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Xios Scan

Operating Instructions

English

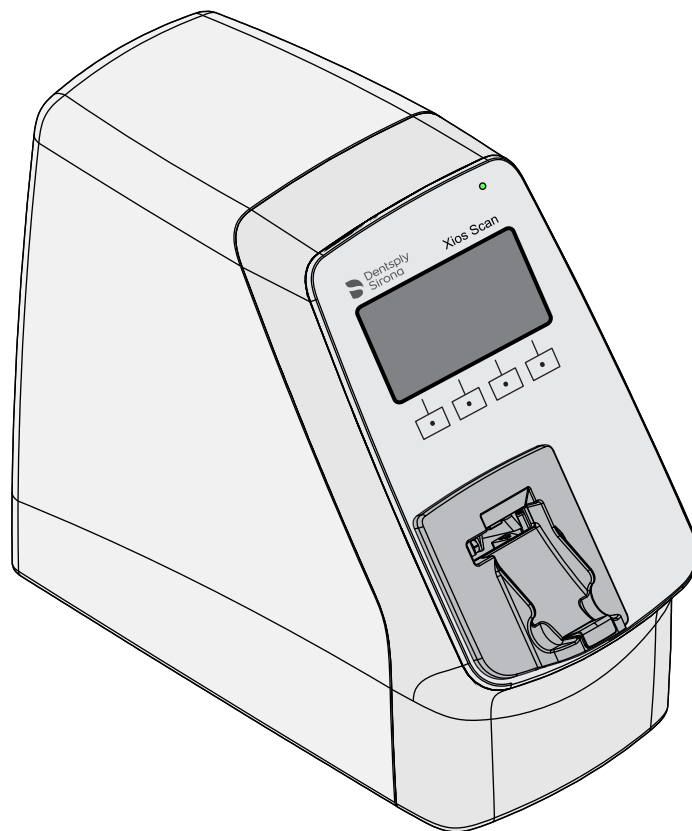


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1 General Information

1.1 User information

We are pleased that you have equipped your dental office with Xios Scan.

This operating manual should be of good help to you before use as well as serve anytime later as a reference material.

We wish you much success and joy with Xios Scan.

Your Xios Scan Team

1.2 General information about this operating manual

Observe the Operating Instructions

Please familiarize yourself with the unit by reading through these Operating Instructions before putting it into operation. It is essential that you comply with the specified warning and safety information.

Always keep the operating instructions handy in case you or another user require(s) information at a later point in time. Save the operating instructions on the PC or print them out.

If you sell the unit, make sure that the operating instructions are included with it either as a hard copy or on an electronic storage device so that the new owner can familiarize himself with its functions and the specified warning and safety information.

Online portal for technical documents

We have set up an online portal for the Technical Documents at <http://www.dentsplysirona.com/manuals>. There, you can download these operating instructions and further documents. Please complete the online form if you would like a hard copy of a particular document. We will then be happy to send you a printed copy free of charge.

Help

If you require additional help despite having thoroughly studied the Operating Instructions, please contact your dental depot.

1.3 General conventions and structure of the document

1.3.1 Structure of the document

1.3.1.1 Identification of the 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 slight bodily injury.

NOTE

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 for simplifying work.

1.3.1.2 Designation of hazard symbols

Icon	Designation
	Failure to follow the instructions may have an adverse affect on the functions of the system.
	Incorrect operation by the user may cause malfunctions and hazards.
	Laser is in operation. Do not stare directly into the laser beam.
	Risk of electric shock when accessing areas of the system marked with this symbol.

1.3.1.3 Formats and symbols used

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

✓ Prerequisite 1. First action step 2. Second action step - or ➤ Alternative action ↪ Result ➤ Individual action step	Prompts you to do something.
See "Formats and symbols used [→ 9]"	Identifies a reference to another text passage and specifies its page number.
• List	Designates a list.
"Command / menu item"	Indicates commands, menu items or quotations.

1.3.2 Notes to the repository

It is mandatory to keep this operating manual in an easily accessible place at all times for the purpose of later reference. In the event of a sale of the device to another user, make sure that the device is supplied along with the operating manual, so that the new owner can get acquainted with the operation and the appropriate precautions and warnings

1.4 Scope of this operating manual

Device variants

This operating manual is valid for the following devices:

Xios Scan

Firmware

This document is valid for a device with a firmware version from:

Version 2.1

1.5 Other relevant documents

The X-ray system includes other components, such as PC software, which are detailed in other documents. Instructions and warning and safety information provided in the following documents must be taken into account:

- SIDEXIS 4 REF user manual 64 47 028
- SIDEXIS XG REF user manual 59 62 134
- Operator manual for imaging plate REF 64 79 583

Keep these documents handy at all times (file them in the X-ray System Logbook in the FR of Germany).

The system installer must complete the enclosed declaration of conformity.

1.6 Warranty and liability

Maintenance

In the interest of the safety and health of patients, users and other persons, inspection and preventive maintenance must be performed at scheduled intervals to ensure the operational reliability and functional safety of your product (IEC 60601-1 / DIN EN 60601-1 etc.).

The system owner is responsible for making sure that all scheduled inspections and preventive maintenance activities are performed.

As manufacturers of medical electrical equipment we can assume responsibility for the safety-related features of the equipment only if maintenance and repair are carried out only by ourselves or agencies expressly authorized by us, and if components affecting safe operation of the system are replaced with original spare parts upon failure.

Exclusion of liability

In the event that the system owner fails to fulfill the obligation to perform scheduled inspections and preventive maintenance activities or ignores error messages, Sirona Dental Systems GmbH and its authorized dealers cannot assume any liability for damages.

Certificate of work

We suggest that you request a certificate, showing the nature and extent of the work performed, from those who carry out such work, and specify that the certificate show any changes in rated parameters or working ranges, as well as the date, the name of the firm and a signature.

1.7 Intended Use

The Xios Scan imaging system is intended for capturing, digitization and processing of intra-oral x-ray images stored on imaging plate recording media.

1.8 Indication and contraindication

Indication

Display of hard tissue in dental radiology in the sub-areas:

- Conservative dentistry
- Caries diagnosis, with particular regard to proximal lesions
- Endodontics
- Periodontics
- Prosthodontics
- Surgical dentistry
- Implantology
- Oral and maxillofacial surgery

Contraindications

- Display of cartilage structures
- Display of soft tissue

1.9 Qualifications of operating personnel

The system may only be operated by skilled or properly trained personnel.

Personnel undergoing education or training, or who are using the unit as part of general training may only operate the unit under the constant supervision of an experienced person.

1.10 Contact information

Customer service center

For technical questions, use the contact form on the internet at the following address:
<http://srvcontact.sirona.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 Safety Instructions

2.1 General safety information

- Read this operating manual carefully before operating the device and observe the safety instructions.
- Observe the applicable documents listed in this operating manual.
- Observe the local laws and regulations when operating the device. The operator is responsible for the trouble-free use of the device for the purpose of compliance with the regulations and guidelines.
- The installation and commissioning may only be performed by trained or instructed personnel.
- Repair and maintenance works, which are not described in this operating manual may only be performed by trained and instructed personnel.
- Before each use, check the functional safety and proper condition of the device.
- The device must not be operated in explosive or combustive areas, e.g. when using flammable anesthetics, skin cleansers or oxygen.

2.2 Protection against electric current

WARNING

Voltage

- Before commissioning, check the scanner and the electrical leads for any damage. Damaged cables, plugs and sockets must be replaced immediately. If the scanner cables or casing are damaged, do not use the scanner any more and send it to us.
- Never touch the patient and an open plug connection of the scanner at the same time.
- Have electrical work done on the scanner only by appropriately trained personnel.

2.3 Mechanical safety

CAUTION

Mechanical safety precautions

- ✓ When the slide is retracted, this prevents the operator from coming into contact with moving parts.
- Never touch the lid during operation.
- Do not insert the imaging plates in the slide or remove them from the scanner by force.

2.4 Protection against laser radiation

Laser safety

The imaging plates are scanned and read by laser. The laser is located in the housing and is not visible during normal operation.

WARNING

Eye injury by laser radiation

The scanner is classified as laser class 1 (casing and optics in front of the laser beam).

- Do not open the flap in front of the slide during the scan process.
- Do not open the casing of the scanner. The casing of the scanner may only be opened by authorized personnel.
- Never look directly into the laser beam. If the laser beam is incident directly on the eye, eyesight may be damaged.

2.5 Hygiene

Suitable hygienic measures must be taken to prevent cross contamination between patients, users and other persons.

The correct handling of the imaging plates must be followed precisely.

Please refer to Preparing the imaging plate for an exposure [→ 36] and the operating manual for the imaging plate (REF 64 79 583).

Only use the imaging plates with a bite guard and hygienic protective sleeve. Bite guards and hygienic protective sleeves are single use devices.

Single use devices are identified with the symbol shown on the left. (Printed on the packaging.) Dispose of single use devices immediately after use. Do not use single use devices more than once.

Disinfect the imaging plate (sealed in a hygienic protective sleeve) before placing it into the mouth of the patient and after it has been taken from the mouth of the patient. See Positioning imaging plates [→ 38] and After exposure [→ 41].



2.6 Toxic substances

WARNING

Imaging plates contain toxic substances

- Only place the imaging plates with hygienic protective sleeve and bite guard in the mouth of the patient.
- Before placing the imaging plate, advise the patient not to bite, chew on, or swallow the imaging plate during the exposure.
- If a patient damages the imaging plate, the bite guard or the hygienic protective sleeve the mouth must be rinsed immediately.
- Seek immediate medical attention if the imaging plate is swallowed.

2.7 Protection from sunlight

The imaging plate is light sensitive.

Environmental requirements and measures

- Do not expose the scanner to direct sunlight.
- Do not expose the imaging plates to sunlight, light from fluorescent bulbs, or light from halogen lamps when placing them in the scanner.
- In order to avoid bright ambient light, the scanner should not be placed near windows.
- Work with low ambient lighting in the following situations (the light intensity may be 1000 Lux maximum):
 - Unpacking the imaging plates.
 - Attaching the bite guard on the imaging plate.
 - Placing the imaging plate in the scanner.

2.8 PC system and software

The data connection to the PC must be secured during the scan process. Under Power Options on the control panel set the PC so that it never switches to stand-by operation or goes to sleep.

SIDEXIS may not be terminated until the end of the scan process. Before image acquisition, close all programs that are not required for the operation of SIDEXIS. Any programs running in the background, such as media players, print managers, backup software, etc., may cause SIDEXIS to crash during the scan. In cases of doubt, consult your system administrator.

These operating instructions are based on the assumption that you are familiar with the SIDEXIS software.

