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inEos X5

Operating Instructions

English



Table of contents

1	Dear Customer,	5
2	General data	6
2.1	Contact information	6
2.2	Structure of the document.....	6
2.2.1	Identification of danger levels	6
2.2.2	Formats and symbols used	7
2.3	Legend	7
3	Safety	9
3.1	Basic safety information	9
3.1.1	Prerequisites	9
3.1.2	Connecting the unit	9
3.1.3	Connection of external equipment	9
3.1.4	Maintenance and repair	9
3.1.5	Modifications to the product	10
3.1.6	Accessories.....	10
3.1.7	In case of damage	10
3.2	Blue light radiation (UV)	11
3.3	To be taken into account during automatic operation	12
3.4	Intended use.....	12
4	Technical description	13
4.1	Design and function.....	13
4.2	System components.....	13
4.2.1	Components of the inEos X5	13
4.3	Technical data	15
4.4	Certification	16
4.5	System requirements	16
4.6	Electromagnetic compatibility.....	16
4.6.1	Electromagnetic emission	17
4.6.2	Immunity to interference	18
4.6.3	Working clearances	20
5	Transport to the installation site	21
5.1	Transport and unpacking.....	21
5.2	Installation site.....	22

6	Initial startup	23
6.1	Putting inLab PC into operation.....	23
6.1.1	Startup prerequisites.....	23
6.1.1.1	Required accessories.....	23
6.1.1.2	Making connections.....	24
6.1.2	Safety.....	25
6.1.3	Possible sources of error.....	25
6.2	Installing the software.....	26
6.3	Connecting the unit.....	27
6.3.1	Connecting the unit to the PC.....	27
6.3.2	Connecting the unit to the power supply.....	27
6.3.3	Connecting the foot switch (optional).....	27
6.3.4	Switching the unit on and starting the software.....	28
6.4	Calibrating the motor arm.....	28
6.5	Calibrating the inEos X5 camera.....	29
6.6	Updating the firmware.....	30
7	Controls and displays	31
7.1	Controls on the inEos X5.....	31
7.2	Operating state LED.....	32
8	Switching the system on	33
9	Performing 3D acquisition	34
9.1	General.....	34
9.1.1	Description of the SCAN phase.....	34
9.1.1.1	Complete overview of SCAN phase.....	34
9.1.1.2	Object list.....	35
9.1.1.3	Step menu.....	37
9.1.1.4	Help texts and help images.....	37
9.1.2	Acquisition methods.....	38
9.1.3	Scan modes.....	39
9.1.4	Scan models and impressions.....	40
9.1.5	Autofocus.....	40
9.1.6	Operation via foot switch.....	40
9.2	Automatic jaw scan.....	41
9.2.1	Preparing the optical impression.....	41
9.2.2	Taking the scan.....	42
9.2.3	Guideline editor.....	43
9.2.4	Starting the automatic detail scan.....	43

9.3	Free scans.....	44
9.3.1	Preparing the optical impression.....	44
9.3.2	Automatic and manual release in the "free scan" mode	45
9.3.3	Taking a free scan (without previous automatic scans).....	46
9.3.4	Taking a free detail scan.....	46
9.4	Rotational scans.....	47
9.4.1	Preparing the optical impression.....	48
9.4.2	Taking a rotational scan.....	48
9.5	Acquiring an occlusal bite registration.....	49
9.6	Example applications	50
9.6.1	Scanning a crown preparation	50
9.6.2	Scanning an impression.....	52
9.6.3	Importing an STL file.....	53
9.6.4	Scanbody scans for scanning with inPost and ATLANTIS-FLO-S scanbodies.....	53
9.6.5	Scanning an occlusal rim	54
9.6.5.1	Importing an occlusal rim.....	56
9.6.6	Scanning a triple tray	57
10	Regular function test of the light barrier and the Start key	58
11	Cleaning and care	60
11.1	Cleaning the outer surface	60
11.2	Protection against medicaments	60
11.3	Cleaning the optics.....	60
12	Accessories	61
12.1	Using the articulator plate.....	62
12.2	Using clamping jaws.....	62
12.3	Using the prosthesis holder.....	63
13	Disposal.....	64

1 Dear Customer,

Thank you for purchasing your inEos X5[®] from Sirona.

Improper use and handling can create hazards and cause damage.
Please read and follow these operating instructions carefully and
Always keep them within easy reach.

To prevent personal injury or material damage, it is important to observe
all safety information.

Your
inEos X5 team,

2 General data

Please read this document completely and follow the instructions exactly. You should always keep it within reach.

Original language of the present document: German.

2.1 Contact information

Dentsply Sirona Product service

Log in to register your units and make service requests:
<https://dentsplysirona.service-pacemaker.com/>

Manufacturer's address



Sirona Dental Systems GmbH
Fabrikstrasse 31
64625 Bensheim
Germany

Tel.: +49 (0) 6251/16-0
Fax: +49 (0) 6251/16-2591
E-Mail: contact@dentsplysirona.com
www.dentsplysirona.com

2.2 Structure of the document

2.2.1 Identification of danger levels

To prevent personal injury and material damage, please observe the warning and safety information provided in these operating instructions. Such information is highlighted as follows:

DANGER

An imminent danger that could result in serious bodily injury or death.

WARNING

A possibly dangerous situation that could result in serious bodily injury or death.

CAUTION

A possibly dangerous situation that could result in minor or moderate bodily injury.

NOTICE

A possibly harmful situation which could lead to damage of the product or an object in its environment.

IMPORTANT

Application instructions and other important information.

Tip: Information on making work easier.

2.2.2 Formats and symbols used

The formats and symbols used in this document have the following meaning:

<ul style="list-style-type: none"> ✓ Prerequisite 1. First action step 2. Second action step or ➤ Alternative action ↔ Result ➤ Individual action step 	Identifies an action sequence with prompt and result.
see "Formats and symbols used [→ 7]"	Identifies a reference to another text passage and specifies its page number.
• List	Identifies a list.
"Command / menu item"	Identifies commands, menu items or a quote.

2.3 Legend



Year of manufacture

Safety symbols



"Warning of optical radiation" symbol

Warning of injuries to eyes and skin in the vicinity of optical radiation.



"Warning of hand injuries" symbol

Warning of hand injuries in the vicinity of devices with closing mechanical parts.



Observe accompanying documents

Symbols on the packaging

Take note of the following symbols on the packaging:



Up



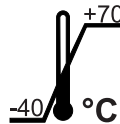
Keep dry



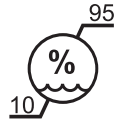
Fragile; handle with care



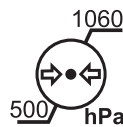
Stack limit



Temperature during storage and transport



Relative humidity during storage and transport



Air pressure during storage and transport

3 Safety

3.1 Basic safety information

3.1.1 Prerequisites

NOTICE

Important information on building installation

The building installation must be performed by a qualified expert in compliance with the national regulations. DIN VDE 0100-710 applies in Germany.

NOTICE

Restrictions regarding installation site

The system is not intended for operation in areas subject to explosion hazards.

NOTICE

Do not damage the unit!

The unit can be damaged if opened improperly.
It is expressly prohibited to open the unit with tools!

3.1.2 Connecting the unit

Perform connection by following the directions given in the present operating instructions.

3.1.3 Connection of external equipment

If any devices not approved by Sirona are connected, they must comply with the applicable standards:

- EN IEC 62368-1 for information technology equipment
- EN 61 010-1 for laboratory equipment.

3.1.4 Maintenance and repair

- The maintenance and repair of this unit may be performed only by Dentsply Sirona or by agencies authorized by Dentsply Sirona.
- Components which have failed and influence the safety of the unit must be replaced with original (OEM) spare parts.
- Only original cables may be used, so that EMC requirements are met.

Please request a certificate whenever you have such work performed. It should include:

- The type and scope of work.
- Any changes made in the rated parameters or working range.
- Date, name of company and signature.

3.1.5 Modifications to the product

Modifications to this product which may affect the safety of the operator, patients or third parties are prohibited by law!

3.1.6 Accessories

In order to ensure product safety, this device may be operated only with original Dentsply Sirona accessories or third-party accessories expressly approved by Dentsply Sirona. In particular, only the power cable also supplied or the corresponding original spare part may be used with the unit. The user is responsible for any damage resulting from the use of non-approved accessories.

3.1.7 In case of damage

In case of noticeable malfunctions or damage, stop using the instrument immediately and notify your authorized dealer or the manufacturer.

3.2 Blue light radiation (UV)



A	Lamp
---	------

WARNING

Potentially hazardous optical radiation

Do not look directly at the lamp during operation, as eye damage can result.

NOTICE

No reflective objects in the working area

Do not bring any reflective objects into the working area of the lamp.

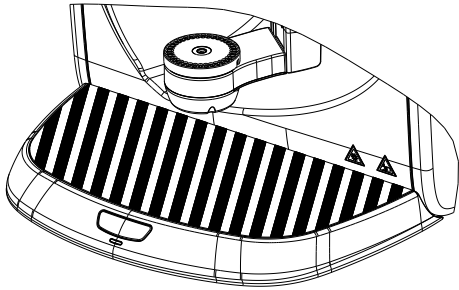
WARNING

Risk of injury for those diagnosed with epilepsy

For persons who have been diagnosed with epilepsy, there is a risk of epileptic shock through the flashing light of the inEos X5.

- Patients who have been diagnosed with epilepsy must not work with the inEos X5.

3.3 To be taken into account during automatic operation



⚠ CAUTION

Risk of injury! / collision hazard!

During automatic operation there is a risk of injury/collision hazard as a result of the swiveling movement of the articulated arm.

- Ensure that there are no objects and/or body parts on the work plate (shaded area) during automatic operation.

3.4 Intended use

This system is used for 3D digitization of single tooth or complete jaw models and impressions.

This unit must not be used for any other purpose. If the unit is used for any purpose other than the one mentioned above, it may be damaged.

Intended use also includes compliance with these Operating Instructions and the relevant maintenance instructions.

⚠ CAUTION

Follow the instructions

If the instructions for operating the unit described in this document are not observed, the intended protection of the user may be impaired.

4 Technical description

4.1 Design and function

The inEos X5 is designed as a desktop unit and consists of several components (see Chapter "System components [-> 13]"). It is powered from the standard local power network via an external power supply unit.

The unit is connected to a PC via a USB port. The PC must fulfill the minimum requirements (see Chapter on "System requirements").

