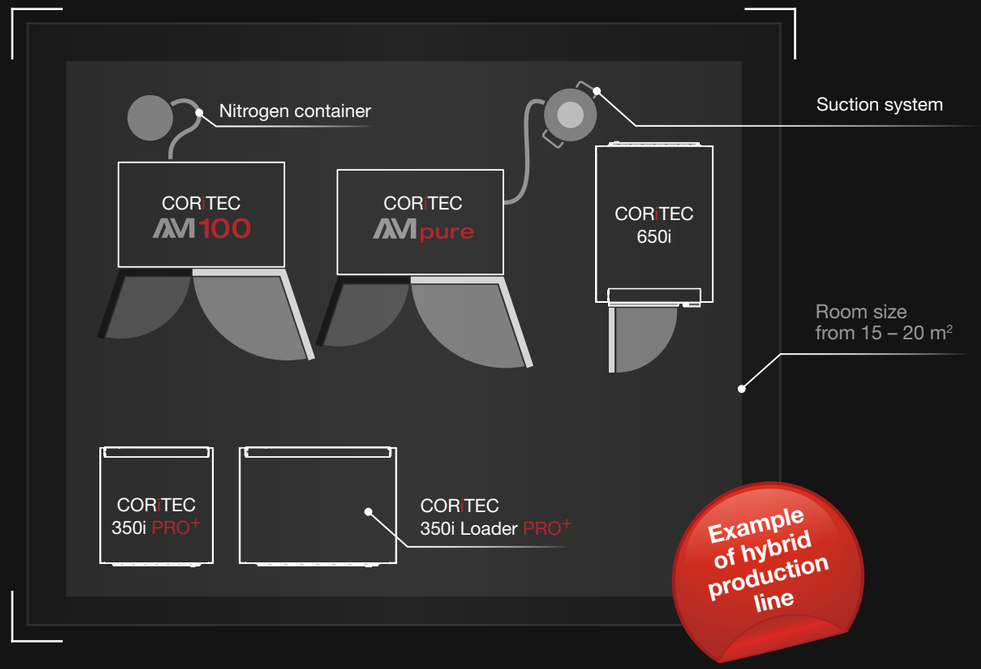
...USING MILLING SYSTEMS OF THE CORiTEC 350i/650i SERIES

Constructions designed in LPBF technology are re-milled to the highest precision by CORiTEC milling machines of the 350i and 650i series. Complex bar constructions can be manufactured in a cost-optimized manner using the additive process, and interfaces can be machined to perfect fit and surface quality by means of the downstream milling process. The subtractive remachining process is implemented in a special workflow and via integrated 3D measurement technology within the CORiTEC 650i. In the CAM software module, the positions of individual works, fastening points, and the fit and interface areas are defined and transferred to the slicing module. Completed constructions are picked up within the machine by means of modified holders. The exact positioning of the LPBF construction plate by a 3D measuring probe is followed by high-precision milling.



Your production line in the smallest spaces

Our systems can be set up in the blink of an eye in rooms as small as 15 to 20 m² and enable smooth and powerful production that can be used effectively. With the milling systems of the CORITEC 350i and 650i series, a complete production line can be created, that is capable of meeting individual requirements and needs. This production targets are achieved more quickly and at the same time enable a diverse portfolio of end products for a wide range of applications.

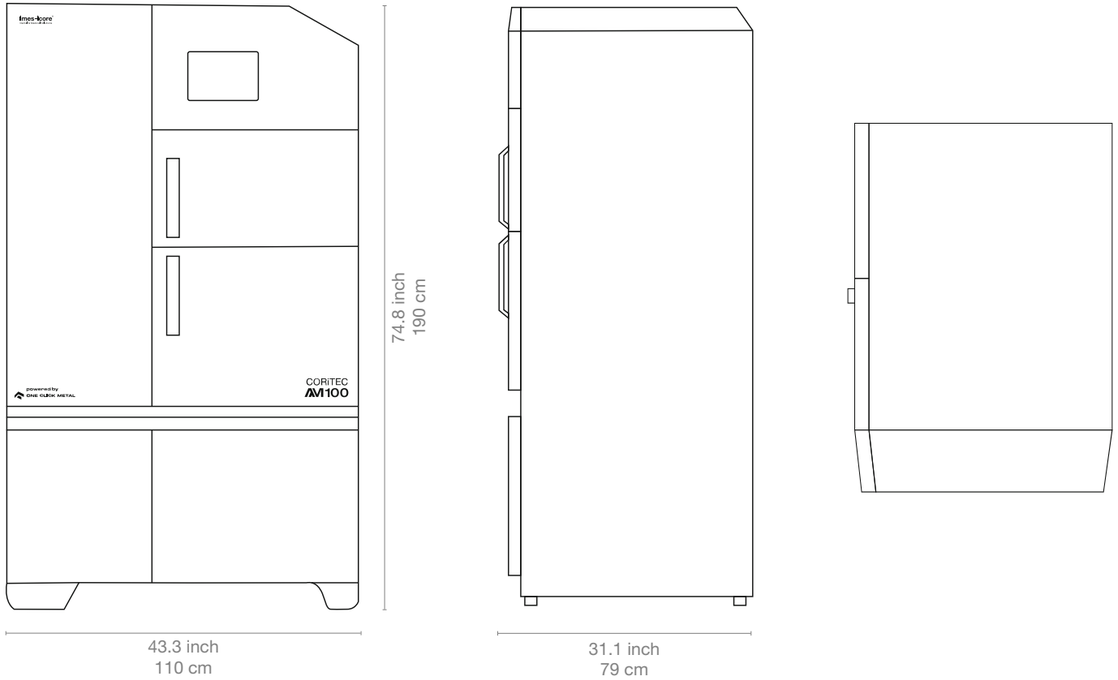


Zircon milling must not be performed in a room with the LPBF process of CoCr.