2.9 Allocation of acquisition system to patient

During routine practice, the clear allocation of the acquisition system to the patient to be examined is ensured. This also applies to the allocation of the X-rays to the patient data stored by SIDEXIS XG / SIDEXIS 4.

2.10 IT security

- Have the scanner incorporated into your IT network by the responsible system administrator.
They will need to implement the measures described in the "Network installation" section.

Unexpected problems and risks may occur through connecting your scanner to your IT network and these may require additional analyses.

2.11 Trouble-free operation

Use of this unit is permissible only if it works properly without malfunctions. If trouble-free operation cannot be ensured, the unit must be taken out of service, checked by authorized technicians for malfunctions and, if necessary, repaired or replaced.

2.12 Maintenance

We suggest that you request a certificate showing the nature and extent of the work performed from those who carry out such work; it must contain any changes in rated parameters or working ranges (if applicable), as well as the date, the name of the company and a signature.

2.13 Changes and extensions to the device

Modifications to this unit which might affect the safety of the system owner, patients or other persons are prohibited by law.

For reasons of product safety, this product may be operated only with original accessories from the manufacturer or third-party accessories expressly approved by the manufacturer. The user is responsible for any damage resulting from the use of non-approved accessories.

If any units not approved by the manufacturer are connected, they must comply with the applicable standards, e.g.:

- Any PC which is set up within the patient environment must be approved for medical units in accordance with IEC 60601-1.
- Any PC which is set up outside the patient environment may be approved for data-processing units in accordance with IEC 60950-1 or IEC 62368-1.

In case of doubt, contact the manufacturer of the system components.

2.14 Combination with other units

Permissible combinations are specified in the Declaration of Conformity by the system integrator.

2.15 Compliance

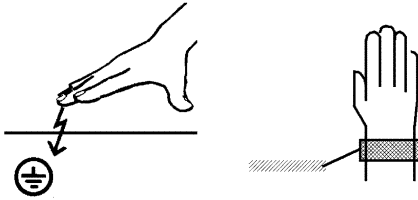
Any person who assembles or modifies a medical electrical system complying with the standard EN 60601-1 by combining it with other equipment is responsible for ensuring that the requirements of this regulation are met to their full extent for the safety of the patients, the operators and the environment.

2.16 Cellular phones

Mobile RF communications equipment may interfere with medical electrical equipment. Therefore, the use of mobile wireless phones in practice or hospital environments must be prohibited.

2.17 Electrostatic discharge

Protective measures



Electrostatic discharge (abbreviated: ESD – **E**lectro**S**tatic **D**ischarge)

Electrostatic discharge from people can damage electronic components when the components are touched. Damaged components usually have to be replaced. Repairs must be performed by qualified personnel.

Measures to protect against ESD include:

- Procedures to avoid electrostatic charging via
 - air conditioning
 - air humidification
 - conductive floor coverings
 - non-synthetic clothing
- discharging the electrostatic charges from your own body through contact with
 - a metallic unit casing
 - a larger metallic object
 - any other metal part grounded with the protective earth



Areas at risk are indicated on the unit with the ESD warning label:

We recommend that all persons working with this system are made aware of the significance of the ESD warning label. A training course should also be held to inform users about the physics of electrostatic charges.

Physics of electrostatic charges

An electrostatic discharge requires prior electrostatic charging.

There is a danger of electrostatic charges building up whenever two bodies rub against each other, e.g. when:

- walking (soles of shoes against the floor) or
- moving (chair casters against floor).

The amount of charge depends on several factors: The charge is:

- higher at low air humidity than at high air humidity, and
- higher with synthetic materials than with natural materials (clothing, floor coverings).

The following rule of thumb can be applied to assess the transient voltages resulting from an electrostatic discharge.

An electrostatic discharge is:

- perceptible at 3,000 V or higher
- audible at 5,000 V or higher (cracking, crackling)
- visible at 10,000 V or higher (arc-over)

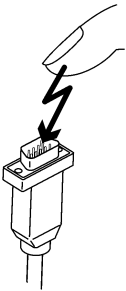
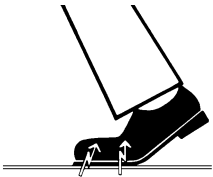
The transient currents resulting from these discharges have a magnitude of over 10 amps. They are not hazardous for humans because they last for only several nanoseconds.

Tip: 1 nanosecond= 1/1,000,000,000 second= 1 billionth of a second

Voltage differentials exceeding 30,000 volts per centimeter may lead to a charge transfer (electrostatic discharge, lightning, spark-over).

Integrated circuits (logical circuits and microprocessors) are used in order to implement a wide variety of functions in a device. The circuits must be miniaturized to a very high degree in order to include as many functions as possible on these chips. This leads to structure thicknesses as low as a few ten thousandths of a millimeter. Integrated circuits that are connected to wires leading externally are therefore particularly at risk from electrostatic discharge.

Even voltages that are imperceptible to the user can cause breakdown of the structures, thus leading to a discharge current that melts the chip in the affected areas. Damage to individual integrated circuits may cause malfunction or failure of the unit.



3 Scope of delivery

IMPORTANT

Ordering spare parts and accessories

You can find the required order numbers in the section Accessories and consumables [→ 99].

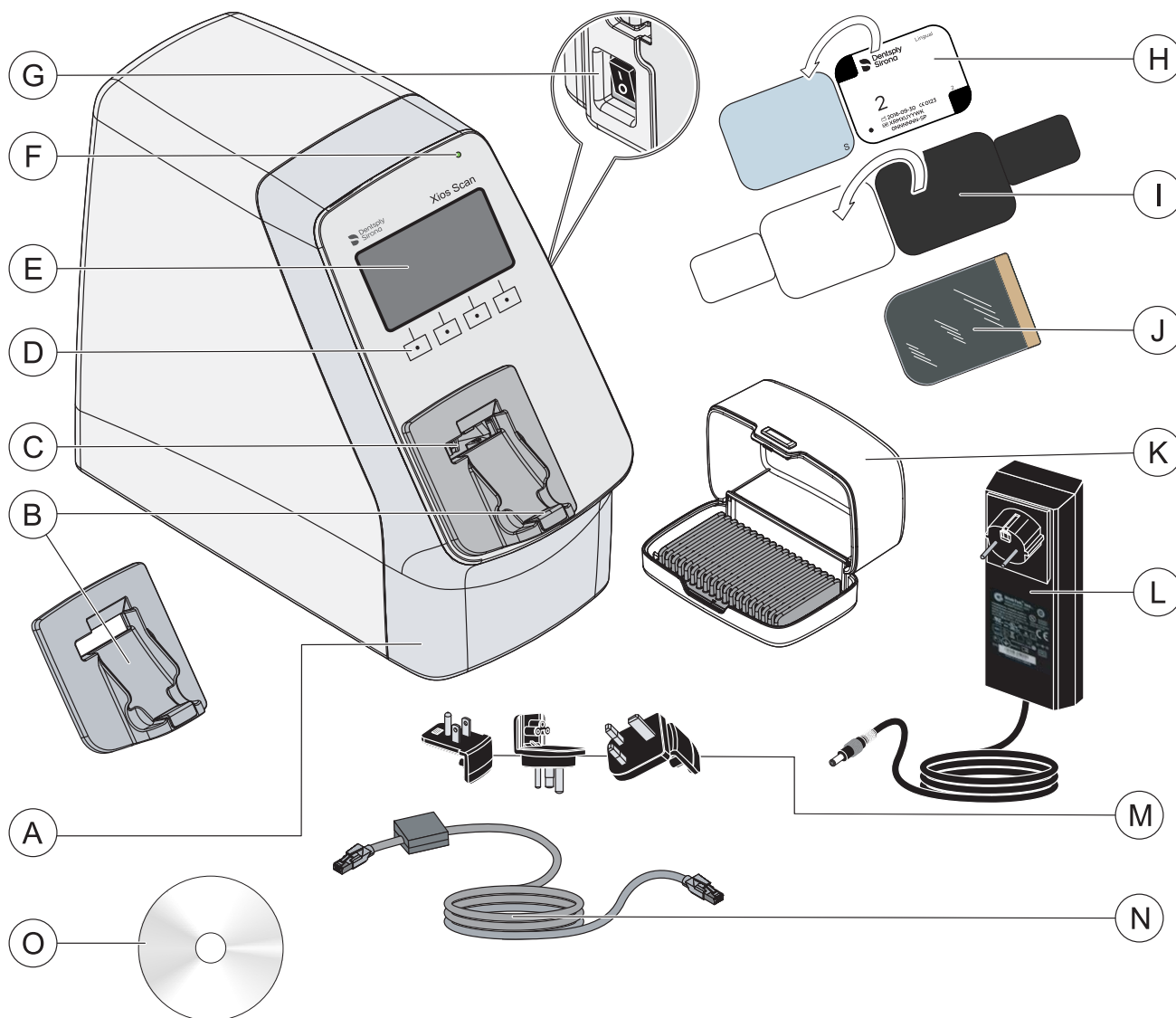
1. Check whether the packaging is intact at delivery.
2. Check the delivery for completeness.
3. Dispose of packaging in an environment-friendly manner.