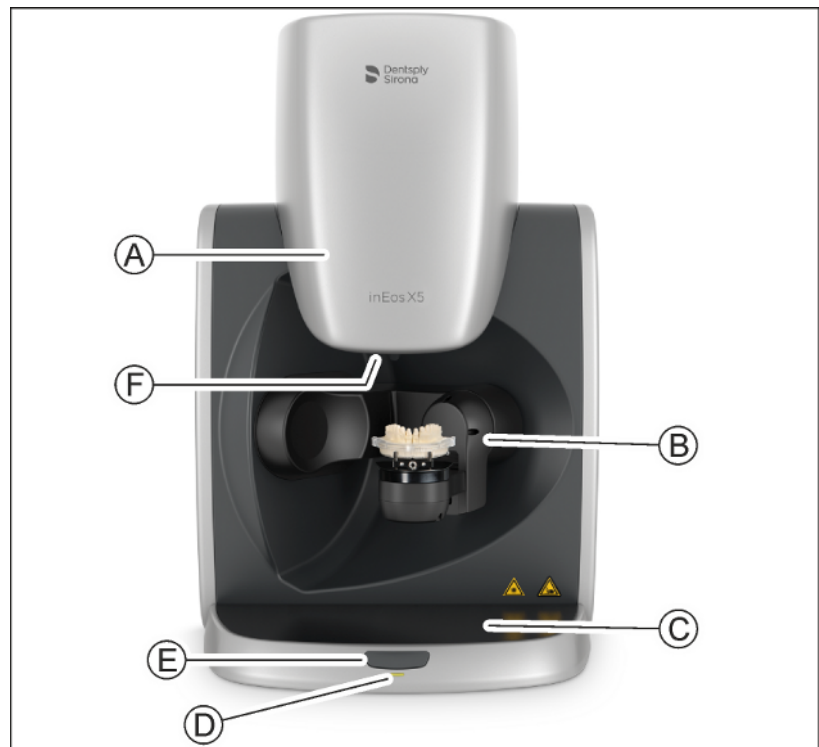
The PC serves both for controlling the inEos X5 and for displaying the captured images by means of the user software.

4.2 System components

"inEos X5" consists of a base plate, a vertical unit and an articulated arm. In addition, various accessories are included in the scope of supply of the unit.

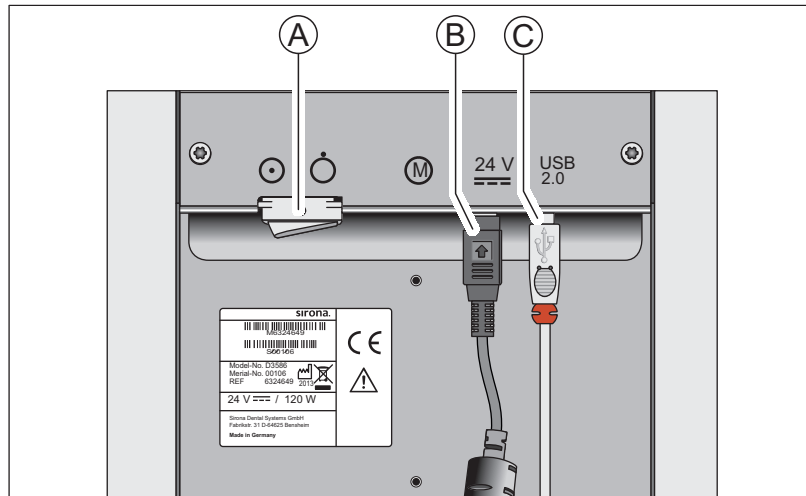
4.2.1 Components of the inEos X5

Front side




- | | | | |
|---|-----------------|---|---------------------------------------|
| A | Vertical unit | D | Ready LED |
| B | Articulated arm | E | Start button |
| C | Base plate | F | Scan element opening,
scan element |

Rear side



- A Main switch
- B Supply voltage input (external power supply unit)
- C USB port

4.3 Technical data

Model designation	inEos X5
Power connection	Via power supply unit: INPUT: 100 - 240 V AC / 47- 63 Hz / 2.0 A max. Permissible line voltage fluctuations: ± 10% of nominal voltage Overvoltage category II OUTPUT: 24 V  / 6.25A max.
Power consumption	150W
Ambient conditions	For indoor use Pollution degree 2 Temperature: 10°C – 35°C (50°F ~ 95°F) Relative humidity: 30% – 75% Air pressure: 700hPa – 1060hPa Operating altitude: ≤ 2000 m
Transport and storage conditions	Temperature -40 °C – +70 °C (-40 °F ~ 158 °F) Relative humidity: 10% – 95% Air pressure: 500hPa – 1060hPa
Dimensions (W x H x D)	
in mm	475 x 740 x 460 mm
in inches	18 ¾ x 29 ½ x 18 ½ in.
Weight	
• without power supply unit and accessories	39.6 kg (87.3 lbs)
Protection class	Class I unit
Degree of protection against ingress of water	Ordinary equipment (not protected)
Operating mode	Continuous operation with intermittent loading corresponding to the laboratory mode of working. Desktop system

Tests/approvals

This unit complies with the following requirements:
DIN EN 61 010-1: 2020 (safety)
DIN EN 61 326-1: 2013 (EMC)
DIN EN ISO 12 100: 2011 (risk management)

4.4 Certification

CE mark



This product bears the CE mark in accordance with the provisions of Council Directive 2006/42/EC (Machinery Directive). As such, the following standards apply: DIN EN ISO 12100:2011-03, DIN EN 61010-1:2020-03 und DIN EN 61326-1:2018-09.

CAUTION

CE mark for connected products

Further products which are connected to this unit must also bear the CE mark. These products must be tested according to the applicable standards.

Examples of CE mark for connected products:

- EN IEC 62368-1:2020
- CAN/CSA C22.2 No. 61010-1-12, UPD1:2015, UPD2:2016, AMD 1:2018

MET mark



RoHS compliance



This symbol indicates that this product does not contain any toxic or hazardous substances or components above the maximum concentration value set out in the Chinese standard SJ / T 11364-2014, and can be recycled following disposal and should not be carelessly discarded.

4.5 System requirements

An **inLab-PC** is required to run this software. The hardware version must be **PC hardware version 5.0.1** or higher.

4.6 Electromagnetic compatibility

Observance of the following information is necessary to ensure safe operation regarding EMC aspects.

inEos X5 complies with the requirements for electromagnetic compatibility (EMC) according to DIN EN 61326-1:2006-10.

inEos X5 is hereinafter referred to as "UNIT".

4.6.1 Electromagnetic emission

The **UNIT** is intended for operation in the electromagnetic environment specified below.

The customer or user of the **UNIT** should make sure that it is used in such an environment.


Emission measurement	Conformity	Electromagnetic environment - guidelines
RF emissions according to CISPR 11	Group 1	The UNIT uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions according to CISPR 11	Class B	The UNIT is intended for use in all facilities, including residential areas and in any facilities connected directly to a public power supply providing electricity to buildings used for residential purposes.
Harmonics according to IEC 61000-3-2	Class A	
Voltage fluctuations / flicker according to IEC 61000-3-3	coincides	

4.6.2 Immunity to interference

The **UNIT** is intended for operation in the electromagnetic environment specified below.

The customer or user of the **UNIT** should make sure that it is used in such an environment.

Interference immunity tests	DIN EN 61326-1 Test level	Compliance level	Electromagnetic environment – guidelines
Electrostatic discharge (ESD) according to IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst according to IEC 61000-4-4	± 1 kV for input and output lines ± 2 kV for power supply lines	± 1 kV for input and output lines ± 2 kV for power supply lines	The quality of the line power supply should be that of a typical commercial or hospital environment.
Surge voltages according to IEC 61000-4-5	± 1 kV differential mode voltage ± 2 kV common mode voltage	± 1 kV differential mode voltage ± 2 kV common mode voltage	The quality of the line power supply should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and variations of the power supply according to IEC 61000-4-11	<5% U_T for ½ period (>95% dip of U_T) 40% U_T for 5 periods (60% dip of U_T) 70% U_T for 25 periods (30% dip of U_T) <5% U_T for 5sec. (>95% dip of U_T)	<5% U_T for ½ period (>95% dip of U_T) 40% U_T for 5 periods (60% dip of U_T) 70% U_T for 25 periods (30% dip of U_T) <5% U_T for 5sec. (>95% dip of U_T)	The quality of the line power supply should be that of a typical commercial or hospital environment. Continued operation of the UNIT is possible following interruptions of the power supply, since the UNIT is powered by an uninterruptible power supply backed up by a storage battery.
Magnetic field of power frequencies (50/60 Hz) according to IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note: U_T is the AC supply voltage prior to application of the test level.			
			Portable and mobile radio equipment must not be used within the recommended working clearance from the UNIT and its cables, which is calculated based on the equation suitable for the relevant transmission frequency. Recommended working clearance:

Interference immunity tests	DIN EN 61326-1 Test level	Compliance level	Electromagnetic environment – guidelines
Conducted RF interference IEC 61000-4-6	3 V _{eff} 150 kHz to 80 MHz	3 V _{eff}	$d = [1.2] \sqrt{P}$
Radiated RF interference IEC 61000-4-3	3 V/m 80 MHz to 800 MHz 3 V/m 800 MHz to 2.5 GHz	3 V/m 3 V/m	$d = [1.2] \sqrt{P}$ at 80 MHz to 800 MHz $d = [2.3] \sqrt{P}$ at 800 MHz to 2.5 MHz where P is the nominal transmitter output in watts (W) specified by the transmitter manufacturer and d is the recommended working clearance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey ¹ should be less than the compliance level ² in each frequency range. Interference is possible in the vicinity of equipment bearing the following graphic symbol. 

Remark 1

The higher frequency range applies at 80 MHz and 800 MHz.

Remark 2

These guidelines may not be applicable in all cases. The propagation of electromagnetic waves is influenced by their absorption and reflection by buildings, objects and persons.

1. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM/FM radio and TV broadcasts, cannot be predicted theoretically with accuracy. An investigation of the location is recommended to determine the electromagnetic environment resulting from stationary RF transmitters. If the measured field strength in the location in which the **UNIT** is used exceeds the applicable RF compliance level specified above, the **UNIT** should be observed to verify normal operation. If unusual performance characteristics are observed, it may be necessary to take additional measures such as reorientation or repositioning of the **UNIT**.
2. Over the frequency range 150kHz to 80 MHz, field strengths should be less than 3 V/m.

4.6.3 Working clearances

Recommended working clearances between portable and mobile RF communication devices and the UNIT

The **UNIT** is intended for operation in an electromagnetic environment, where radiated RF interference is checked. The customer or the user of the **UNIT** can help prevent electromagnetic interference by duly observing the minimum distances between portable and/or mobile RF communication devices (transmitters) and the **UNIT**. These values may vary according to the output power of the relevant communication device as specified below.

