

inLab MC X5

Efficient and flexible

[dentsplysirona.com](https://dentsplysirona.com)





## inLab MC X5 – systematic manufacturing versatility

The 5-axis milling and grinding unit inLab MC X5 is a universal machine specially designed for the requirements of dental technology and geared towards economical and effective production. Thanks to coordinated processes and thorough material validations, the unit offers high-quality results for a broad range of indications. The inLab MC X5 machining strategies are coordinated with the materials from Dentsply Sirona and those of well-known material partners – for more flexibility in the production of prosthetic work.

Material partners:



### Wet and dry

inLab MC X5 can be used for wet or dry processing, depending on the material and indication. More than 30 years of experience in the wet processing of glass-ceramics make the machine a professional in the wet milling of fully anatomical restorations made of end-strength monolithic materials. Switching between wet and dry manufacturing, e.g. from glass ceramics to zirconium oxide, is quick and easy.



### Discs and blocks

inLab MC X5 processes standard discs (Ø 98.5 mm, up to 35 mm high) as well as block materials. It takes just a few seconds to switch from discs to blocks. The specially designed multi-block holder can accommodate up to eight blocks of different materials and sizes to enable high productivity even with multiple single-tooth applications.



### Spindle Touch

The Spindle Touch technology of inLab MC X5 captures the workpiece position with utmost precision. This ensures efficient material use and optimal processing of mesostructure blocks as well as pre-manufactured titanium abutment blanks.

# inLab MC X5 material class and tool concept

Depending on the materials to be machined, different tools are used. The cutting geometries and coatings of cutters and diamond grinders are matched to the respective materials and indications to produce outstanding surface and margin results. Coated cutting tools have considerably longer service lives and finer surfaces than uncoated tools.



## inLab MC X5 tool-changing concept

The fully automated tool changer can be fitted with up to six tools per process. The tool magazine can be prepared according to material requirements and is managed via the inLab CAM Software. The intelligent sister tool management optimizes tool life and reduces downtime. The color coding for material classes, which is consistently used on tools, the tool magazine and in the inLab CAM Software, offers additional ease of use and more safety.

## Original diamond-coated cutting tools for zirconium oxide

CAD/CAM-supported zirconium oxide processing requires premium milling results with minimal manufacturing times and long tool lives. High quality is a must for such milling tools. Dentsply Sirona developed the "Bur ZrO<sub>2</sub> DC" diamond-coated zirconium oxide burs for the inLab MC X5 based on extensive user feedback.

- optimized for zirconium oxide material properties
- considerably longer bur service life
- high-quality results throughout tool life

This quality has been proven using our own objective and reproducible test process - particularly in comparison with other manufacturers' burs. Test results clearly show that the original coated ZrO<sub>2</sub> DC bur provide reliable high-quality milling results throughout their tool life and are distinctly superior to other manufacturers' tools at all times. Accordingly, coated Dentsply Sirona burs are the most efficient option for processing zirconium oxide with the inLab MC X5.



## inLab MC X5 suction device

The compact inLab MC X5 suction device with low-maintenance electronics is configured to meet the demands of inLab MC X5. The inLab CAM Software automatically controls the communication between the suction device and the machine (start, stop, filter info, etc.).

## Technical specifications inLab MC X5

General	
Width x height x depth	590 x 810 x 580 mm
Weight	87 kg
Required compressed air pressure	min. 7 bar
Required compressed air volume	min. 50 l/min*
Noise level	<63dba
Kinematics	
Axes	5
Setting angle for A axis	360°
Setting angle for B axis	+/-30°
Material shapes	
Blocks	40 x 19 x 12 mm
Max. number of blocks per process	8
Discs (shape)	98/98.5 mm with collar
Discs (thickness)	up to 35 mm
Open material choice	yes

Tool management	
Automatic tool change	yes
Max. number of tools per process	6
Changeable tool magazines controlled in software	yes
Material types	
Zirconium oxide	x
PMMA	x
Wax	x
Composite	x
Hybrid ceramics	x
Glass ceramics	x
Lithium disilicate ceramics	x
CoCr pre-sintered	x
Titanium preforms	x