The following is included in the scope of supply:

- Scanner
- Collection tray
- Power supply unit
- LAN cable with ferrite
- SİDEXIS Plugin for Xios Scan
- Imaging plates size 0 (1x 2 pcs.)
- Imaging plates size 2 (2x 2 pcs.)
- Bite guard size 0 (1x 100 pcs.)
- Bite guard size 2 (1x 100 pcs.)
- Hygienic protective sleeves size 0 (1x 100 pcs.)
- Hygienic protective sleeves size 2 (1x 100 pcs.)
- Transport and storage box with mat

4 System description

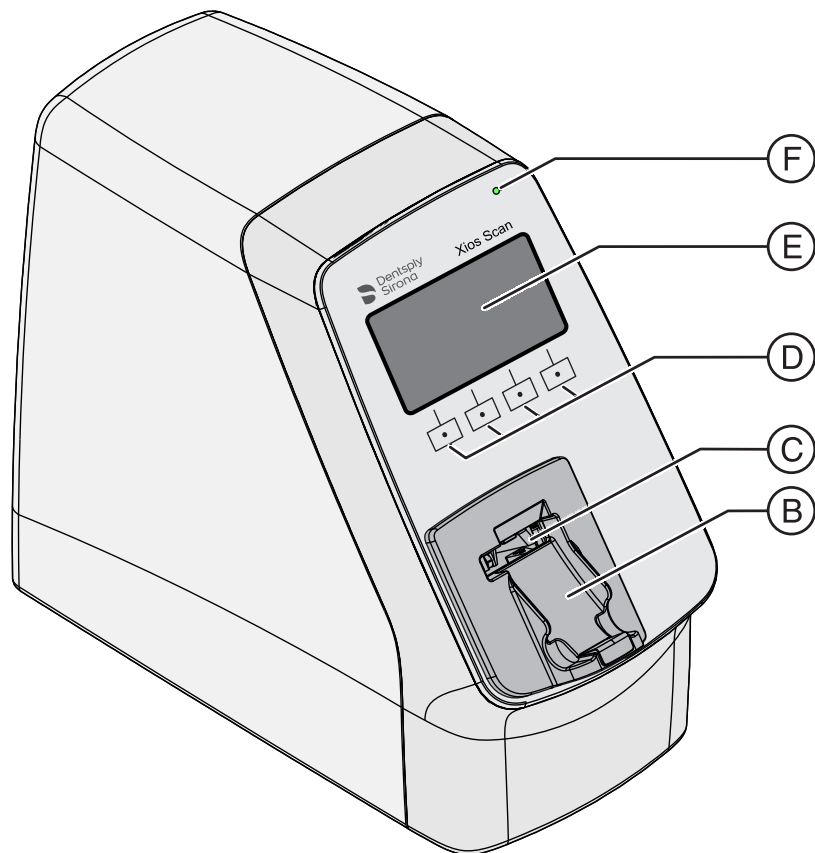
4.1 System design



A	Scanner	I	Bite guard
B	Collection tray	J	Hygienic protective sleeve
C	Slide / lid	K	Transport and storage box
D	Control buttons	S	Power supply unit with adapters
E	Display	M	Adapter
F	Power LED	N	LAN cable with ferrite
G	Power switch (rear side)	O	CD with SIDEXIS Plugin for Xios Scan
H	Imaging plate		

4.2 Xios Scan Scanner

Overview



Power LED

The power LED (F) indicates the operating status of the scanner:

- LED is lit up: The scanner is switched on.
- LED is not lit: The scanner is switched off.
- LED flashes: Boot process

Display

The display (E) shows different information, e.g. the status of the scanner or patient data. The display is not a touchscreen.

Control buttons

The scanner is controlled using the control buttons (D) beneath the display.

The buttons are assigned various functions depending on the display screen.

The function of the buttons is indicated in the bottom part of the display directly below the buttons.

Collection tray

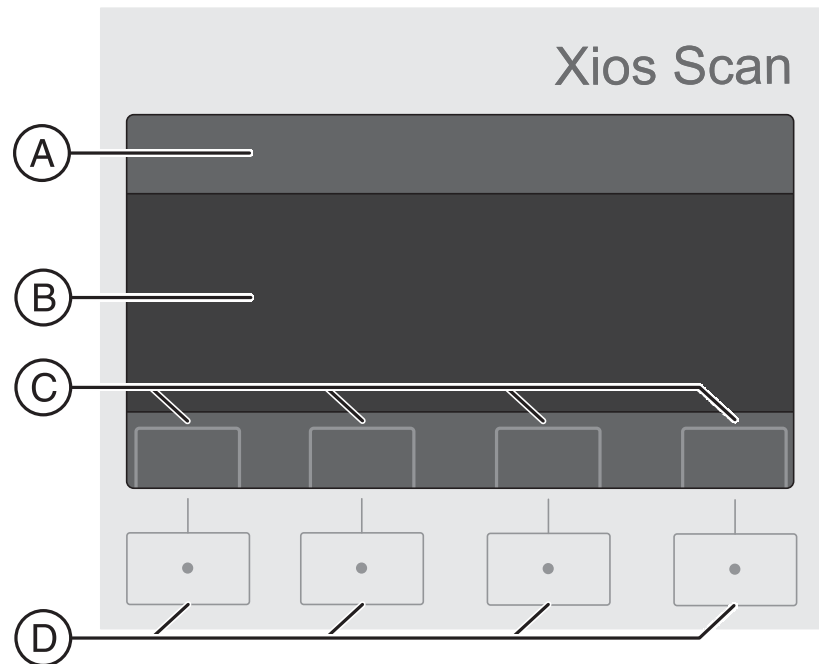
As soon as the scan process is complete, the imaging plate is ejected and falls into the collection tray (B). Multiple imaging plates can be caught in the collection tray.

Slide / lid

The imaging plate is transported to the scanner via the slide (C). The slide moves in and out to allow the user to insert and eject the imaging plates. There is a lid in front of the slide to protect the slide. The lid opens and closes automatically.

Controls

The control panel has the following structure:



Information field (A)

The information field line contains information on the order.

Action field (B)

The action field displays ongoing or pending actions.

Icon field C

The icon field shows the function of keys below the display. Depending on the action in progress, the function of the buttons changes.

Keypad (D)

The scanner is controlled by pressing the buttons on the keypad.

IMPORTANT

The display is not a touchscreen!

The scanner is operated solely using the keypad.

4.3 Description of the SIDEXIS Plugin for Xios Scan

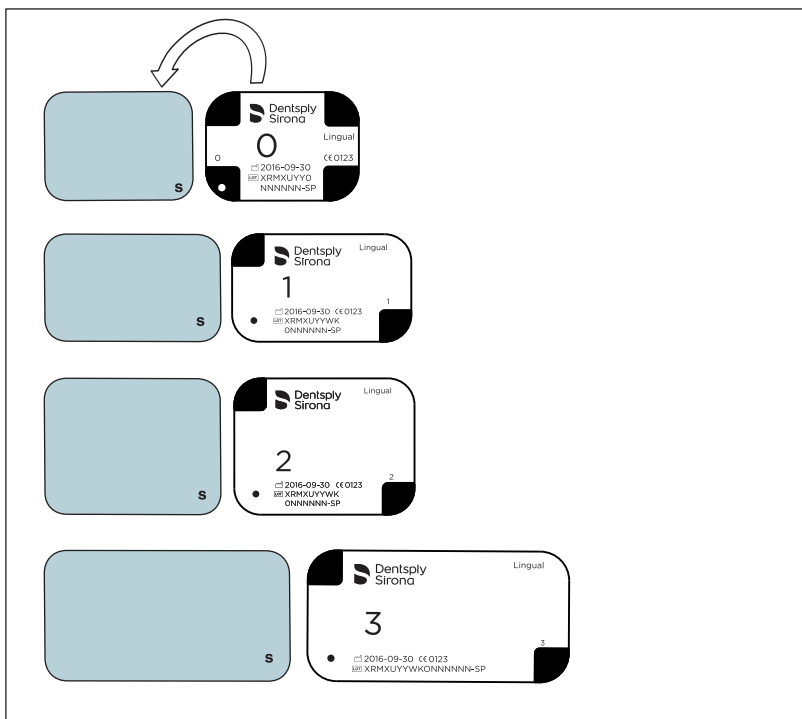
The SIDEXIS plugin for XIOS Scan offers the following functionalities:

- Collecting X-ray exposures from imaging plates
- Optimizing X-ray exposures

In addition, the SIDEXIS 4 or SIDEXIS XG image processing functions are available for all exposures. For more information on this, see the SIDEXIS 4 or SIDEXIS XG user manual.

4.4 Accessories

Imaging plates

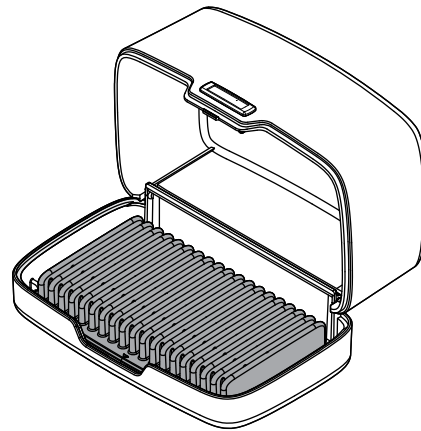


Imaging plates are used as an exposure medium for X-rays and save the image data. The imaging plates have an active (blue) and an inactive (printed) side. Imaging plates are available in four sizes.

The imaging plate must always be exposed on the active (blue) side.

After the scanning process, the exposures are automatically erased from the imaging plate.

Transport and storage box

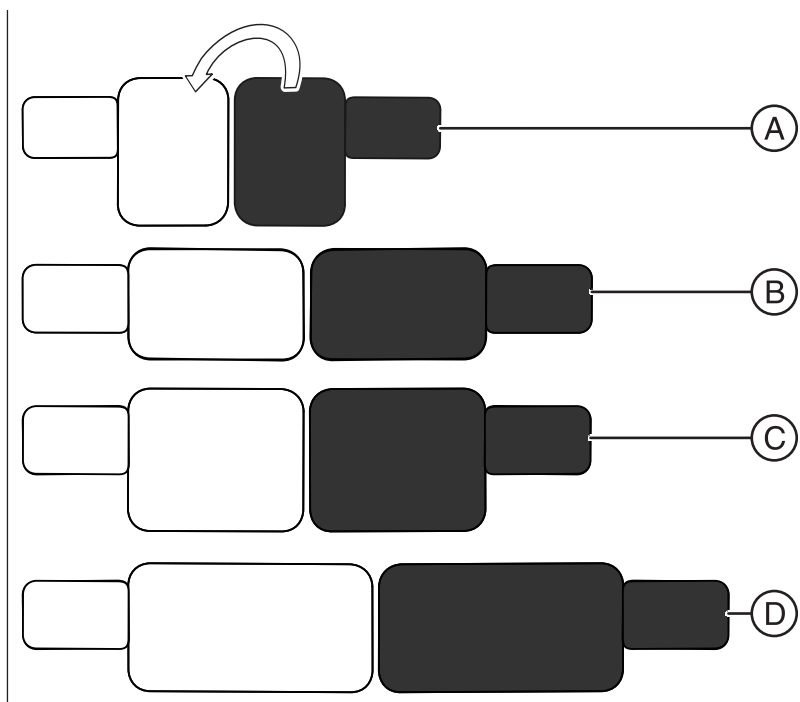


The transport and storage box is used to transport and store packaged imaging plates:

- For the temporary transporting of exposed imaging plates.
- For the storage of unexposed imaging plates.

4.5 Consumables

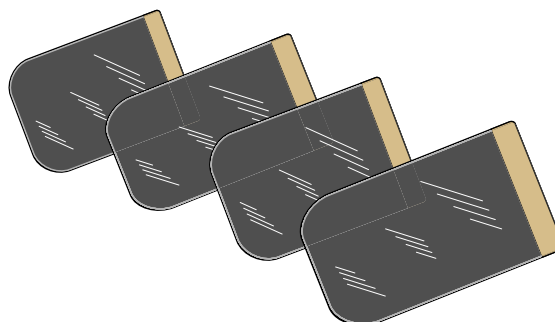
Bite guard



A	Bit guard size 0
B	Bit guard size 1
C	Bit guard size 2
D	Bit guard size 3

The bite guard serves as additional mechanical protection for the imaging plate, as well as protection against direct sunlight / ambient light when placing the imaging plate into the scanner.