Rated maximum output power of transmitter [W]	Working clearance according to transmission frequency [m]		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.5 GHz
	$d = [1.2] \sqrt{P}$	$d = [1.2] \sqrt{P}$	$d = [2,3] \sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters whose maximum nominal output is not specified in the above table, the recommended working clearance d in meters (m) can be determined using the equation in the corresponding column, where P is the maximum nominal output of the transmitter in watts (W) specified by the transmitter manufacturer.

Remark 1

An additional factor of 10/3 is applied when calculating the recommended working clearance between transmitters in the 80 MHz to 2.3 GHz frequency range in order to reduce the probability that a mobile/portable communication device unintentionally brought into the patient area could lead to interference.

Remark 2

These guidelines may not be applicable in all cases. The propagation of electromagnetic waves is influenced by their absorption and reflection by buildings, objects and persons.

5 Transport to the installation site

5.1 Transport and unpacking

All Dentsply Sirona units are carefully checked prior to shipment. Please perform an incoming inspection immediately after delivery.

1. Check the delivery note to ensure that the consignment is complete.
2. Check whether the product shows any visible signs of damage.

NOTICE

Damage during transport

If the product was damaged during transport, please contact your shipping agent.

If return shipment is required, please use the original packaging for shipment.

Transport without packaging

CAUTION

Damage to the unit or risk of injury during transport without packaging

There is a danger of the unit falling down if it is grasped by its plastic housing.

- > The unit should always be carried by two persons.
- > Do not grasp the unit by its plastic housing.
- > Always grasp the unit by its chassis next to its feet.

5.2 Installation site

The unit is designed for desktop use and requires a level footprint of approx. 70 x 60cm for installation.

The unit must not be set up in a wet environment.

No special requirements exist regarding the ventilation at the installation site.

Make sure that suitable operating conditions are given (see section "Technical data [→ 15]").

NOTICE

Install inEos X5 in a protected area

3D image acquisition may be adversely affected by bright light.

Set the inEos X5 up so that it is not located directly in the beam path of an extreme light source and not exposed to direct sunlight.

NOTICE

ON/OFF switch on rear of unit

Set the inEos X5 up so that the ON/OFF switch on the rear of the unit is readily accessible.



CAUTION

Risk of injury

When assembled, fingers must not be inserted beneath the unit.

6 Initial startup

6.1 Putting inLab PC into operation

6.1.1 Startup prerequisites

6.1.1.1 Required accessories

Supplied parts:

- inLab PC with power cable
- Keyboard
- Mouse
- Power cable
- Ethernet cable for connection of the machine with the PC.

Also required:

- PC monitor including corresponding monitor connection cable, such as VGA, DVI, HDMI or display port cable (not included in scope of supply)

⚠ CAUTION

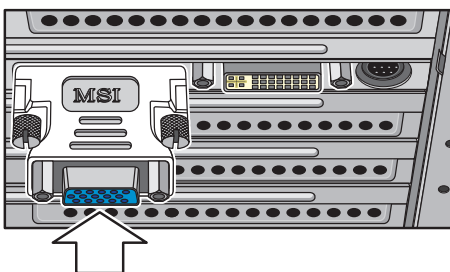
Image may not display

Note the required minimum monitor resolution of 1920 x 1080 at 70Hz. Refer to the technical documentation of the monitor for the correct resolution and frame rate settings.

Recommendation:

- Sirona inLab system PC monitor, Order No.: 60 42 548 D3446

Depending on the connection type of the monitor, the monitor cable converters must be used (not included in scope of supply).

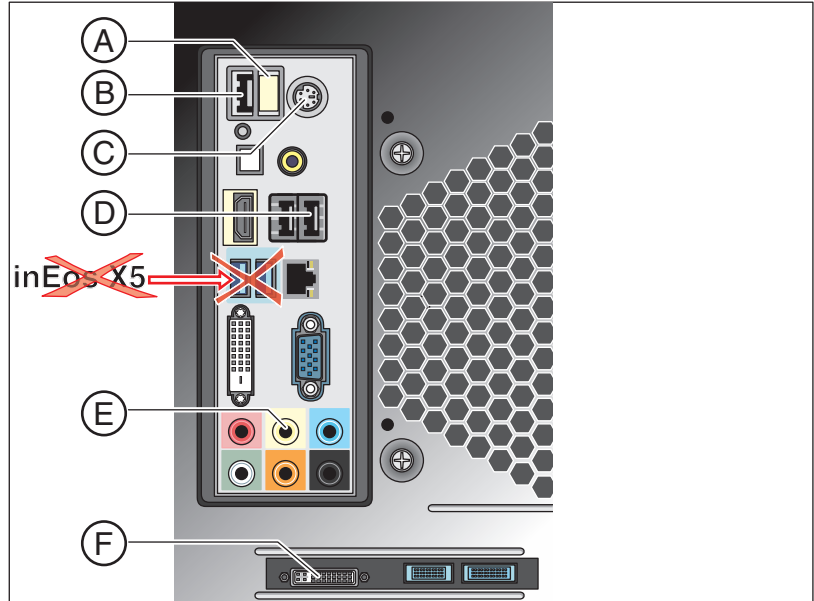


Example of monitor cable converter

6.1.1.2 Making connections

NOTICE

Do not connect or switch on the inEos X5 yet!
 First, connect the PC to the monitor, keyboard, and mouse.
 Follow the instructions in this document exactly in order to successfully perform start-up of your device.
You must install the user software prior to connecting the device to the PC.



A	USB license stick
B	USB for inEos X5
C	Keyboard/mouse Alternatively: Connection via USB
D	USB for inEos X5 foot control
E	Optional: Audio output
F	Monitor

1. Connect the keyboard and the mouse to the PC.
2. Connect monitor to the PC using the corresponding monitor cable.
3. Turn on the monitor and PC power supplies.
4. Turn on the power switch on the rear panel of the PC (if present).

6.1.2 Safety

The inLab-PC V 5.0.1 is equipped with Windows 10. The Windows Firewall is activated. The software Microsoft Security Essentials is also pre-installed by default. Please activate the automatic update function in the settings of this software for optimal protection.

CAUTION

Damage to the system and data loss:

If you exchange files and programs with other PC systems and/or operate this PC in a network (LAN or Internet), damage may be caused by software viruses.

- Activate the "Automatic Updates" function of Microsoft Security Essentials.
- Activate the "Automatic Updates" function of Windows 10.
- Run backups of all your important files at regular intervals.

6.1.3 Possible sources of error

Error	Possible cause	Troubleshooting
PC does not start when the button is pressed.	If the PC has a power switch on its rear panel, this switch may possibly be switched off.	Turn the power switch on (if present).
No image appears on the monitor even though all connections have been made.	The resolution and frequency of the monitor being used do not meet the minimum requirements (1920 x 1080; 70Hz).	Use a monitor that meets the minimum requirements.

6.2 Installing the software

NOTICE

Initial installation without inEos X5

Perform the initial installation of the software **without** connecting inEos X5.

The software requires the 2.00 firmware version of the license stick. Update the firmware version if necessary. For additional information, refer to the "License manager" section in the user manual inLab SW.

At least one inLab PC version 4.0.x with Hardware Upgrade Kit or an inLab PC version 5.0.1 or newer is needed for the software. The latest inLab PC version is always recommended.

Use the version of the license manager provided with this version to install licenses from the license certificate provided.

NOTICE

Installation only with administrator rights

You must have administrator rights on the PC on which you want to install the software!

Preparing the installation

- ✓ The USB license stick firmware is available in at least version 2.00.
- ✓ The PC is booted and all programs are closed.
- 1. Insert the USB stick into the corresponding USB port of the PC.
or
- > Download the software from the Internet.
- 2. Execute the file "*Setup.exe*".
 - ↳ This installation program starts.

Installing the application

1. Select the language for the following installation and then press the "*Next*" button.
2. Read the information on copyright carefully and then press the "*Next*" button.
3. In the next step, select the language and application region for the application and then press the "*Next*" button.
4. In the next step you have the option of defining another folder for the installation of the application and, if necessary, an alternative folder for the patient data folder.
Then press the "*Next*" button. The path to the patient data folder can still be changed after the installation via the configuration menu.
 - ↳ The application is now installed. This may take several minutes.
5. Following successful installation, press the "*Start*" button to complete the installation and to start the application immediately after this. At this point, you have the option to subscribe to a Dentsply Sirona newsletter.
Tip: If you do not want to start the application immediately, remove the tick from the "*Start application directly*" check box and then press the "*Exit*" button.
 - ↳ The installation program closes.

6.3 Connecting the unit

NOTICE

Switching the PC off

Switch the PC **off** before connecting the inEos X5.

6.3.1 Connecting the unit to the PC

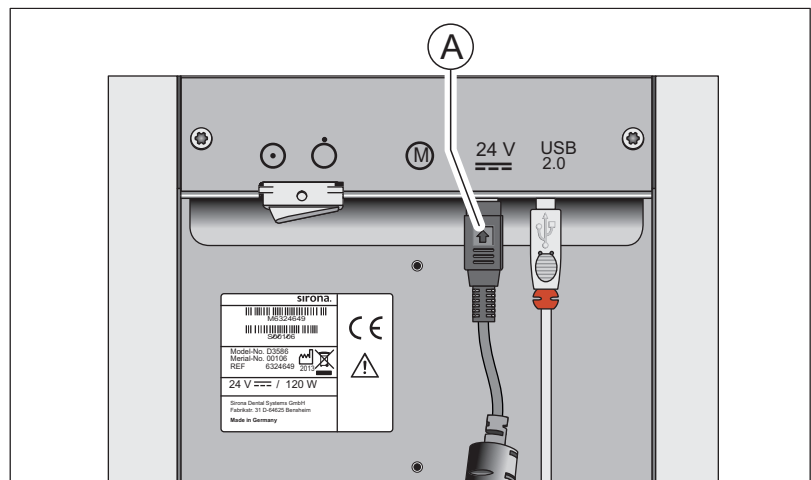
NOTICE

Install the user software first!

You must install the user software prior to connecting the device to the PC.

- > Connect the socket (USB port) of the inEos X5 to the socket (USB port) of your PC via the interface cable included in the scope of supply.

6.3.2 Connecting the unit to the power supply



A Socket for power supply

- > Connect the socket (**A**) of the inEos X5 to the power supply via the power supply unit included in the scope of supply.

NOTICE

Use a grounded power outlet

The power supply unit must be connected to a grounded power outlet.