THE LATEST TECHNOLOGY
suitable for your production center

Dimensions

CORiTEC AM100

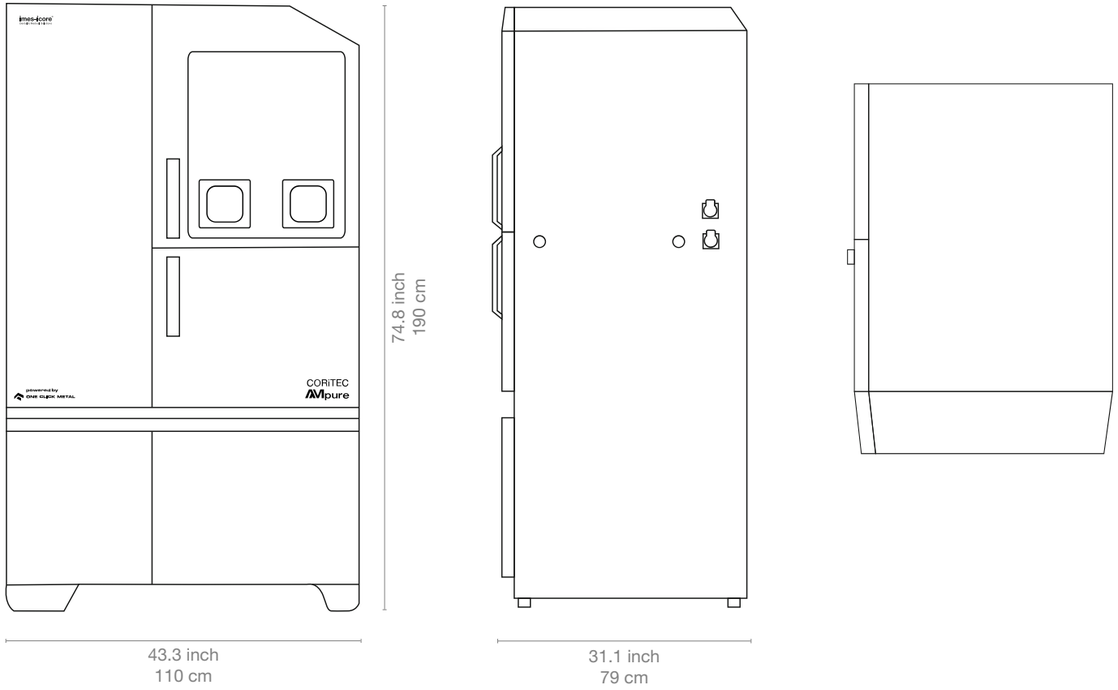


In numbers

	CORiTEC AM100
Process chamber	
Printing method	LPBF (Laser Powder Bed Fusion)
Powder application	X profile
Laser power	200 Watt (Fiber)
Focus diameter	45 µm
Scanning speed	Up to 3000 mm/s
Building module	
Machining volume	5.9 x 5.9 x 5.9 inch / 150 x 150 x 150 mm
Layer height	20 – 80 µm
Powder supply	
Magazine	Up to 5 supply cartridges
Powder quantity	At max. utilization 250 % overdosing of the construction volume
Data preparation	
CAM/Slicing software	iCAM AM
Connection and consumption	
Power supply	230 V / 50 – 60 Hz
Fuse	16 A
Inert gas	Nitrogen
Filter	Replaceable gas filter
Dimensions and weight	
Width x depth x height	4.3 x 31.1 x 74.8 inch / 1100 x 790 x 1900 mm
Weight	440 kg

Dimensions

CORiTEC AMpure



In numbers

	CORiTEC AMpure
Workflow	
Working processes	De-powdering + Sieving = Recycling (2in1 unpacking and sieving station)
Unpacking chamber	
Chamber structure	Glove intervention for unpacking without direct powder contact
Suction system	Integrated connection for external suction system
Material	
Powder	CoCr
Sieving unit for powder recycling	
Sieving process	Ultrasonic sieve
Powder preparation	Reuse through sieved powder in supply cartridge
Residual disposal	Separate for disposal of the oversize powder
Connection and consumption	
Power supply	230 V / 50 – 60 Hz
Fuse	16 A
Dimensions and weight	
Width x depth x height	4.3 x 31.1 x 74.8 inch / 1100 x 790 x 1900 mm
Weight	350 kg

Sales and support partner worldwide

Represented for you in over 100 countries.

imes-icore® GmbH has been a leading manufacturer and technology partner since 2003 in the field of dental CAD/CAM systems and solutions.

With its unique range of dental milling and grinding systems imes-icore® offers a perfect selection for all individual requirements of dental laboratories, milling centres and dental practices of all sizes.

Our “Open-System” product philosophy makes it possible to easily integrate our milling machines into your existing workflow and to integrate them with your open scanners and your CAD/CAM software. We are open for your material selection.

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