Hygienic protective sleeves



The hygienic protective sleeves protect the imaging plates against contamination and dirt from the outside environment. In addition, they minimize the loss of image data on the imaging plates caused by the ambient light.

4.6 Technical data

4.6.1 Scanner

General data		
Dimensions (L x W x H)	mm	363 x 163 x 286
Weight	kg	7.3
Heat dissipation		Self-heating about 35 °C. At ambient temperature 25°C
Pixel size	µm	23
Theoretical resolution	Line pairs/mm (LP/mm)	22

Electrical data scanner		
Voltage	VDC	24 ±5%
Maximum power consumption	A	1.5
Output	W	<30
Protection type		IP20
Protection class		II

Electrical data of power supply unit		
Manufacturer		GlobTek
Model number		GTM91099-6024-T3A
Voltage		
Input:	VAC: A	100 - 240 ±2%: 1.5
Output:	VDC: A	24 ±2%: 2.5
Frequency:	Hz	50–60
Output	W	60
Protection type		IP20
Protection class		I

Classification		
Medical device class		Class II a
Laser protection class		1
As per IEC 60825-1:2014; A1:2002-07 + A2:2001-03		

Laser source		
Laser class		3B
As per EN 60825-1:2014; A1:2002-07 + A2:2001-03		
Wavelength	nm	660
Output	mW	< 12

4.6.2 Imaging plate

Dimensions of imaging plate for intraoral application		
Size 0	mm	31 x 22
Size 1	mm	24 x 40
Size 2	mm	31 x 41
Size 3	mm	27 x 54

Classification		
Medical device class		Class IIa

4.6.3 Operating and transport conditions

Scanner

operation	
Operating mode	Scan operation
Temperature	+10 to +40 °C
Relative humidity	0% – 90%
Air pressure	700 - 1060 hPa
Degree of contamination	2 according to IEC 60664-1
Max. installation height	3000 m

Storage and transport	
Temperature	-40°C – +70°C
Relative humidity	10% – 90%
Air pressure	500 - 1060 hPa
Max. storage height	3000 m

Imaging plates

operation	
Temperature	+10 to +40 °C
Relative humidity	0 % – 90 %

Storage and transport	
Temperature	-40°C – +70°C
Relative humidity:	10 % – 90 %

4.7 Certification

The unit, among other things, complies with the following standards. It complies with the requirements of these regulations:

- IEC 60601-1 (Electro-Medical Devices - Part 1: General Requirements for Safety)
- IEC 60601-1-2 (Medical electrical equipment - Part 1: General requirements for safety; 2. Collateral standard: Electromagnetic compatibility - Requirements and tests)

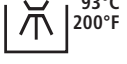


This product bears the CE mark in accordance with the provisions of the Council Directive 1993/42/EEC of June 14, 1993 concerning medical devices.

Original language of the present document: German

4.8 Symbols

Symbols attached to the unit and their meaning

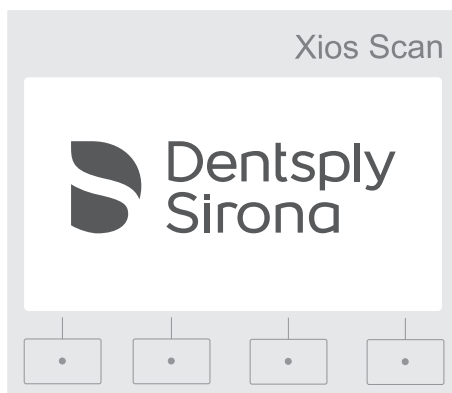
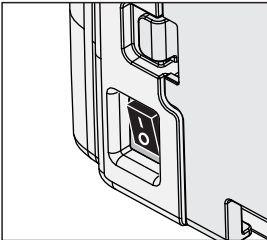
Symbol	Meaning
	Unit with protection class II in accordance with IEC 60601-1
	Please refer to manual first
	CE mark in accordance with Council Directive 93/42/EEC, stating the manufacturer's Notified Body.
	Year of manufacture with manufacturer's address
	Denotes thermally disinfectable accessories.
	Item is only approved for one-off use.
	Refers to Directive 2012/19/EU and EN 50419 Do not dispose of device with domestic waste
	Observe accompanying documents
	Alternating current
	Direct current
	PE protective ground conductor symbol grounding for protection class I
	Only suitable for indoor applications

5 Operation

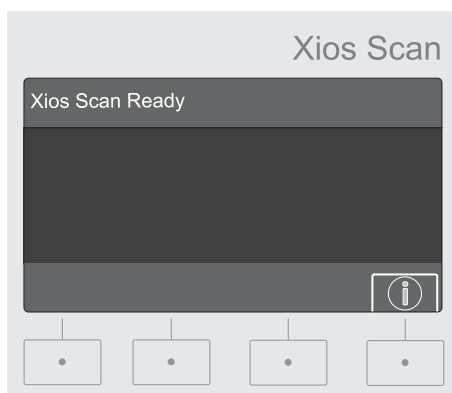
5.1 Switching the scanner on and off

Switching on the scanner

- Switch the scanner on at the power switch.



- ✎ The scanner boots up and a self-test is displayed. During this time, the power LED flashes and the start screen is displayed.



- ✎ After the self-test, the scanner is ready for use. The standard display *""Scanner Name" Ready"* will appear.

If the scanner has not been used for a predefined period, it will switch to standby mode. The time it takes to enter standby mode can be specified in the settings dialog. See Scanner settings [→ 71].

IMPORTANT

The scanner will only switch to standby mode if there are no rescue exposures and no errors.

Switching off the scanner

NOTE

Do not turn off the scanner during the scanning process.

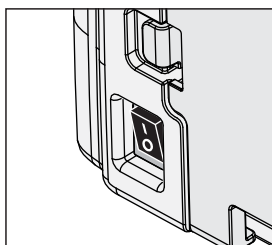
Turning off the scanner will cancel the scanning process.

An incomplete X-ray exposure might be displayed on the PC.

The imaging plate may become unusable.

Before switching the scanner off, check the following:

- ✓ All scan processes have been finished.
- ✓ There is no imaging plate in the scanner.
- ✓ The slide is moved in.
- Switch the scanner off at the power switch.



5.2 How to handle imaging plates, single use items and accessories properly

Information for handling imaging plates



IMPORTANT

Imaging plates are light-sensitive.

Optimum image quality cannot be ensured once an imaging plate has been exposed to light.

- Protect the imaging plates from sunlight, light from fluorescent bulbs, and light from halogen lamps.

IMPORTANT

Optimum image quality cannot be ensured if an imaging plate has become scratched or damaged.

- Do not bend or fold the imaging plates.
- Protect the imaging plates from being scratched by sharp or pointed objects.
- Replace scratched or damaged imaging plates.

IMPORTANT

Marks on the active (blue) side reduce image quality.

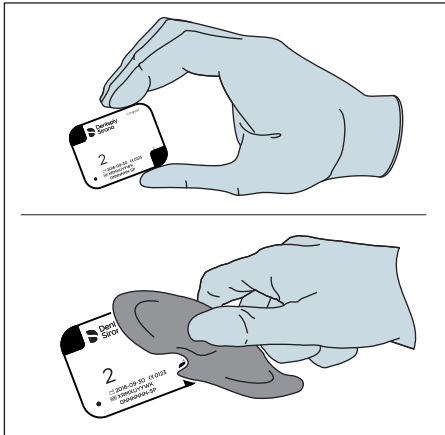
- Always wear gloves when working with imaging plates.
- Hold the imaging plate at the edges only.

WARNING

Imaging plates contain toxic substances

- Only place the imaging plates with hygienic protective sleeve and bite guard in the mouth of the patient.
- Before placing the imaging plate, advise the patient not to bite, chew on, or swallow the imaging plate during the exposure.
- If a patient damages the imaging plate, the bite guard or the hygienic protective sleeve the mouth must be rinsed immediately.
- Seek immediate medical attention if the imaging plate is swallowed.

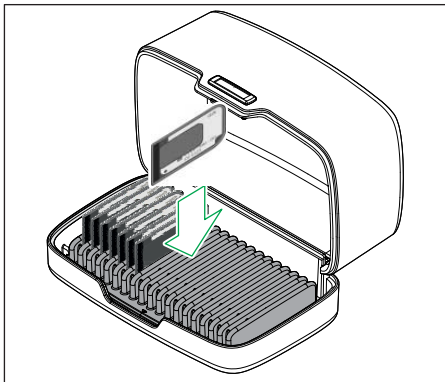
Cleaning imaging plates



Remove humidity and dirt from the imaging plate carefully with a dry cotton cloth.

Disinfect the imaging plate sealed in a hygienic protective sleeve before placing it inside the mouth of a patient. See Positioning imaging plates [→ 38]

Storing imaging plates properly



Store away imaging plates until the next time they are required in a suitable, lightproof container; e.g. in a transport and storage box. Store away the transport and storage box away from sunlight; e.g. in a cabinet.

We recommend keeping imaging plates packed in bite guards and hygienic protective sleeves.

IMPORTANT

In the event of long-term storage, imaging plates may be pre-exposed to ambient light or natural radiation.

- Manually erase the imaging plates prior to first use and after storage times of over one week. See Erasing imaging plates manually [→ 67]



Instructions for safe handling of bite guards and hygienic protective sleeves

To protect against mechanical damage, contamination and ambient light, the imaging plates are pushed into a bite guard and sealed in a hygienic protective sleeve.

WARNING

Risk of contamination and spreading of illness

Bite guards and hygienic protective sleeves are single use devices.

- Use a new bite guard and a new hygienic protective sleeve for each exposure.

WARNING

Risk of contamination and spreading of illness

To maintain impermeability, the hygienic protective sleeves must be stored correctly.

- Store the hygienic protective sleeves at room temperature.
- Protect the hygienic protective sleeves against dust and moisture.
- Do not expose the hygienic protective sleeves to direct sunlight.

WARNING

- Use only the hygienic protective sleeves approved by the manufacturer.

Instructions for safe handling of the transport and storage box.

Transport and storage boxes can be used for temporary transport and for storing imaging plates.