6.3.3 Connecting the foot switch (optional)

- > Plug the connector of the foot switch into the matching socket (USB port) of your PC.

6.3.4 Switching the unit on and starting the software

NOTICE

Do not put the unit into operation at low temperatures!

If you move the unit to the operating site from a cold environment, condensation may form and result in a short circuit.

- ✓ Install the unit at room temperature.
- Wait until the unit has reached room temperature and is absolutely dry.
 - ↳ The unit is dry and can be put into operation.

1. Switch the unit on at the main switch.
2. Start the software at the PC via the Windows start menu.

6.4 Calibrating the motor arm

IMPORTANT

Calibrating the system

Following installation of the inEos X5, it is recommended that you perform an axis calibration with the inLab SW software.

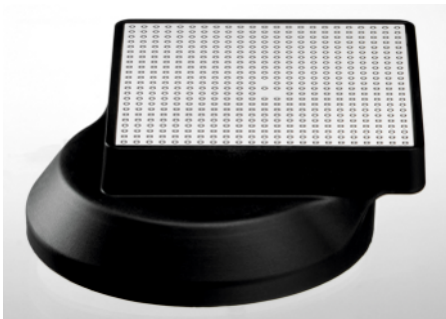
- ✓ The inEos X5 is switched on.
 - ✓ The jaw model supplied for calibration is ready.
 - ✓ You have restarted the software.
1. Click the *"Devices"* button in the system menu.
 2. Click on *"inEos X5"*.
 - ↳ A selection menu opens.
 3. Click on the *"Calibrate MotorArm"* button.
 - ↳ The calibration dialog opens.
 4. Follow the steps in the calibration dialog.
 5. Position the calibration model on the rotation disk in such a way that the front teeth are facing directly in the direction of the unit.
 6. Start the scan process.
 - ↳ The unit is calibrated. Wait until the process has been completed.
 7. Restart the software.

6.5 Calibrating the inEos X5 camera

IMPORTANT

Calibrating the system

The calibration of the inEos X5 camera is only required if you use ATLANTIS-FLO-S scanbodies in order to design single-piece directly screwed suprastructures and to have them manufactured at INFINIDENT SOLUTIONS or in order to transmit the scanned models to Dentsply-Sirona-ATLANTIS central manufacturing for design and manufacturing purposes.



- ✓ The inEos X5 is switched on.
 - ✓ The optionally available calibration set inEos X5 (REF 6483759) is available.
 - ✓ You have restarted the software.
1. Click the *"Devices"* button in the system menu.
 2. Click on *"inEos X5"*.
 - ↳ A selection menu opens.
 3. Click on the *"Calibrate Camera"* button.
 - ↳ The calibration dialog opens.
 4. Once prompted, position the calibration set on the rotary plate as shown in the software.
 5. Start the calibration process.
 - ↳ The unit is calibrated.
 - ↳ Depending on the ambient temperature, the camera optical system may need some time to warm up. This is required in order to achieve maximum precision.
 6. Once the calibration is complete, the calibration protocol can be saved in PDF format.
 7. Restart the software.

6.6 Updating the firmware

In order to update the inEos X5 firmware, proceed as follows:

1. Click the *"Devices"* icon in the system menu.
2. Click on the icon of inEos X5.
3. Click on *"Update Firmware"*.
4. Switch inEos X5 off at the main switch.
5. Then simply proceed as prompted by the inLab software.
 - ↳ The inEos X5 firmware will be updated. The percentage of completed progress is displayed.



IMPORTANT

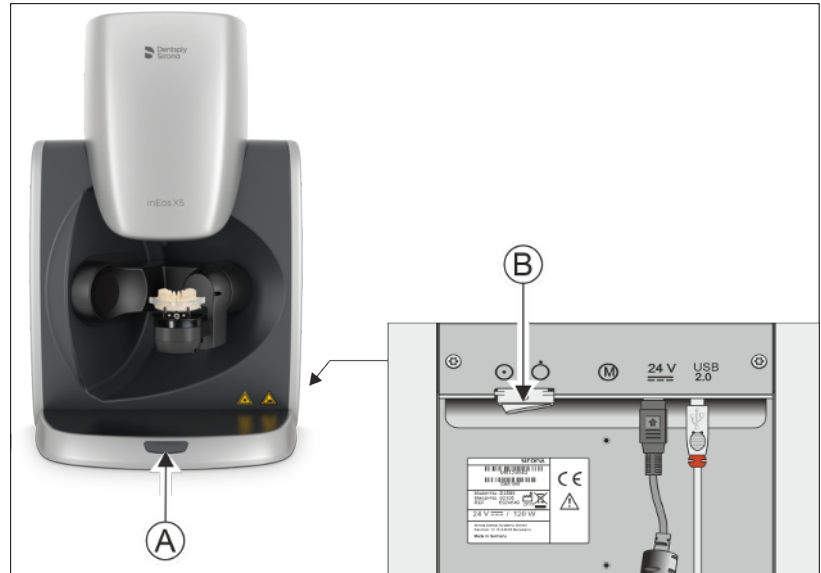
Do not disconnect the unit from the power supply

During the firmware update, ensure that the unit is not disconnected from the power supply.

6. Once the update is complete, confirm the message with *"Ok"* and switch off the inEos X5.
7. Turn the inEos X5 back on.
8. Click on *"Continue"* in order to exit the configuration and continue with the inLab SW.

7 Controls and displays

7.1 Controls on the inEos X5



inEos X5 features the following controls:

- A Start key
- B CC

⚠ CAUTION

Stopping motor movements

By pressing and holding the Start key (A), all movements of the motor are immediately stopped and the motors are switched to a voltage-free state. The unit then switches to an error state (see "Operating state LED [-> 32]LED lights up red").

7.2 Operating state LED

The LED shows the operating status of the unit:

NOTICE

Once the unit is switched on, the LED must light up in one of the following colors. Should this not be the case, this indicates a unit defect, which must be eliminated prior to further use.

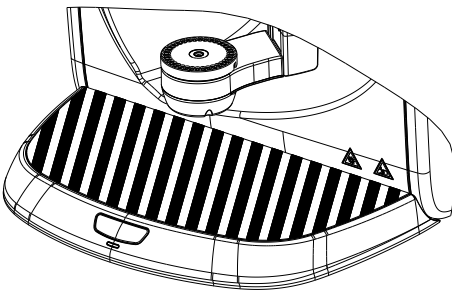
LED lights up green

The unit is ready for operation.
The articulated arm will move only in case of user interaction in the software or if the Start key is actuated.



LED lights up yellow

An automatic acquisition process has been started; the arm is already moving or is about to start moving.



CAUTION

Risk of injury!

Do not place any part of your body either wholly or partially in the working area of the articulated arm in this operating state!

Ensure that there are no objects and/or body parts on the work plate (shaded area) during automatic operation. Otherwise this creates a collision hazard as a result of the swiveling movement of the articulated arm.

LED lights up red

Error state.

Causes may include:

- Activation of safety light barrier on the scan element
- Pressing and holding the Start key
- Malfunctioning of drives

The articulated arm will not move in this operating state.

Proceed as prompted by the inLab software.



8 Switching the system on

NOTICE

Do not put the unit into operation at low temperatures!

If you move the unit to the operating site from a cold environment, condensation may form and result in a short circuit.

- ✓ Install the unit at room temperature.
- > Wait until the unit has reached room temperature and is absolutely dry.
 - ↳ The unit is dry and can be put into operation.

Switching on the inEos X5

1. Switch on the PC.
2. Switch the inEos X5 device on at the main switch.

Starting the software

- > Start the software at the PC via the Windows start menu.
 - ↳ The inEos X5 automatically starts (if the main switch is turned on) as soon as you switch to the SCAN phase of the inLab CAD SW software.

IMPORTANT

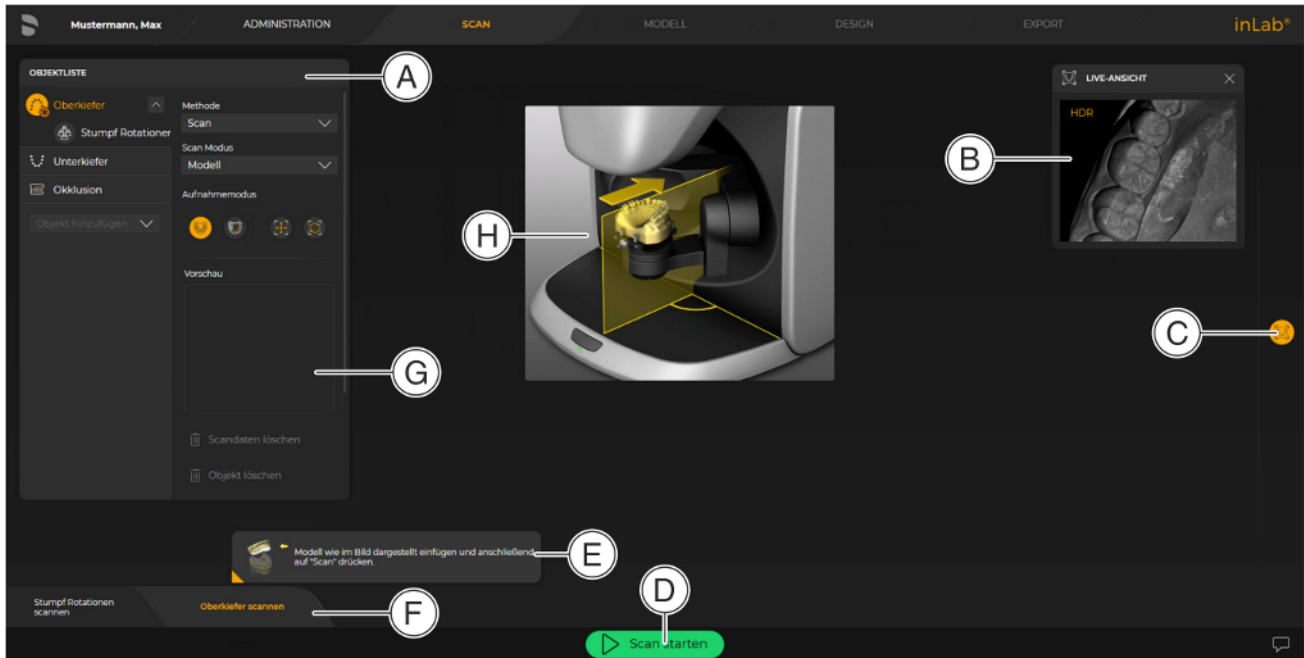
Shutdown during a running scan process causes considerable delays when the unit is restarted.