### Diamond coated burs for zirconium oxide



Bur 0.5 ZrO<sub>2</sub> DC



Bur 1.0 ZrO<sub>2</sub> DC



Bur 2.5 ZrO<sub>2</sub> DC

### Diamonds for grinding process



Diamond 0.6



Diamond 1.2



Diamond 1.4



Diamond 2.2

### Burs for PMMA, wax, PEEK



Bur 0.5 PMMA



Bur 1.0 PMMA



Bur 2.5 PMMA

### Burs for composites



Bur 0.5 Composite



Bur 1.0 Composite



Bur 2.5 Composite

### Burs for sintering metal



Bur 0.5 Sintering Metal



Bur 1.0 Sintering Metal



Bur 2.5 Sintering Metal

### Burs for titanium



Bur 1.0 Metal



Bur 2.0 Metal

## Manufacturing preparation with inLab CAM Software

The inLab CAM Software was specifically developed for use with Dentsply Sirona CAD/CAM manufacturing units. Thanks to the highly user-friendly interface, all necessary work steps, system configurations and integrated service functions can be carried out quickly and easily. Special manufacturing demands can be met with individualized settings. Additionally, the software offers a valuable documentation tool for the quality management, with all essential information on job history, finished elements, and materials.

The inLab CAM Software's intelligent query system guides the user through a logical work process based on the chosen restoration type, regardless of the CAD data type.

### CAM Service

The database provides central management and storage of production data for Dentsply Sirona production units connected to the local network. This allows for improved data that's up to date and more secure when data processing.

### Seamless integration

The data transfer from the inLab CAD Software takes place automatically. All data concerning order details, design parameters, material selection and machine type specifications are automatically transferred within the CAM Software, eliminating the time-consuming need for repeated data entry.

### Validated and open

The inLab CAM Software is open to the import of restoration data from other CAD software and offers the option of importing not only the open .stl and .3ox (3Shape®) data but also data from exocad® via a validated .constructioninfo interface. All readable metadata are then utilized to make the manufacturing process as convenient as possible.



# inLab CAM Software

## Everything at a glance

For parallel creation of multiple orders: The inLab CAM Software offers efficiency and delegation options when preparing upcoming manufacturing orders. Job lists can be generated during ongoing milling processes, to be started at a later time. In addition, several machines can grind, mill, or print simultaneously (e.g. inLab MC X5, inLab MC XL, CEREC Primemill or Primeprint Solution).

### Item list

The item list displays all designs which are ready for production.

### Blank / Material list

The blank list displays all available materials for production. Intelligent filters are applied depending on the design to be produced.

### Phase bar

The phase bar of the inLab CAM Software provides clear, step-by-step guidance through the workflow for a dependable manufacturing process.

### A Archive

The archive contains the production history of all designs as well as the used up blanks which are visible and traceable.

### B Blank management

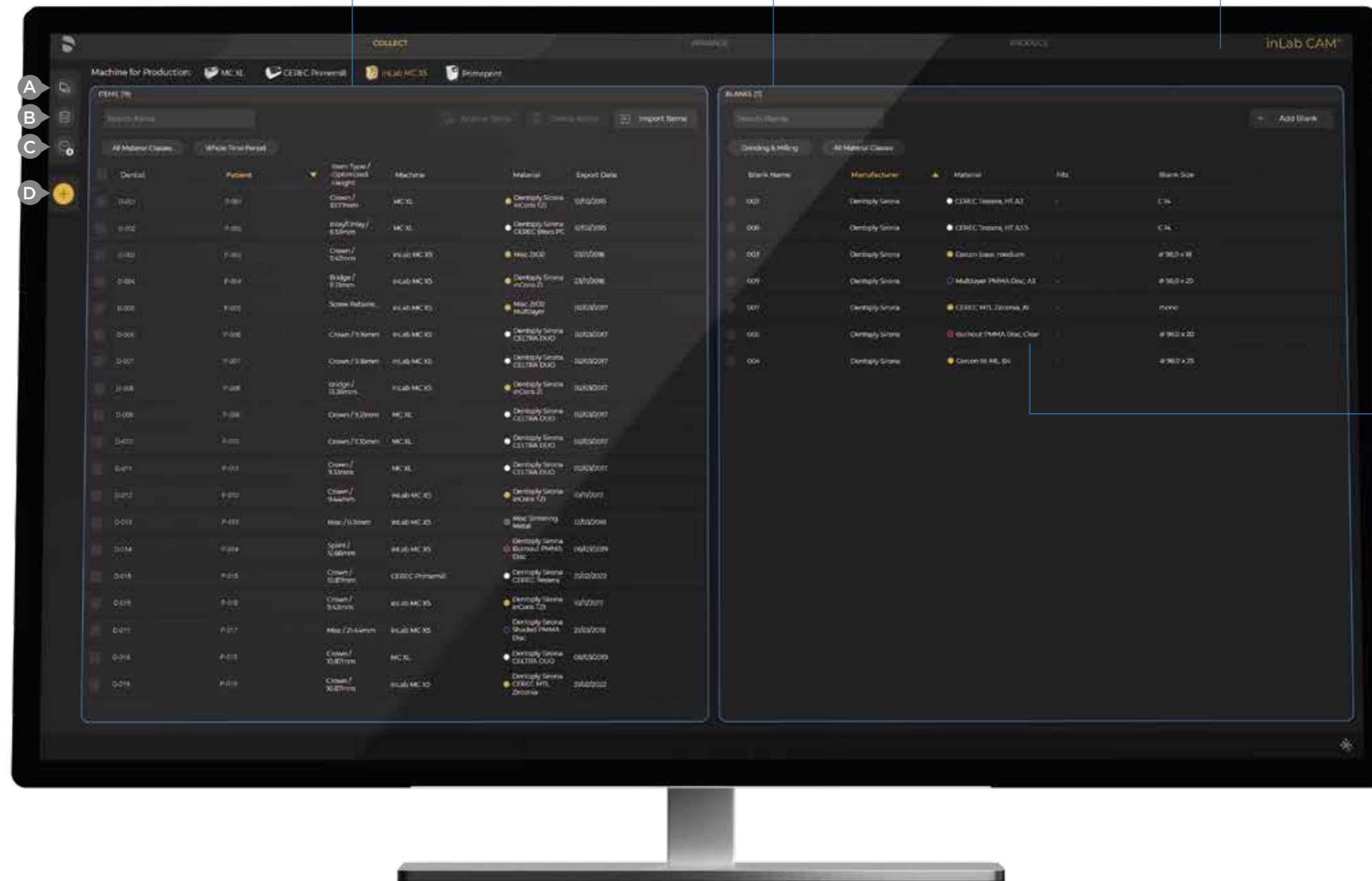
The blank management provides an overview of the blanks which are available for production. New blanks can be added, used blanks can be archived.