WARNING

Exposed imaging plates may be contaminated

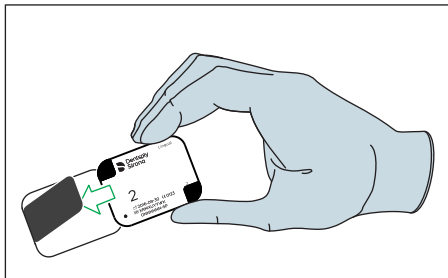
Risk of cross-contamination and spreading of illness

- Do not store exposed imaging plates in the same transport and storage box as unexposed imaging plates.
- If you use the transport and storage box to transport exposed imaging plates and to store unexposed imaging plates, then use separate transport and storage boxes to do so.
- Store unexposed imaging plates only in a disinfected transport and storage box.
- Do not store any imaging plates which are not sealed in a hygienic protective sleeve in the transport and storage box.
- Clean and disinfect the transport and storage box and the mat regularly; see Cleaning and disinfecting the transport and storage box [→ 66]

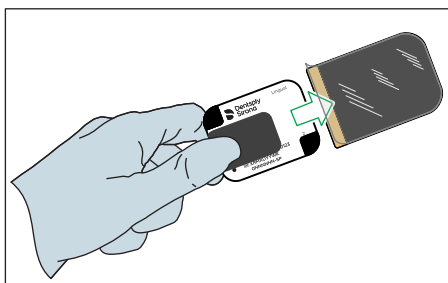
5.3 Preparing the imaging plate for an exposure

Pushing an imaging plate with a bite guard into a hygienic protective sleeve

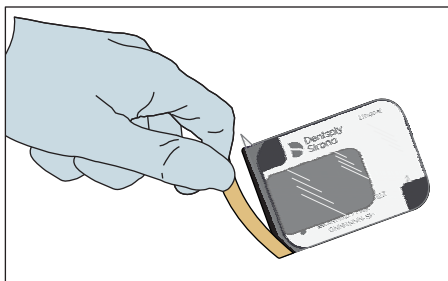
1. Select the correct sized bite guard for the imaging plate.
2. Push the imaging plate into the bite guard.



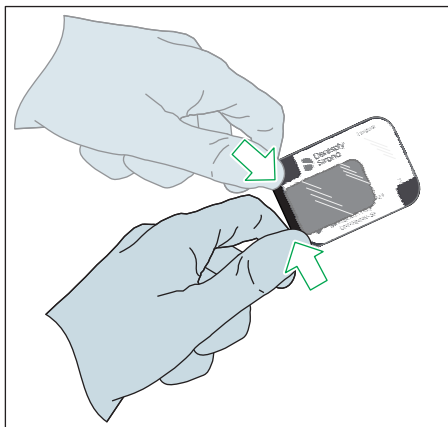
3. Select the correct sized hygienic protective sleeve for the imaging plate. Insert the imaging plate with the bite guard into the hygienic protective sleeve.



4. Remove the adhesive strip from the strap.

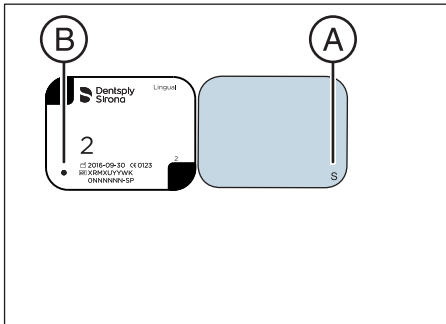


5. Close the hygienic protective sleeve by pressing the straps together.



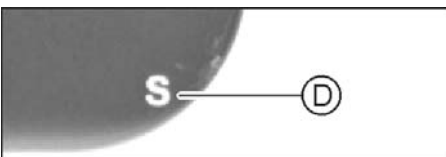
5.4 Aligning imaging plates

"s" mark on the imaging plates



To aid in the alignment, a letter "s" (pos. A) is printed on the side of the imaging plate to be exposed.

The same position is marked with a spot on the side of the imaging plate not to be exposed (B).

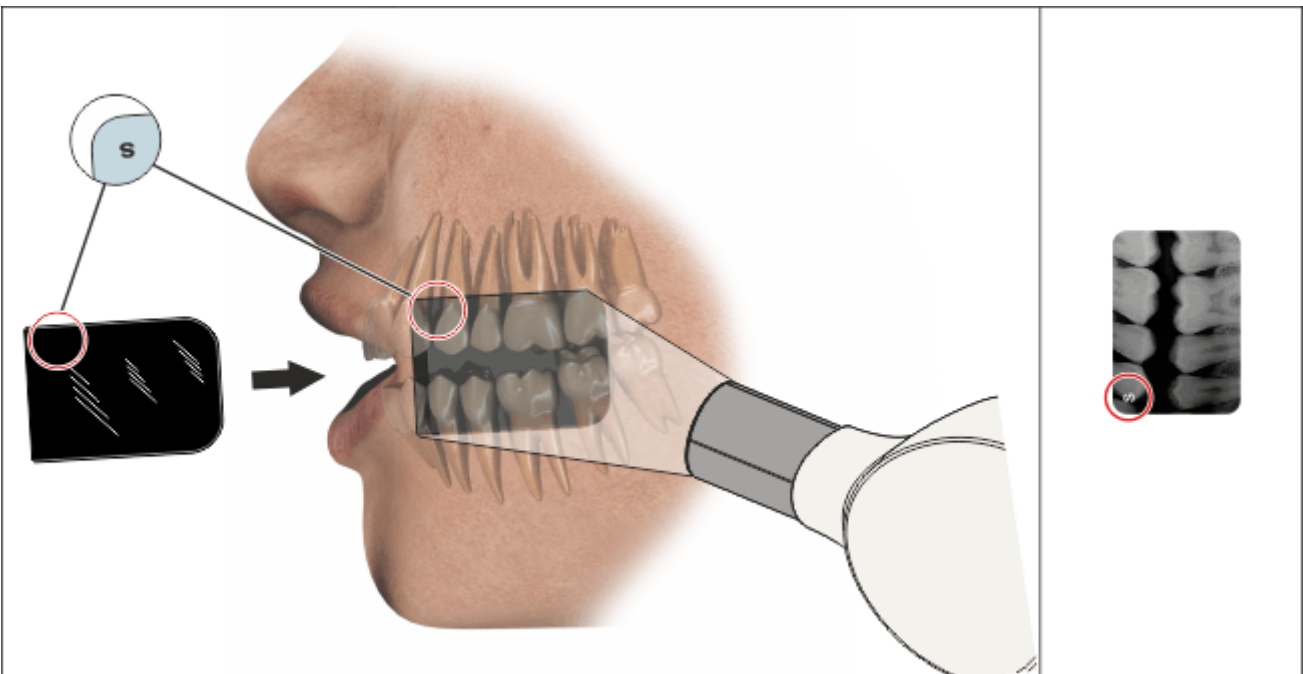


The same position is also marked on the X-ray image with a letter "s" (pos. D).

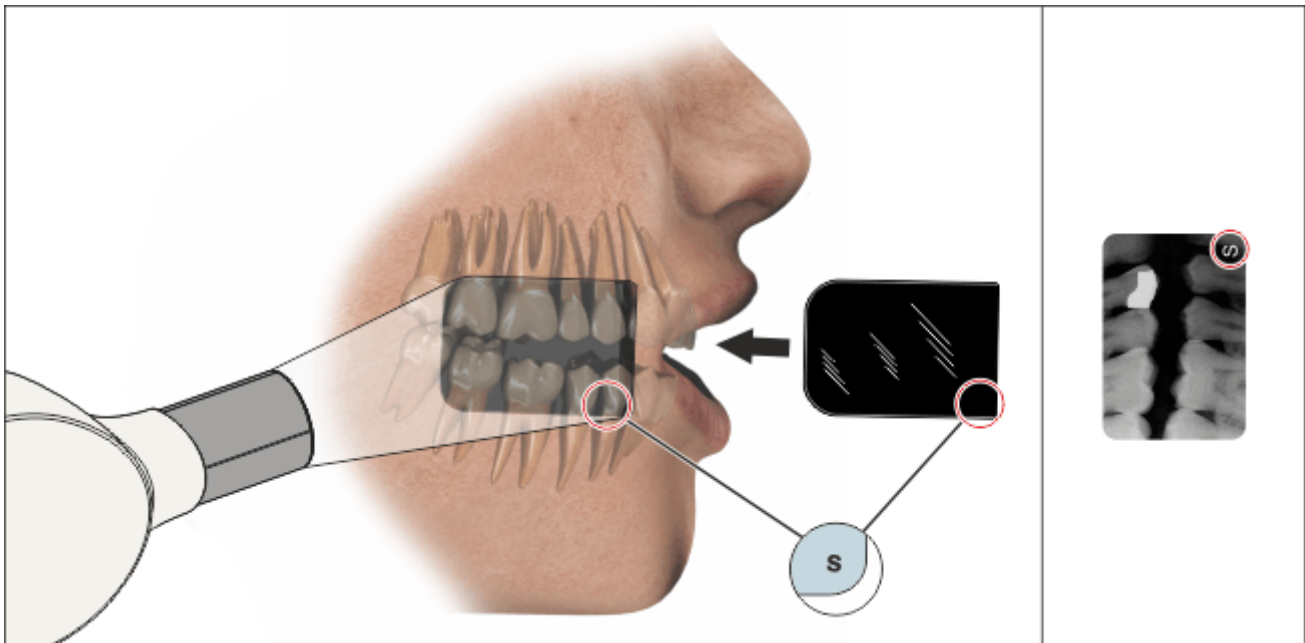
- Position the imaging plate such that the strap of the hygienic protective sleeve does not go into the patient's mouth.

Examples of aligning imaging plates

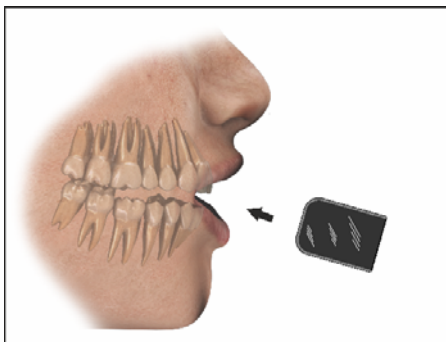
Left bite-wing exposure



Right bite-wing exposure



5.5 Positioning imaging plates



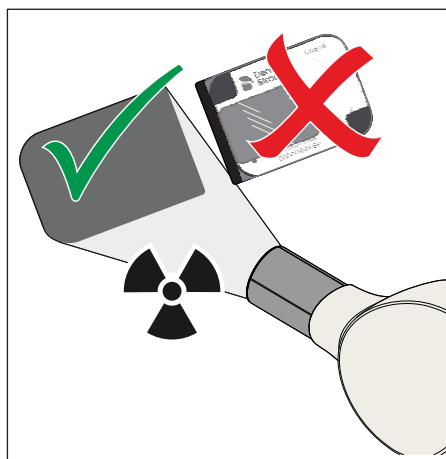
- Position the packaged imaging plate in the patient's mouth. See Aligning imaging plates [→ 37].