9 Performing 3D acquisition

9.1 General

9.1.1 Description of the SCAN phase

9.1.1.1 Complete overview of SCAN phase

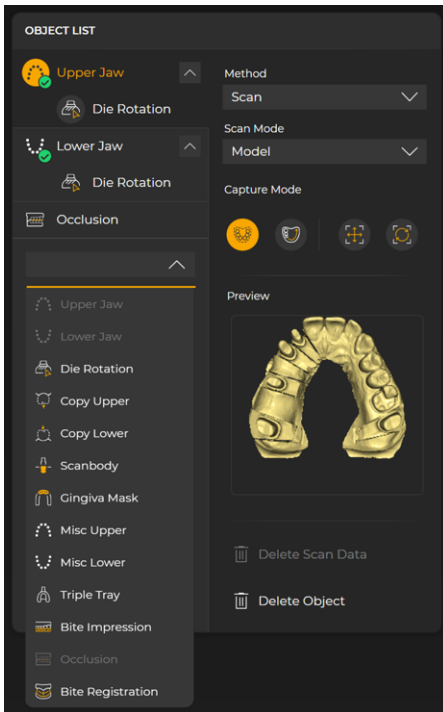


A	Object list	B	Live image
C	Tools	D	Start scan
E	Help texts	F	Step menu
G	Preview image	H	Help images for correct positioning of the models

9.1.1.2 Object list

Description of the object list




The object list with various functions is found on the left side of the display:



- The object list manages all objects (e.g. lower jaw, upper jaw, buccal).
- The sub-objects for lower jaw and upper jaw can be selected for the scan (e.g. stumps, scanbodies, gingiva).
- A preview of the currently selected object can be seen in the preview field.
- Additional objects can be added using the "Add Object" button.
- Image data is moved from one object to another via drag & drop.
- When you right-click on an object, a shortcut menu opens.
- For rotational scans, the stumps can be separated.

Status of objects

Various characters/symbols that indicate the status of the respective object are visible on the object.

Character/symbol	Meaning (status)
 Orange asterisk	Mandatory element (disappears when object is scanned)
 Yellow exclamation mark	Correlation failed
 Green check mark	Object successfully scanned

Various options selectable per object

Various options can be selected for each object:

- Method
 - Scanning
 - Importing an STL file
- Scan mode
 - Model
 - Impression
- Capture mode
 - Complete capturing
 - Reduced capturing
 - Capture Manual
 - Capture Auto

Correlate function

The Correlate button can be used to automatically correlate objects imported via STL with one another with a click. For example, the upper jaw or lower jaw can be automatically correlated with the respective upper jaw ("*Copy Upper*" / "*Misc Upper*") or lower jaw ("*Copy Lower*" / "*Misc Lower*").

Deletion options

Two deletion options are available in the second column:

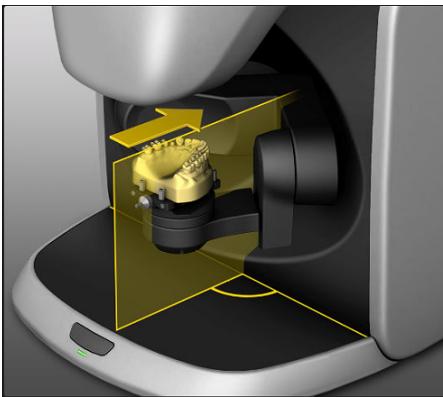
Deletion option	Meaning
<i>"Delete Scan Data"</i>	Only the image data is deleted. The object still exists in the first column.
<i>"Delete Object"</i>	The entire object is removed together with the image data from the first column.

9.1.1.3 Step menu

The step menu is adjusted for each object and forms the appropriate scan workflow for the respective object. It completely guides you through the scan process.

9.1.1.4 Help texts and help images

Help texts and help images show you exactly what to do and provide assistance.



9.1.2 Acquisition methods

Four methods are available for acquiring scans with the inEos X5:



- Automatic jaw scan (e.g. complete capturing, reduced capturing)
 - For all tasks
 - Especially for large, complex tasks or tasks with high accuracy requirements



- Free jaw scan (e.g. capture manual, capture auto)
 - For simple tasks
 - For free detail scans under various angles



- Single die scan (rotation scan)
 - For the measurement of one or more single tooth stumps
 - For single restorations without consideration of the proximal contacts or the antagonist



- Scanbody scan
 - For the measurement of one or more scanbodies

Tip: You can execute several scan methods in sequence. You can omit a scan method if, for example, it is either not suitable or is not required for your model.

IMPORTANT

Perform the single die scans either completely prior to or after the automatic and/or free scans.

It is not possible (for example) to initially perform a capture auto, then carry out a scan of single dies, and, finally, to change back to automatic mode once again.

Tip: Follow the step menu. The step menu guides you through the scan process. For stump model tasks, first take the scans of the prepared stumps. Then add automatic and/or free scans. In this way, you can reduce the processing time.

9.1.3 Scan modes

You can perform scans in two modes: *"Model"* or *"Impression"*. You can switch between the modes with the *"Scan Mode"* function.

"Single Exposure"

A black square icon with the white text "HDR" inside.

Use the *"Single Exposure"* mode for scans with models with no special requirements in terms of the brightness settings for the exposure (default value).

"Multiple (HDR) Exposure"

A black square icon with the yellow text "HDR" inside.

The HDR ("high dynamic range") mode captures situations requiring a large dynamic range (differences in brightness) during the exposure.

This mainly concerns material mixes, for example:

- Dark plaster
- Abutments covered with Optispray
- When using scan wax
- When measuring scanbodies
- When capturing silicon impression trays with several multi-colored impression materials

inEos X5 captures these situations using multiple exposure, so that every part of the surface is measured with the optimal exposure setting. Accordingly, the scan takes longer.

9.1.4 Scan models and impressions

Materials

You can scan all materials that correspond to the following criteria:

- Non-reflecting
- Non-transparent
- No transparent parts
- Not highly absorbent
(e.g. heavily colored plasters, scannable impression materials)

IMPORTANT

Unscannable materials generate artifacts or gaps in the image.
--

Tip: When using materials that do not meet these criteria, you must powder the affected areas. Otherwise the measuring accuracy will be heavily influenced.

The following is suitable for this purpose, for example: CEREC Optispray (REF 61 44 179)

For scanning with inEos scanners, we recommend using CEREC Stone BC plaster (REF 62 37 502).

Saw-cut models

- When preparing saw-cut models, be careful not to mill off the single stump segments. Place the model next to the stumps so that the inEos scanner can properly capture these areas.
- Create only a slight fluting below the preparation margin.

9.1.5 Autofocus

The scanner features automatic focusing.

As soon as the object stops moving, the image is automatically focused both in the automatic and in the manual mode.

9.1.6 Operation via foot switch

As an alternative to the Start button of the scanner, you also can use the optionally available foot switch (REF 63 10 449) to start and end scanning processes in the respective scanning mode.

- > Plug the connector of the foot switch into the matching socket (USB port) of your PC.

9.2 Automatic jaw scan

In "Capture Jaw" mode, you capture the model situation fully automatically.

- For all tasks.
- Especially for large, complex tasks or tasks with especially high accuracy requirements.

9.2.1 Preparing the optical impression

In the automatic scan, you can choose between the "Reduced Capturing" and "Complete Capturing" options.

"Reduced Capturing":

The entire jaw is scanned based on a standard sequence with a lower level of detail.

Tip: This mode is especially suitable for scanning an unprepared opposite jaw. It provides all of the information required for the following steps. Hard-to-scan gaps are not automatically closed.

"Complete Capturing":

The area scanning option is used to define the areas in which the scan is automatically performed with a high level of detail. The areas of the preparations are usually the ones involved here.

All of the gaps in the digital model are completely closed in the scanned areas via the intelligent gap closing technique.

All other areas of the model are scanned with a lower degree of detail using a standard sequence.



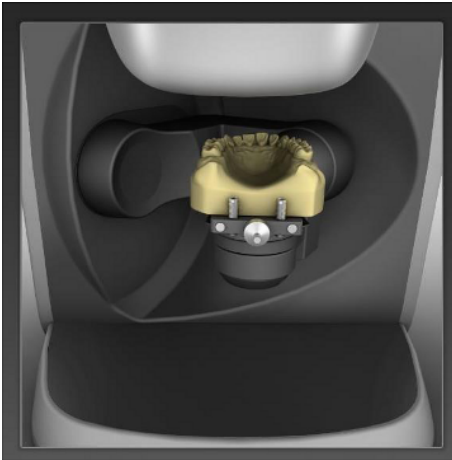
Model holding plates

Tip: If you are using partial jaw models (e.g. quadrant models), position these on the outer edge of the model holding plate.

- ✓ You have selected the desired object (lower jaw, upper jaw, etc.).
 - ✓ The articulating arm is moved to the loading position.
1. Fasten the model to the supplied model holding plate using the Blue Tack filling material. The labial side must face the straight edge of the plate.

or

- > Alternatively, you can use the parallel vise provided. In this case, the labial side faces the fastening screw.

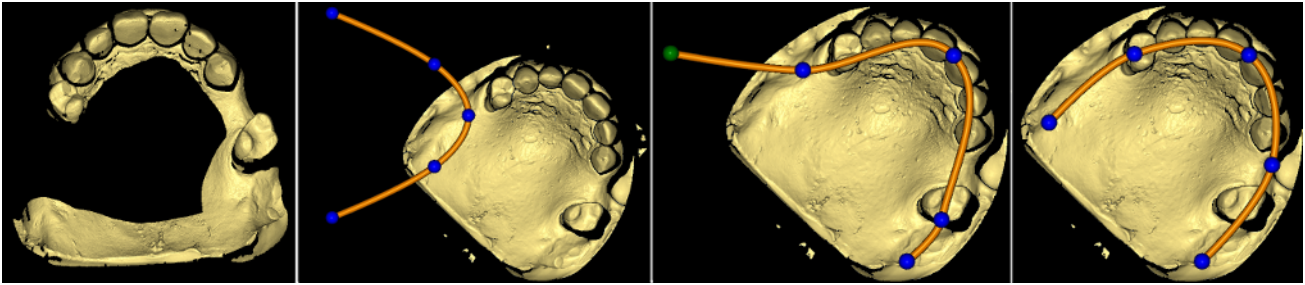


2. Position the model holding plate with the model on the rotation disk of the articulating arm. **IMPORTANT:** When doing so, ensure that areas including teeth or the alveolar ridge are visible to the camera (see diagram).