### C Active Jobs

The "Active Job" page provides an overview of all production jobs that have been created, prepared, or are currently being processed.

### D New Job

The "New Job" page is the starting point to create a new production job and displays the designs to be produced as well as the available materials which then can be combined to a new production job.



### Reading QR codes

A webcam offers the option to scan the QR code of Dentsply Sirona discs\*. All material specifications such as disc name, color, thickness, lot number, shrinkage value and more are automatically transferred to the workpiece overview. Discs that have already been milled are traceable in the software by means of QR code. This avoids data entry errors and provides you with an optimal overview of the available round disc inventory at all times.

### Integrated material class identification

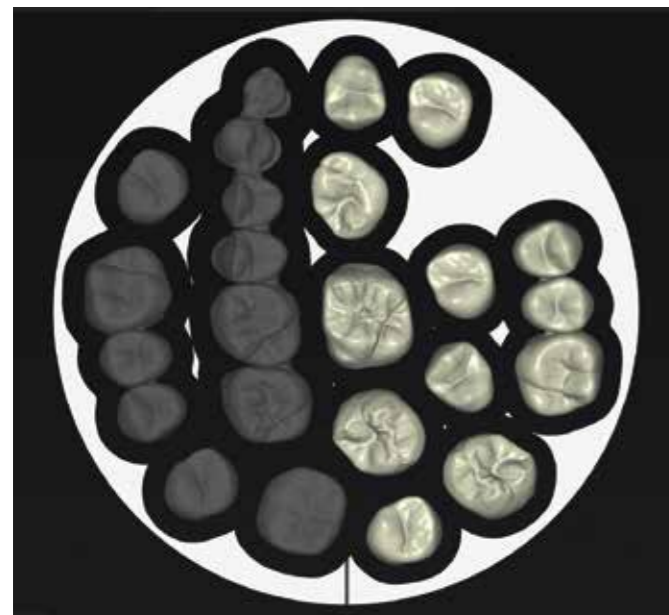
\* Applicable for Cercon zirconia discs. This function is only available when a webcam is connected to the computer system.

## Smart positioning in the blank

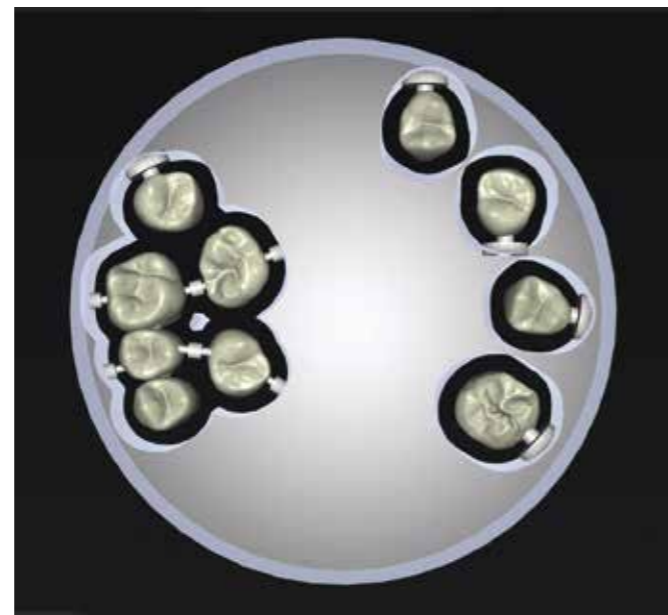
For efficient material use and excellent preparation, the inLab CAM Software positions the restoration in the blank according to the respective specifications. Objects that have already been positioned or prepared are taken into account. Users can make adjustments without restrictions in the individual arrangement - for maximum flexibility and according to individual requirements.