IMPORTANT

Using the bracket system

Position the imaging plates with a commercially available bracket system.

Since the positioning of the imaging plates in the beam path of the cone strongly influences the image quality, using the parallel technique with film holders is recommended for optimal positioning of the imaging plates.



IMPORTANT

The active, blue surface of the imaging plate – packaged in the bite guard and hygienic protective sleeve – must always face towards the X-ray tube assembly.

5.6 Recommended exposure times with HELIODENT PLUS

IMPORTANT

The exposure times mentioned here apply to the HELIODENT ^{Plus} X-ray tube assembly.

If you use another X-ray tube assembly, use the exposure parameters for films of sensitivity class E. You can find further information in the operating instructions of the X-ray tube assembly.

IMPORTANT

The exposure times stated here serve as a guideline.

They are used as a basis for determining the exposure times which are optimal for your dental office.

Depending on the size of the patient, body weight and age, longer or shorter exposure times may be required.

Recommended exposure times at 7 mA and with a 200 mm cone

For further information, please refer to the HELIODENT ^{Plus} operating instructions.

Exposure times for adults	with 60 kV	with 70 kV
Maxillary front tooth	0,16 s	0,08 s
Maxillary canine / premolar	0,16 s	0,08 s
Maxillary molar	0,20 s	0,10 s
Mandibular front tooth	0,10 s	0,05 s
Mandibular canine/premolar	0,12 s	0,06 s
Mandibular molar	0,16 s	0,08 s
Bite-wing exposure	0,20 s	0,10 s

Exposure times for children	with 60 kV	with 70 kV
Maxillary front tooth	0,10 s	0,05 s
Maxillary canine / premolar	0,12 s	0,06 s
Maxillary molar	0,12 s	0,06 s
Mandibular front tooth	0,06 s	0,03 s
Mandibular canine/premolar	0,08 s	0,04 s
Mandibular molar	0,12 s	0,06 s
Bite-wing exposure	0,12 s	0,06 s

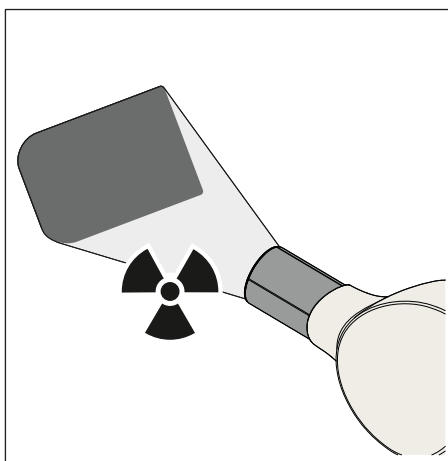
Recommended exposure times at 7 mA and with a 300 mm cone

For further information, please refer to the HELIODENT^{Plus} operating instructions.

Exposure times for adults	with 60 kV	with 70 kV
Maxillary front tooth	0,32 s	0,16 s
Maxillary canine/premolar	0,32 s	0,16 s
Maxillary molar	0,40 s	0,20 s
Mandibular front tooth	0,20 s	0,10 s
Mandibular canine/premolar	0,24 s	0,12 s
Mandibular molar	0,32 s	0,16 s
Bite-wing exposure	0,40 s	0,20 s

Exposure times for children	with 60 kV	with 70 kV
Maxillary front tooth	0,20 s	0,10 s
Maxillary canine/premolar	0,24 s	0,12 s
Maxillary molar	0,24 s	0,12 s
Mandibular front tooth	0,12 s	0,06 s
Mandibular canine/premolar	0,16 s	0,08 s
Mandibular molar	0,24 s	0,12 s
Bite-wing exposure	0,24 s	0,12 s

5.7 Exposing imaging plates



- Trigger the radiation to expose the imaging plates

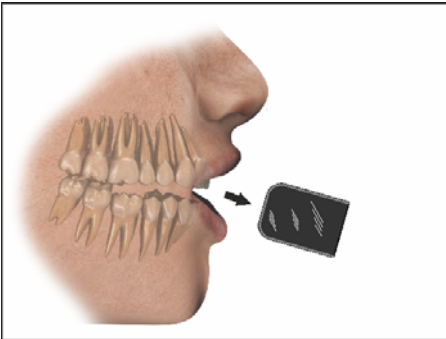
IMPORTANT

Observe the operating instructions of the X-ray tube assembly.

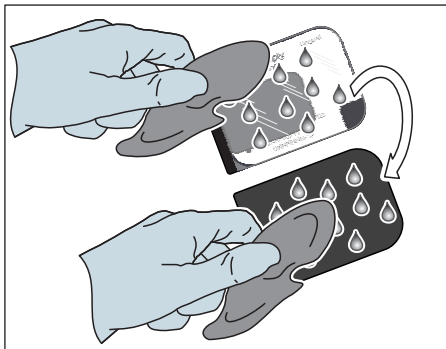
IMPORTANT

Observe the applicable radiation protection regulations.

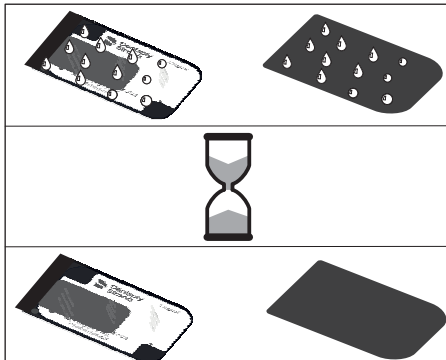
5.8 After exposure



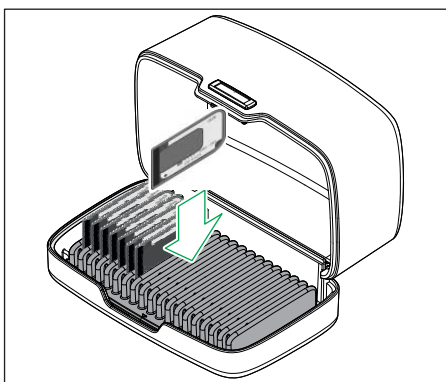
1. Remove the exposed imaging plate from the patient's mouth.



2. Wipe the still-sealed imaging plate with a disinfectant cloth.



3. Allow the disinfectant to fully take effect and dry.



4. To transport imaging plates from the patient to the scanner, you can use the transport and storage box.

Tip: To retain the order of the exposures, insert the imaging plates from back to front in the transport and storage box mat.

- The imaging plate is ready for the scan process.

IMPORTANT

Exposed imaging plates must be protected against ambient light.

- Scan the imaging plates immediately after the exposure, or one hour after the exposure at the latest.
- Only remove the imaging plate from the hygienic protective sleeve immediately before the scanning process. This way it remains protected from ambient light.

 WARNING

Exposed imaging plates may be contaminated

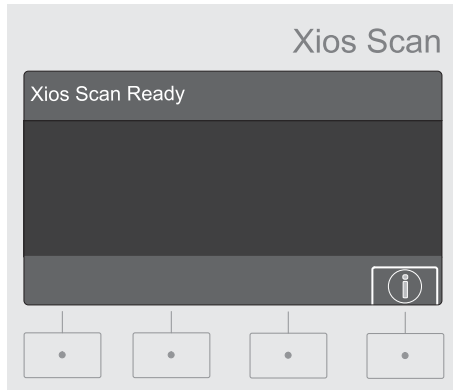
Risk of cross-contamination and spreading of illness

- Do not store exposed imaging plates in the same transport and storage box as unexposed imaging plates.
- If you use the transport and storage box to transport exposed imaging plates and to store unexposed imaging plates, then use separate transport and storage boxes to do so.
- Store unexposed imaging plates only in a disinfected transport and storage box.
- Do not store any imaging plates which are not sealed in a hygienic protective sleeve in the transport and storage box.
- Clean and disinfect the transport and storage box and the mat regularly; see Cleaning and disinfecting the transport and storage box [→ 66]

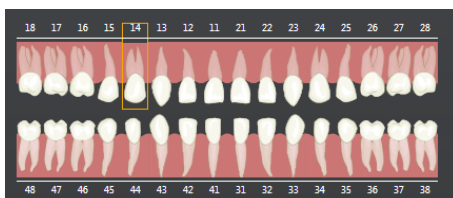
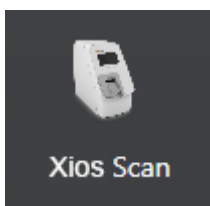
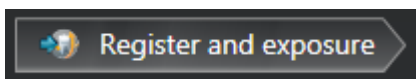
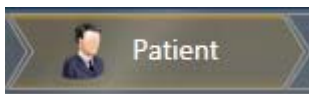
5.9 Getting ready for scanning

5.9.1 Getting ready for scanning with SIDEXIS 4

Logging in patients and opening SIDEXIS Plugin for Xios Scan



- ✓ The scanner is switched on.
- ✓ The following message appears on the display:
"*Scanner Name*" Ready"



1. Start SIDEXIS 4.
2. Click on the "*Patient*" button in the phase bar.
3. Click on the required patient name in the patient list.
4. Click on the "*Register and Timeline*" button to create a new exposure.
5. Click on the symbol for the scanner.
6. Enter the indication or select one (optional).
7. Select one or more tooth regions (optional).
In the SIDEXIS Plugin for Xios Scan, only the first tooth region clicked on here is displayed (underlying indication).

IMPORTANT

For more information on the tooth displays and the dental notation, refer to the SIDEXIS 4 user manual.

8. Click on the "*Next*" button.

- ✚ The connection to the scanner is established. In the SIDEXIS Plugin for Xios Scan, the following message is displayed:
"Initialising Scanner. Please wait..."
- ✚ If the confirmation of patient data is activated, the dialog for confirming patient data is displayed.
- ✚ If the confirmation of patient data is not activated, the scanner gets ready for scanning.

Confirming patient data

IMPORTANT

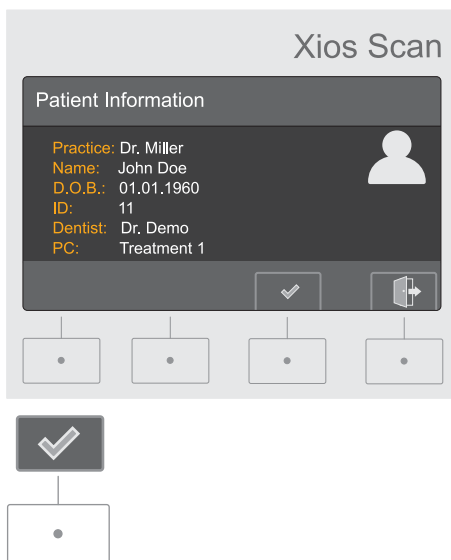
Patient data confirmation can be deactivated.