9.2.2 Taking the scan

1. Start the scan by pressing the Start button on the inEos X5 once.
or
> Alternatively, you can start the scan as follows: By pressing the "Enter" key on your keyboard once, by actuating the foot switch (optional) once or by clicking the "Scan" button in the software.
 - ↳ If you have selected the full scanning method, the inEos X5 automatically generates five to six scans from the occlusal aspect.
 - ↳ On completion of the overview scans, the model preview appears and a selection dialog opens.
2. Press and hold the mouse button to mark the prepared area. You can mark several areas.
3. Click on the "Apply" button to confirm the selection. You can discard the selection by clicking on the "Reset" button.
 - ↳ If you have selected "Capture Complete" or "Capture Reduced", the inEos X5 starts the automatic scan process.

9.2.3 Guideline editor



If the guideline is not automatically found after the overview scan, it can be corrected via the guideline editor.

1. Click on the *"Correct Jaw Line"* button.
2. Click on the balls and drag them to the correct jaw ridge line.
3. Then confirm with *"Ok"*.

9.2.4 Starting the automatic detail scan

Following an automatic scan, individual scans can be released by clicking the mouse.

1. Position the virtual model so that the area of interest is well visible.
2. Start the automatic detail scan by double-clicking on the area of interest.
 - ↳ The inEos X5 positions the model in the scanning position with the rotation arm and automatically starts the scan. The image is automatically registered in the virtual model.

Tip: If no scans can be released, try changing the angle of the model slightly.

9.3 Free scans



In "*Capture Free*" mode, you quickly capture the model situation manually in a controlled manner.

Moreover, you can scan e.g. areas that may not be sufficiently captured in the automatic mode with detail scans.

- For simple tasks
- For detail scans under various angles

9.3.1 Preparing the optical impression

- ✓ You have selected the desired object (lower jaw, upper jaw, etc.).

Tip: Take special care to select the right image catalog for detail scans.

1. Fasten the model to the supplied model holding plate with Blue Tack. The labial side must face the straight edge of the plate.

or

- > Alternatively, you can use the parallel vise provided. In this case, the labial side faces the fastening screw.

2. Position the model holding plate used with the spherical model holder.

3. Select one of the free scan methods in the object list, either "*Capture Manual*" or "*Capture Auto*".

- ↳ The articulating arm moves to its parking position.

- ↳ A section of the scan area appears in the live image.

- ↳ Green crosshairs appear in the live image.

9.3.2 Automatic and manual release in the "free scan" mode

When working in "*Capture Free*" mode, there are several possibilities for releasing scans.

Capture Manual

"*Capture Manual*" is the standard mode for the inEos X5.

> Double-click the Start button.

or

> Alternatively, you can use the "Enter" key on your keyboard or the "*Capture Manual*" button below the live preview.

↳ An individual scan is taken with each release.

Capture Auto

1. Select the "*Capture Auto*" mode in the Scan menu.

or

> Alternatively, you can click the Start button of the inEos X5.

↳ The crosshairs in the live image turn green.

2. Start the scans by clicking the "*Scan*" button in the software.

or

> Alternatively, you can press the Start button of the inEos X5 or press the Enter key on your keyboard.

↳ The crosshairs in the live image turn blue.

↳ After the model has been moved or tilted and is again in the rest position, exposures are automatically released.

3. Single-click the Start button of the inEos X5 to interrupt/end the automatic release mode.

↳ The crosshairs in the live image turn green.

9.3.3 Taking a free scan (without previous automatic scans)

1. Align the model.
 - ↳ The model is aligned horizontally.
 - ↳ As many teeth as possible are visible in the live image.
2. Let the model rest and wait until the autofocus has focused the model.
3. Start the acquisition process with automatic or manual release
 - ↳ A scan is generated.
4. Add additional scans from adjacent areas: Move the model freely in the working area until you have reached the next acquisition position. As soon as the model stops moving, the camera is automatically released or is manually released by a double-click on the Start button. You can tilt the model on the shifting plate by up to 40°. **NOTICE!** The new image must overlap approximately 30-50% of the previous image.
5. Repeat step 4 until all of the required scans have been taken.

9.3.4 Taking a free detail scan

1. Align the model.
 - ↳ The areas in which information is missing in the digital model preview can be seen in the live image.
2. Let the model rest and wait until the autofocus has focused the model.
3. Start the acquisition process with automatic or manual release
 - ↳ A scan is generated.
4. Add additional scans from adjacent areas: Move the model freely in the working area until you have reached the next acquisition position. As soon as the model stops moving, the camera is automatically released or is manually released by a double-click on the Start button. You can tilt the model on the shifting plate by up to 40°. **NOTICE!** The new image must overlap approximately 30-50% of the previous image.
5. Repeat step 4 until all of the required scans have been taken.

9.4 Rotational scans



Select the single stump scan via the object list or step menu in order to scan single stumps from all sides.

- For the surveying of single tooth stumps
- For single restorations without consideration of the proximal contacts or the antagonist

IMPORTANT

Perform the rotational scan either completely prior to or after the automatic and/or free scans.

Various scan options are available in the "Capture Rotation" mode.

Button	Scan option
	<ul style="list-style-type: none"> • Individual stump scan slanted • For scanning all standard individual stumps Tip: Change the angle for the individual stump scans for the scanning of heavily chamfered stumps or for scanning abutments by moving the slide controller. You can adjust the angle of incidence to the respective situation from 45° to 105° individually in 5° steps. An angle of 60° is recommended as a default value for all common single stump scans.
	<ul style="list-style-type: none"> • Multiple-stump scan • For scanning up to 4 stumps at the same time Tip: The difference in height between the stumps in the group being scanned should not exceed 10 mm in relation to the assembly plate. If this cannot be avoided, scan the stumps using the individual scan option. If the stumps are not made from the same type of plaster, activate the HDR mode.

9.4.1 Preparing the optical impression

1. Secure the object (e.g. a tooth stump) with the filling material in the center of a model holder.
 - ↳ The longitudinal alignment of the object must correspond to the model holder's axis of rotation.
2. Place the model holder on the model holding plate.
3. Select the "Capture Rotation" button in the Scan menu.

IMPORTANT

When scanning a single object, place the model holder in the center of the model holding plate.

When scanning more than one object simultaneously, place the model holders in the outer positions of the model holding plate.

- ↳ The articulating arm moves to the loading position.
4. Fasten the model holding plate using the objects on the articulated arm.

9.4.2 Taking a rotational scan



1. Select the scan type (individual stump scans at 60°, 75°, or multiple-stump scan) in the Scan menu.
IMPORTANT: In the case of multiple-stump scans, ensure that one of the stumps to be scanned is always visible to the camera (see diagram). For this, only position the same number of magnetic pots on the model plate as the number of stumps to be scanned.
2. Click the Start button of the inEos X5.
or
> Alternatively, you can start the scan process by clicking the "Scan" button in the software, or by pressing the Enter key on your keyboard.



Tip: In the case of particularly long stumps, the self-made clamping jaws can be used as support for better fixing.

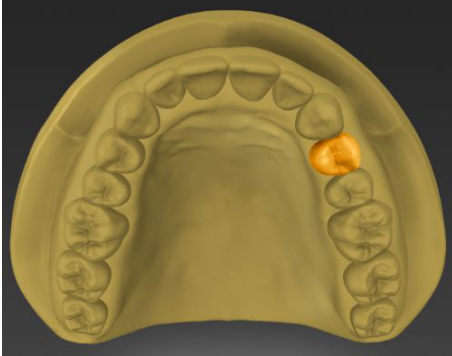
9.5 Acquiring an occlusal bite registration

You can secure the model using the articulator plate which is available as an option (see “Using the articulator plate [→ 62]”).

- You have selected the “Occlusion” object.
- The image catalogs of the jaw and of the opposite jaw contain images with buccal sections at a position next to or directly on the preparation.
- In the buccal image, both jaws must be moved to the centric jaw relation and an exposure taken that records both jaws at the same time.
- The software automatically records the jaw and opposite jaw together.
- **Tip:** The model can be left in the articulator.
- Alternatively, it is recommended that the model be fixed, e.g. with wax, and manually held under the camera. The model should be supported on the working area.

9.6 Example applications

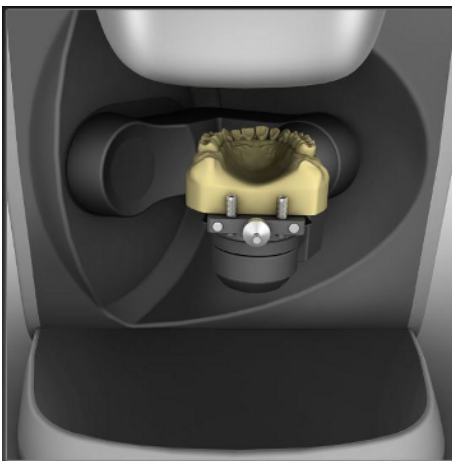
9.6.1 Scanning a crown preparation



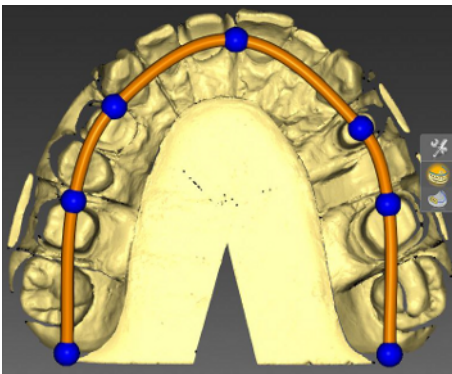
1. Create a case ("*Crown*") in the ADMINISTRATION phase.
2. Then continue to the SCAN phase.
 - ↳ The preparation to be scanned is pre-selected in the object list.



3. Place the stump in the tray provided for that purpose and press the green "*Start scan*" button (optional, only when saw-cut model is available).
4. Return the stumps to the model.



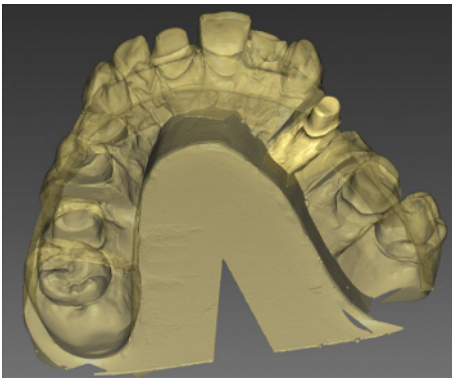
5. Continue to the next step in the step menu for scanning the jaw and start the scan process using the green "*Start scan*" button. Optionally, you can also select "*Reduced Capturing*" in the object list.