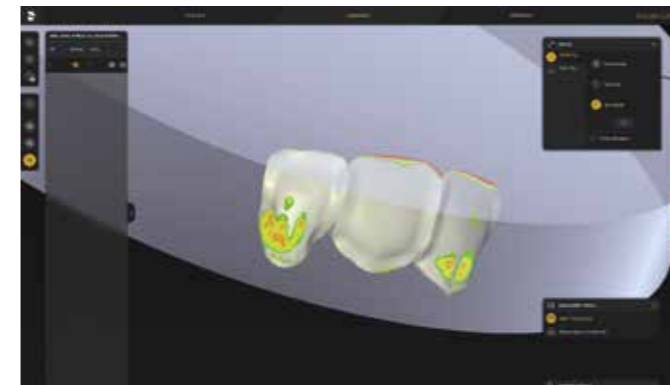
Fully loaded workpiece with efficient material use.



The blank status is considered during positioning. The restoration is positioned to ensure dependable manufacturing.



For high material efficiency, objects can be nested together or positioned in separate nests for a high level of safety and flexibility. Objects are simply "dragged" to change the nest type.



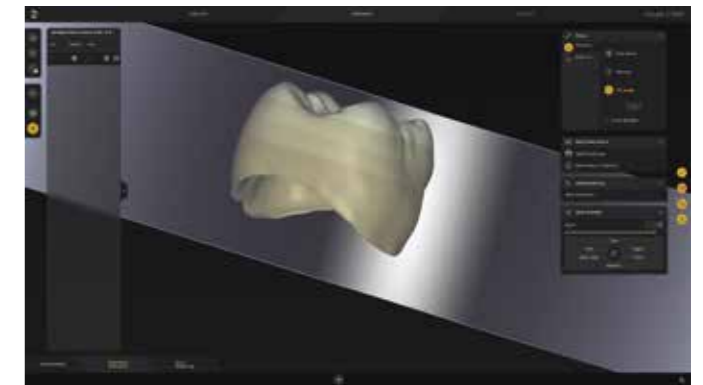
### Inspecting wall thickness

To ensure a high level of quality outcome and process reliability for input data in .xml or .stl format, the wall thicknesses of an object can be checked in a virtual model before machining. The system also displays the respective wall thicknesses for any point.



### Positioning the sprue

The sprue positions are initially placed at the object's equator and can be individually positioned.



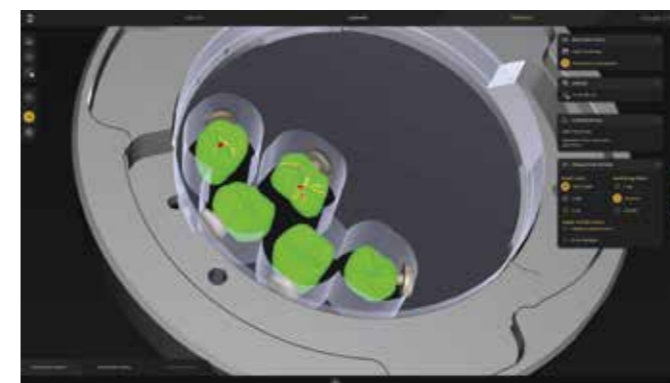
### Horizontal positioning

For optimal positioning within the workpiece (e.g. with multi-layer materials such as Cercon xt ML) the object can manually be shifted and rotated in all directions.



### Adjusting the sprue

The sprue positions can be defined differently for individual demands: "Standard", "Thinned", "Wide Thinned", and "Cut."



### Level of detail

The detail level can be set to three different stages (very high/high/low) and determines which tools are to be used during the milling process.

Setting the work mode (fast/rough/smooth) defines the process time and influences the surface texture of the restoration. The production result can be simulated.



### Documentation security

The PDF archiving function provides traceable documentation of restorations and orders manufactured from a workpiece, including details of material name and class, manufacturer, lot number, and enlargement factors. It supports the fulfillment of modern quality management requirements.

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