Confirmation of patient data is activated by default.

This is recommended if several PCs have access to a scanner, for example. This prevents an exposure accidentally being assigned to an incorrect patient.

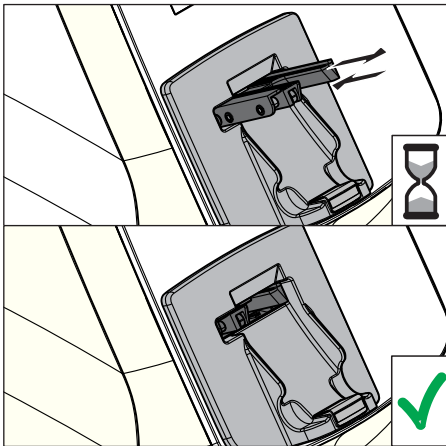
If the confirmation of patient data is deactivated, the scanner gets ready for scanning without prior prompting.

You can activate and deactivate the confirmation of patient data in the configuration dialog. See Settings [→ 71]



- ✓ The "Patient data confirmation" dialog is displayed.
 - ✓ In the SIDEXIS Plugin for Xios Scan, the following message is displayed:
"Please confirm the patient on the scanner"
1. Check that the displayed data matches the patient.
 2. Then press the **Confirm** button on the scanner.
- ✚ The scanner gets ready for scanning.

Scanner getting ready for scanning

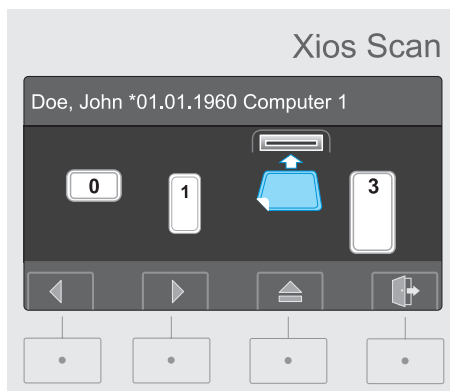


The scanner becomes ready for scanning once this is requested in SIDEXIS and, where appropriate, the patient data has been confirmed.

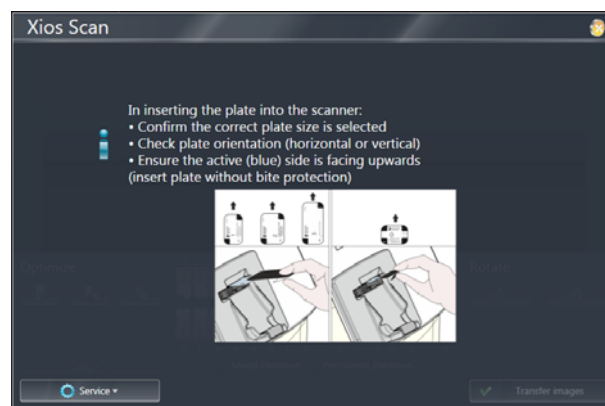
At the same time, the SIDEXIS Plugin for Xios Scan is started.

The slide moves out to the pre-set imaging plate size. Imaging plate size 2 is set as the default (factory settings).

➤ Wait until the slide no longer moves.



- The dialog for choosing the imaging plate size is shown on the display of the scanner.
- In the SIDEXIS Plugin for Xios Scan, a brief instruction for inserting the imaging plates is displayed.

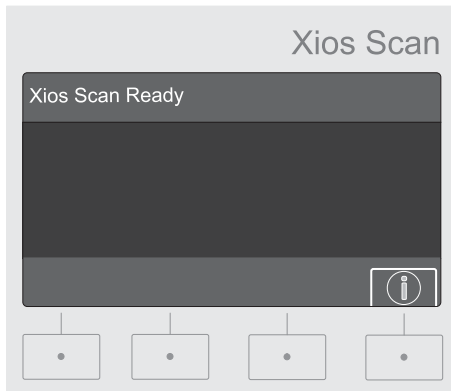


Once this window is displayed, you can start scanning the imaging plates. See Scanning imaging plates [→ 50]

5.9.2 Getting ready for scanning with SIDEXIS XG

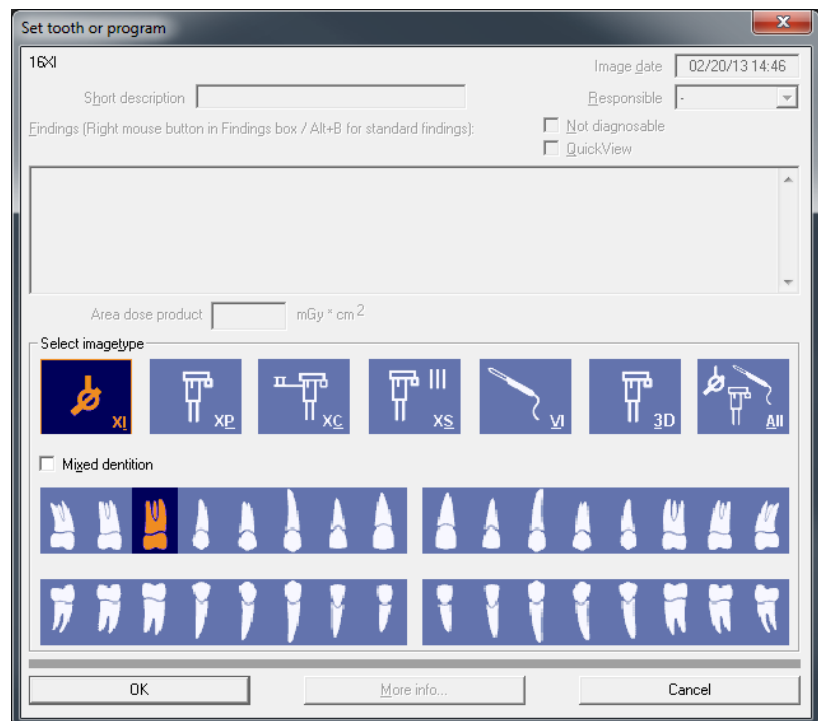
Logging in patients and starting SIDEXIS Plugin for Xios Scan

- ✓ The scanner is switched on.
- ✓ The following message appears on the display: *""Scanner Name" Ready"*



1. Start SIDEXIS XG.
2. Log the patient on for whom the exposure has been created. See the SIDEXIS XG operator's manual.
3. Click the *"Enable exposure readiness for an intraoral X-ray"* button in SIDEXIS XG.
 - ↳ The *"Set tooth or program before exposure"* window opens.
 - ↳ In the *"Set tooth or program before exposure"* window, the image type *"Intraoral X-ray exposure"* is selected.

For further information on SIDEXIS XG, see the SIDEXIS XG operator's manual.



IMPORTANT

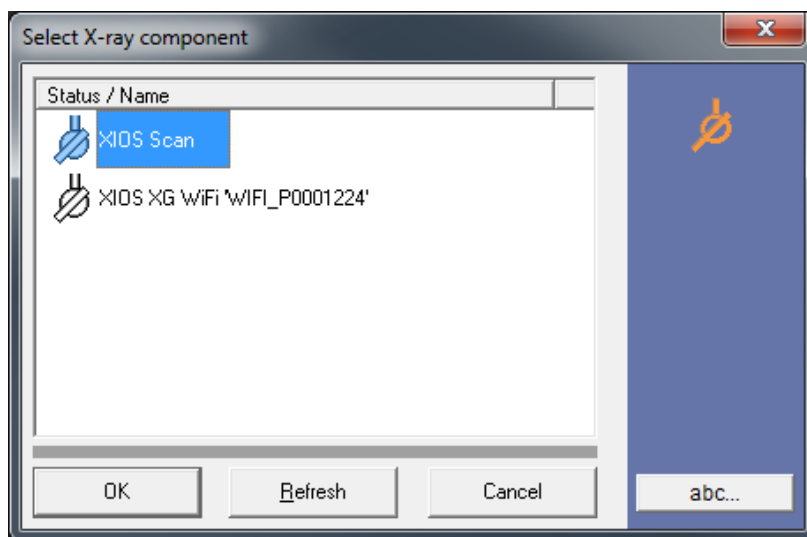
If no patient has been registered yet, the *"Register patient"* window initially appears. In this case, log the patient on for whom the exposure has been created.

4. Click on the tooth you want to examine.
5. To examine a Mixed dentition, place a check mark in the *"Mixed dentition"* check box. Then click on the tooth to be examined in the *"Mixed dentition"* view.

IMPORTANT

For more information on the tooth displays, refer to the SIDEXIS XG operator's manual.

6. Click on the *"OK"* button.
 - ↳ If several X-ray components are connected, the *"Select X-ray component"* window appears.
 - If just one scanner is connected, this window does not open. The connection to the scanner is then soon established.



- ↳ All of the X-ray components connected to the PC are listed in the *"Select X-ray component"* window. The name of the scanner is displayed. If no other name has been provided for the scanner, the name "XIOS Scan" as specified in factory settings appears. Further information on specifying names for the scanner can be found in chapter Configuration of XIOS XG Select.
7. If the scanner does not appear in the *"Select X-ray component"* window, click the *"Refresh"* button. If necessary, check the network connection and click the *"Refresh"* button again.
 8. Select the desired X-ray component. To do so, in the *"Select X-ray component"* window, click on the name of the scanner and confirm with *"OK"*.
 - ↳ The connection to the scanner is established. In the SIDEXIS Plugin for Xios Scan, the following message is displayed: *"Initialising Scanner. Please wait..."*

- ✚ If the "Confirmation of patient data" function is activated, a dialog for confirming patient data is shown on the display of the scanner. The displayed patient data must be checked and confirmed.
- ✚ If the "Confirmation of patient data" function is not activated, the scanner gets ready for scanning.

Confirming patient data

IMPORTANT

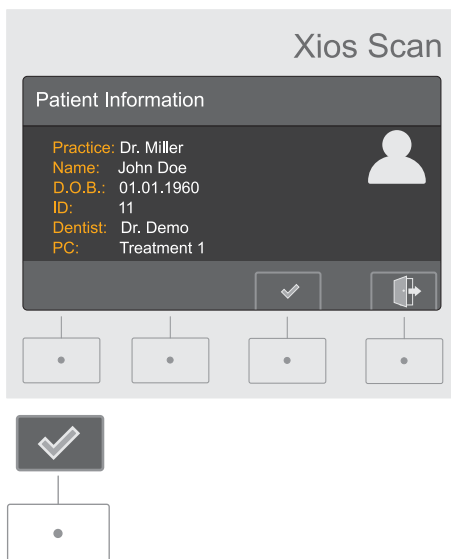
Patient data confirmation can be deactivated.