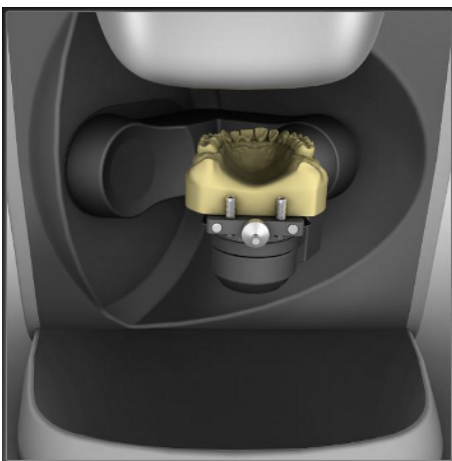
6. If the alveolar ridge line was not correctly found automatically, you can correct this. Select the *"Edit Jaw Line"* tool and bring the alveolar ridge line to the correct position by moving the blue dots.



7. Select the areas to be scanned with higher precision by pressing and holding down the left mouse button and dragging the mouse pointer around the respective area. Then press the green *"Start scan"* button.
8. Fill up the gaps using double-clicks or stop the scan to continue with the next step.



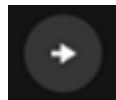
- ↳ The stump is automatically correlated with the scan of the upper jaw.



9. Continue to the next step in the step menu for scanning the opposite jaw.
10. Place the opposite jaw in the model holder and press the green *"Start scan"* button. Then continue to the buccal scan.

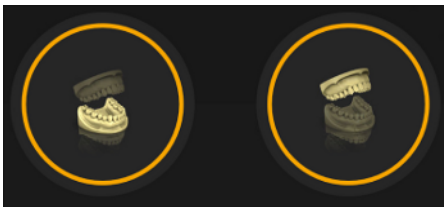


11. Place the models with upper and lower jaw in the scanner and start the buccal scan by pressing the green "Start scan" button.

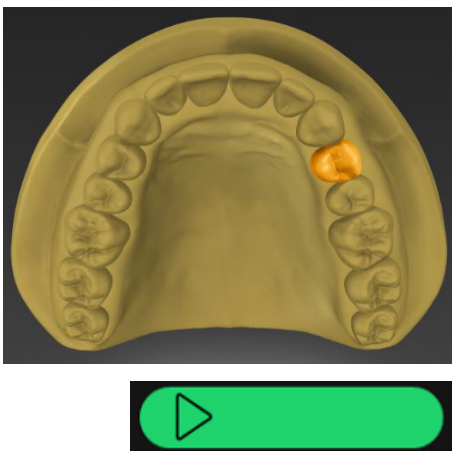


12. Click on the Next arrow.

↪ The SCAN phase is finished and the model is loaded.

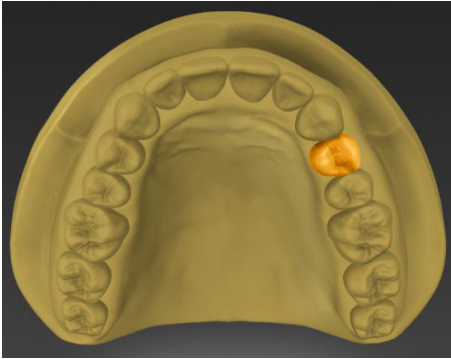


9.6.2 Scanning an impression



1. Create a case in the ADMINISTRATION phase.
2. Then continue to the SCAN phase.
 - ↪ The jaw of the preparation to be scanned is pre-selected in the object list.
3. Change the scan mode to "Impression".
4. Press the green "Start scan" button.

9.6.3 Importing an STL file



1. Create a case in the ADMINISTRATION phase.
2. Then continue to the SCAN phase.
 - ↳ The jaw of the preparation to be scanned is pre-selected in the object list.
3. In the object list, select "*Import STL*" as the method. Open an STL file via the file path.
4. As soon as the STL file is loaded, continue to the MODEL phase.

9.6.4 Scanbody scans for scanning with inPost and ATLANTIS-FLO-S scanbodies

Use scanbody scans for the measurement of one or more implant positions with the scanbody inPost for directly screwed on bridges on multi-unit abutments.

CAUTION

Pay attention to the inPost scanbodies / ATLANTIS-FLO-S scanbodies / multi-unit abutments matching the implant system. Ensure the correct seating on the laboratory analog of the screwed in scanbodies and multi-unit abutments prior to scanning. Elements screwed in incorrectly may lead to the incorrect detection of the implant position and thus to inappropriate restorations. Observe the operating instructions for the scanbodies. When screwing in the Sirona in-Post scanbodies for multi-unit abutments, you must use commercially available latex gloves. The ATLANTIS-FLO-S scanbodies can be screwed in without the use of gloves.

1. Select the corresponding Scanbody image catalog in order to be able to record the implant location for directly screwed bridges in connection with the inPost or FLO-S scanbodies.
2. Clamp the model without screwed in scanbodies and gingival mask to the arm of the scanner and start the overview scan.
 - ↳ The "*Capture Scanbody*" button becomes active once the overview scans are complete.
3. Click on the "*Capture Scanbody*" button.

NOTICE

The scanner moves into an appropriately easy-to-access position for screwing in the scanbodies.

- > Do not take the model down from the holder.

4. Screw the scanbody onto the first implant position.
5. Rotate the model in the 3D preview in the implant axis and double-click on the position in which you screwed the scanbody in beforehand.

- ↪ The scanbody is recorded via a rotation scan and illustrated in the 3D preview once the scan is complete.
6. Continue with other implant positions.
 7. After recording the scanbodies, continue scanning the other necessary models.

9.6.5 Scanning an occlusal rim

NOTICE

Collision and damage possible

Due to the size of the occlusal rim, a collision with the housing or objects placed on the scan plate is possible. This may cause damage to the bite rim, housing parts or rotary plate.

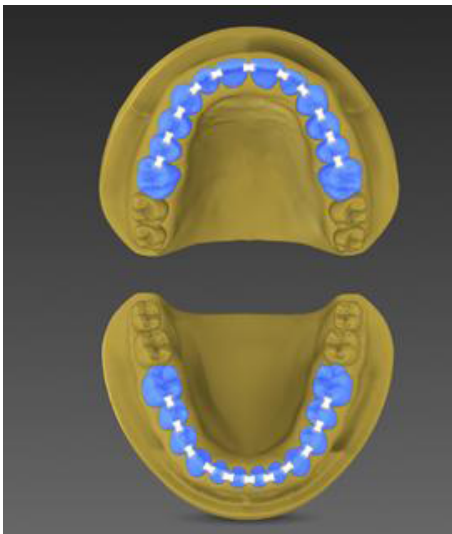
- The bite rim to be scanned must not exceed a maximum size of 75 mm x 50 mm x 65 mm (length x width x height).

NOTICE

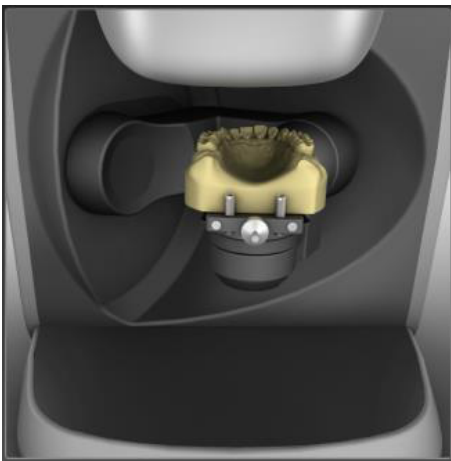
Erroneous scan/correlation possible

Incorrectly attached occlusal rims may result in an erroneous scan and, thus, an erroneous correlation of upper jaw to lower jaw. This may result in a restoration that doesn't fit.

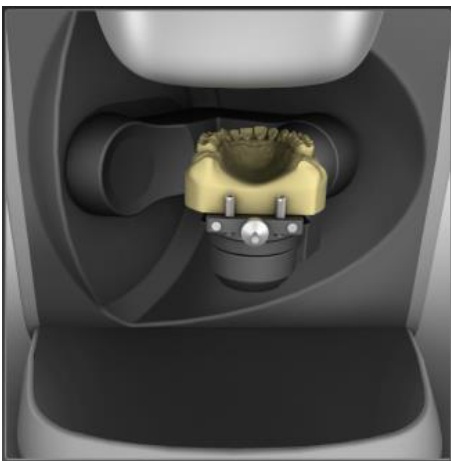
- Ensure the correct seating of the bite rim on the bite rim holder prior to scanning.



1. Create a case ("*Full Denture*") in the ADMINISTRATION phase.
2. Then continue to the SCAN phase.
 - ↪ Upper jaw, lower jaw and bite rim are automatically created in the object list.
Tip: You can also import the bite rim as an STL file (see "Importing an occlusal rim [→ 56]").



3. Place the lower jaw on the arm of the scanner as specified by the reference picture and text.

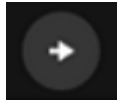


4. Start the scan using the green "Start scan" button.
5. Optional: Fill up the gaps using double-clicks or stop the scan to continue with the next step.
6. Select "Upper Jaw" in the object list and position the upper jaw on the arm of the scanner as specified by the reference picture and text.



7. Start the scan using the green "Start scan" button.
8. Optional: Fill up the gaps using double-clicks or stop the scan to continue with the next step.
9. Select "Bite rim" in the object list and position the model with bite rim on the prosthesis holder as specified by the reference picture and text.

10. Start the scan using the green "Start scan" button.
11. Then, make the scan more precise via a double-click or stop the scan.



↪ The scans are now correlated.

12. Click on the Next arrow.

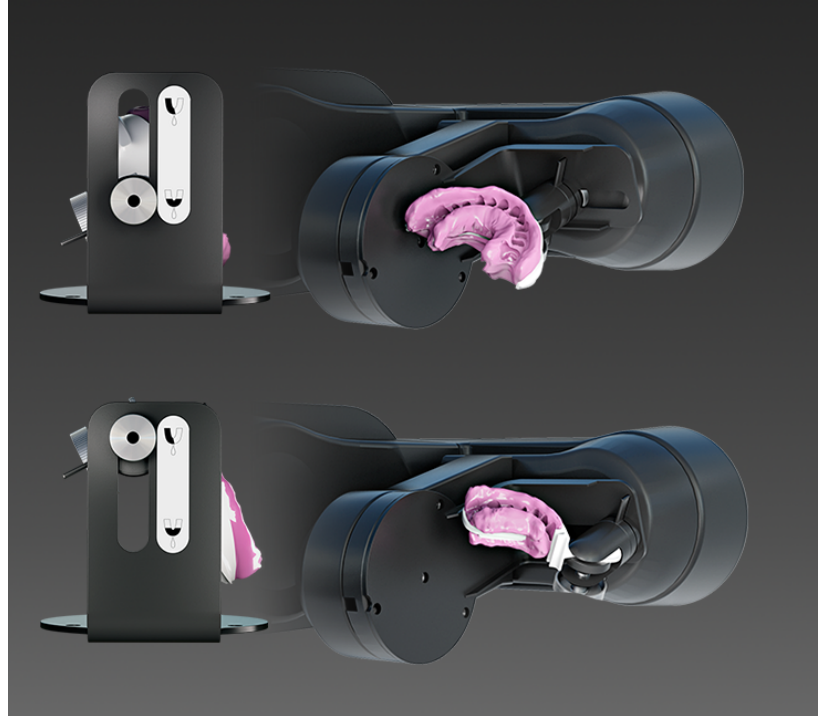
↪ The SCAN phase is finished and the model is loaded.

9.6.5.1 Importing an occlusal rim

When you import the occlusal rim as an STL file, an automatic correlation is not performed. You can manually start the correlation by clicking on the *"Correlate"* button in the occlusal rim object.

9.6.6 Scanning a triple tray

1. Click the "Add Object" button.
2. Click the "Triple Tray" object.



3. Position the impression tray as per the illustrations in the software.
4. Select the image catalog for the jaw section which is initially aligned with the camera.
5. Start the acquisition and follow the instructions and illustrations in the software for changing the jaw.

NOTICE! When performing double arch impression scanning, observe the following points:

- Aligning the model:
 - The buccal side of the impression must always point toward the retaining screw.
 - In the case of quadrant impressions, place the impression tray in the central holder position in such a way that the last distally cast tooth is centrally perpendicular to the rotary plate.
- Aligning the holder in the scanner:
 - The holder used for scanning the double jaw impressions has a groove. Position this in such a way that it is vertical above the light barrier opening of the rotary plate.

10 Regular function test of the light barrier and the Start key

The light barrier and Start key function test must be performed by a fully qualified specialist (experienced user, owner or service technician) every 12 months and the results must be documented.

CAUTION

Risk of injury!

Do not place any part of your body either wholly or partially in the scan element opening!

Function test 1

- ✓ The unit is switched on at the main switch.
- Place an object as thick as a finger (e.g. a felt-tip pen) in the scan element opening in the operating mode.

Operating state LED	Test result
The operating state LED changes from green to red.	Nominal state Light barrier functioning.
The operating state LED stays green or yellow.	Error state Call customer service.

Function test 2

- ✓ The unit is switched on at the main switch.
- 1. Roll up a strip of paper to form a paper roll with a diameter of 45 to 70 mm.
- 2. Place the paper roll in the opening on the bottom of the vertical unit in the operating state.

Operating state LED	Test result
The operating state LED changes from green to red.	Nominal state Light barrier functioning.
The operating state LED stays green or yellow.	Error state Call customer service.

Function test 3

- ✓ The unit is switched on at the main switch.
- ✓ The power LED lights up green.
- Press and hold the Start key.

Operating state LED	Test result
The operating state LED changes from green to red.	Nominal state Stop function guaranteed.
The operating state LED stays green or switches to yellow.	Error state Call customer service.

No maintenance other than the light barrier and Start key function tests described above must be performed on the inEos X5 .

11 Cleaning and care

11.1 Cleaning the outer surface

Clean the outer surfaces at regular intervals with a mild, commercially available cleaning agent.

11.2 Protection against medicaments

Due to their high concentrations and the substances they contain, many medicaments can dissolve, etch, bleach or discolor surfaces.

NOTICE

Damage to the surface

Clean the surface immediately with a moist cloth and a cleaning agent.

11.3 Cleaning the optics

The 3D camera system is a very sensitive optical device and must be handled with the utmost care. It is not usually necessary to clean the optical surfaces as these are located inside the device.

If, as an exception, cleaning is required, you can clean the optical surfaces.

- ✓ The unit is switched on at the main switch.
- 1. Switch to the scan phase in the inLab software.
- 2. Select "*Capture Free*".
- 3. Place a sheet of paper on the work surface so that it is illuminated by the blue projector lamp.
 - ↳ The auto-focus function moves the scan element into the lowest position
 - ↳ Wait until the auto-focus movement has been completed.
- 4. Switch the unit off at the main switch.
- 5. Secure the main switch so that it cannot be switched back on inadvertently (e.g. by another person).
 - ↳ The blue light is no longer emitted from the opening of the scanning element.
 - ↳ You can view the scanning elements using a mirror or from directly below (camera lens and projection lens).
- 6. Attempt to blow away the dirt. Use conventional photo bellows for this.
- 7. If further cleaning is required, clean the optical surfaces using a dust and lint-free soft cotton swab and a little ethanol (standard alcohol for cleaning) or acetone.
- 8. Switch on the inEos X5 at the main switch and restart the software.



12 Accessories

The inEos X5 is supplied with the following accessories.

- Ball joint model holder (1x) for accommodating the model plate magnetic coupling or the parallel vise magnetic coupling for free scans.
- Model plate magnetic coupling (4x) for attaching models or impressions to the ball joint model holder or the articulated arm of the inEos X5 during free or automatic scans. Please use Blue filling material when attaching the model.
- Parallel vise magnetic coupling for attaching models or impressions to the ball joint model holder or the articulated arm of the inEos X5 during free or automatic scans.
- Prosthesis holder (1x).
- Magnetic pot D30 (8x) for scanning individual stumps. Please use Blue filling material.
- Magnetic pot D50 (2x) for scanning larger stump areas. Please use Blue filling material.
- Power cable (2x) for inEos X5 and PC
- inEos X5 Power supply unit (1x)
- USB cable (1x)
- Blue filling material (1x) for attaching models, impressions or individual stumps.
- Cerec Stone BC (2x)
- inEos X5 axis calibration set (1x)
- Monitor (optional, 1x, REF 60 42 548) incl. power cable (1x)
- Open inLab license voucher (optional, 1x) for activating the Open inLab license.
- USB foot control (optional, 1x, REF 63 01 449) for starting scan processes
- Articulator plate for placing articulators in the scan area during buccal scans.
- Triple tray holder (optional, 1x, REF 64 67 638) for starting double arch impression trays.

12.1 Using the articulator plate



1. Use the adjusting screw to set the height of the articulator plate in such a way that the model lies horizontally in the articulator on the articulator plate.



2. Place the articulator plate in the working area of the inEos X5 in such a way that the buccal scan can be taken.

12.2 Using clamping jaws



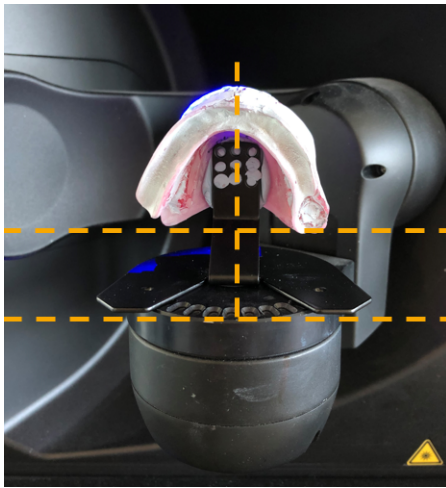
Accessories for the inEos X5 model holder for mounting smaller models, quadrant models and individual stumps in the model holder.

The clamping jaws are available as STL files on the Dentsply Sirona homepage in the inLab download area. If required, they can be downloaded at the following address and then, for example, produced additively or by milling.

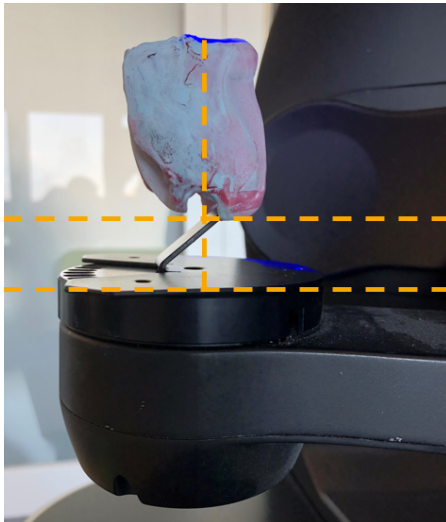
<https://www.dentsplysirona.com/de-de/entdecken/lab/cad-cam-fuer-das-labor/downloads.html>

12.3 Using the prosthesis holder

With the help of the prosthesis holder, all data required for the design of a prosthesis and the registration of the bite rim for the upper and lower jaw can be acquired fully automatically.



1. Attach the bite rim to the prosthesis holder. For example, use blue-tack filling material.
2. Position the prosthesis holder with bite rim in the inEos X5 as shown in the pictures here.



13 Disposal



In accordance with Directive 2012/19/EU and national disposal regulations regarding old electrical and electronic devices, please be advised that such items must be disposed of in a special way within the European Union (EU). These regulations require the environmentally friendly recycling/disposal of old electrical and electronic devices. Such items must not be disposed of as domestic refuse. This is indicated by the printed icon of the "crossed out trash can".

Disposal procedure

We feel responsible for our products from the first idea to their disposal. For this reason, we give you an option to return our old electronic and electrical devices.

If you wish to dispose of your equipment, please proceed as follows:

In Germany

To initiate return of the electrical equipment, please send a disposal request to enretec GmbH. You have the following options for this:

- Tel.: +49 800 805 432 1
- Email: services@enretec.de

You can arrange the transport to enretec GmbH yourself or commission enretec GmbH with the organization.

Prepare the device for transport in accordance with the "Important regulations for the return of old electrical equipment". Available online at (www.enretec.de).

In accordance with the national disposal regulations regarding old electrical and electronic devices (ElektroG), we as the manufacturer assume the costs for disposing of the electrical and electronic devices in question that were purchased from us on or after August 13, 2005. Disassembly, transport and packaging costs shall be borne by the owner/operator.

By using this return option, we jointly ensure that any substances harmful to the environment and health contained in the devices are disposed of in compliance with the law and that the equipment is recycled in the best possible way.

If your unit is movable, it will be collected from the practice. If it is permanently installed, it will be picked up curbside at your address by appointment.

WARNING

Before disassembling and disposing of the device, all parts must be properly prepared (cleaned, disinfected, sterilized).

Other countries

For country-specific information on disposal, contact your local dental dealer.

IMPORTANT

Operators of equipment with storage functions for customer and patient data are responsible for deleting all personal data before disposing of the equipment.

We reserve the right to make any alterations which may be required due to technical improvements.

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