Confirmation of patient data is activated by default.

This is recommended if several PCs have access to a scanner, for example. This prevents an exposure accidentally being assigned to an incorrect patient.

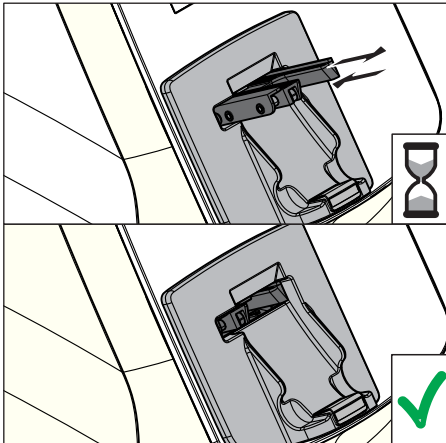
If the confirmation of patient data is deactivated, the scanner gets ready for scanning without prior prompting.

You can activate and deactivate the confirmation of patient data in the configuration dialog. See Settings [→ 71]



- ✓ The "Patient data confirmation" dialog is displayed.
 - ✓ In the SIDEXIS Plugin for Xios Scan, the following message is displayed:
"Please confirm the patient on the scanner"
1. Check that the displayed data matches the patient.
 2. Then press the **Confirm** button on the scanner.
- ✚ The scanner gets ready for scanning.

Scanner getting ready for scanning

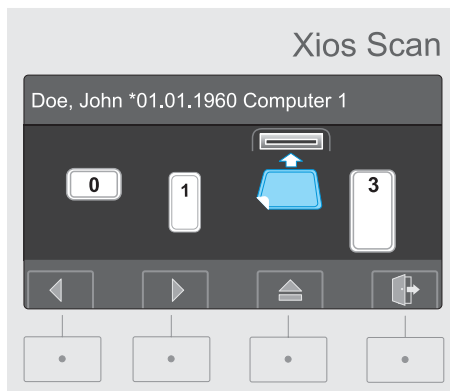


The scanner becomes ready for scanning once this is requested in SIDEXIS and, where appropriate, the patient data has been confirmed.

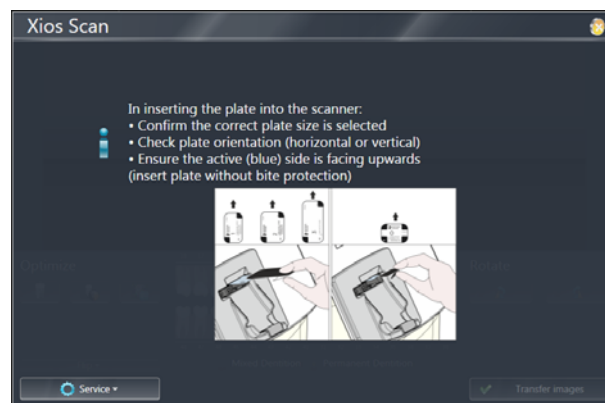
At the same time, the SIDEXIS Plugin for Xios Scan is started.

The slide moves out to the pre-set imaging plate size. Imaging plate size 2 is set as the default (factory settings).

➤ Wait until the slide no longer moves.



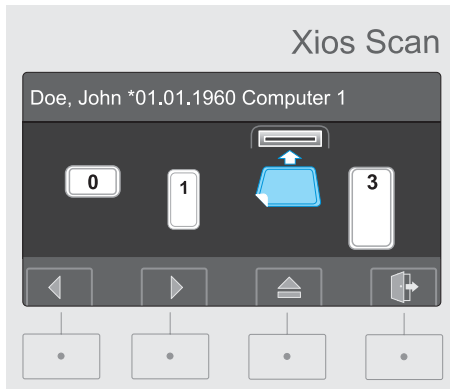
- The dialog for choosing the imaging plate size is shown on the display of the scanner.
- In the SIDEXIS Plugin for Xios Scan, a brief instruction for inserting the imaging plates is displayed.



Once this window is displayed, you can start scanning the imaging plates. See Scanning imaging plates [→ 50]

5.10 Scanning imaging plates

5.10.1 Choosing the size of the imaging plate



The size of the imaging plate to be scanned is chosen via the user interface of the scanner.

The imaging plate sizes 0, 1, 2, and 3 are presented with icons on the display of the scanner.

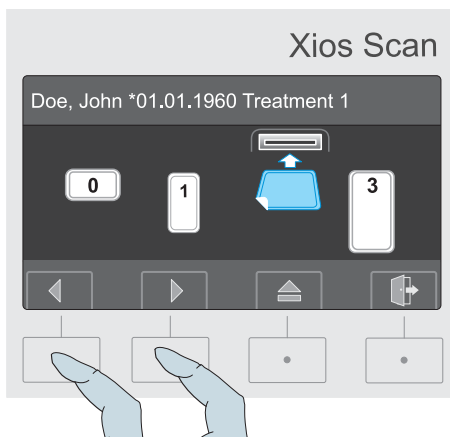
The currently selected imaging plate size is presented in blue without a number. Size 2 is shown in the image.

Size 2 is preselected by default.

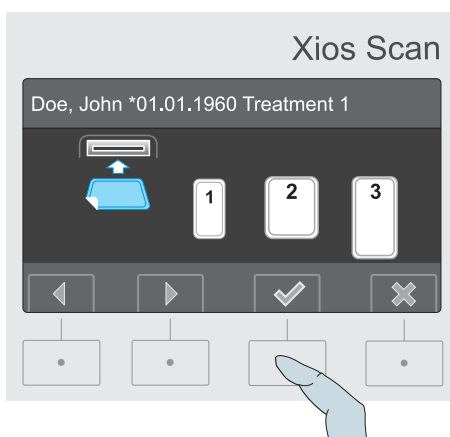
IMPORTANT

Ensure that the imaging plate size that you want to scan is always selected on the scanner.

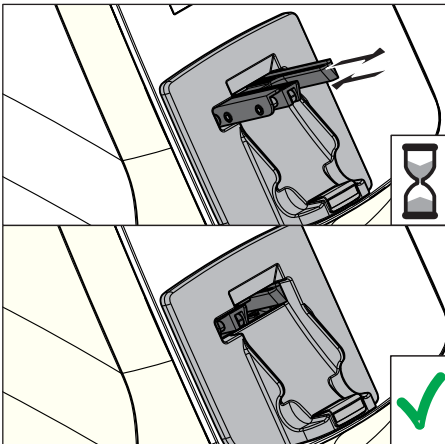
If another imaging plate size is selected, malfunctions may occur.



1. If the imaging plate to be scanned does not have the selected size, choose the size of the imaging plate to be scanned. To do this, press one of the **arrow keys** until the required imaging plate size is presented in blue without a number.



2. Confirm the selection with the button **Confirm**.



- ↩ The slide is adjusted to the selected imaging plate size. In this process, the slide moves.
Once the slide is no longer moving, the imaging plate size has been adjusted.

IMPORTANT

Do not insert any imaging plates while the slide is moving.
Do not touch the slide while it is moving.

5.10.2 Scanning imaging plates

Notes

⚠ CAUTION

Faulty exposures due to soiled imaging plates

Do not touch the active (blue) side of the imaging plate. Hold the imaging plates by the edges.

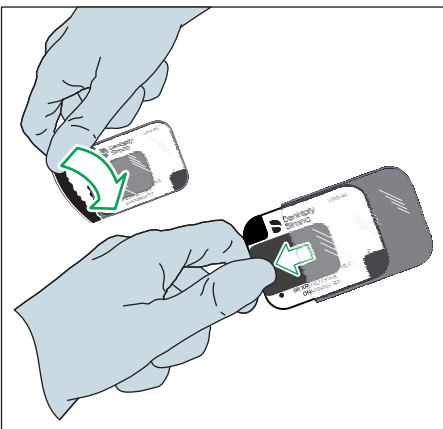
Leave the imaging plate in the bite guard until it is inserted into the scanner.

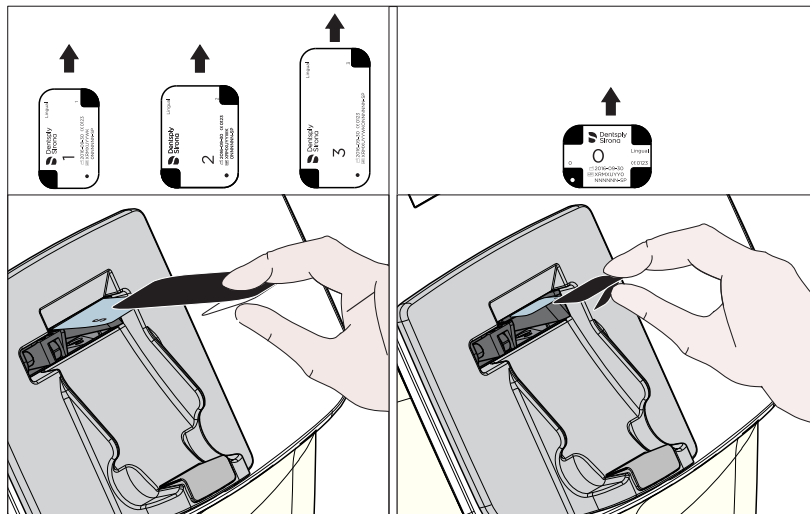
Make sure that the imaging plates are inserted only in a dry and clean condition into the slide. Remove moisture and dirt on the imaging plate with a dry, lint-free cloth.

Scanning the imaging plate

1. Remove the still-sealed imaging plates from the transport and storage box individually.
2. Carefully tear the hygienic protective sleeve at the perforation.
3. Remove the imaging plate with the bite block from the hygienic protective sleeve.

IMPORTANT! The bite guard helps protect the imaging plate from light and damage. Do not remove the imaging plate from the bite guard before it is scanned. Also, do not push the imaging plate out of the bite guard slightly before it is scanned.

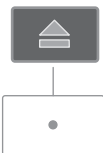




4. Place the imaging plate onto the slide **from above**. Let the imaging plate slide out of the bite guard without touching the surface. When doing so, hold the bite guard firmly at the ends with two fingers (like tweezers). By loosening the bottom strap of the bite guard, the plate slides out of the bite guard into the slide.

IMPORTANT!

- Hold the bite guard with imaging plate directly in front of the slide so that no light reaches the imaging plate.
- Do not insert the bite guard into the scanner. If the bite guard gets into the scanner anyway, do not pull it out forcefully. Wait until the lid in front of the slide is open again.
- Do not direct the imaging plate under the slide.
- The inactive (printed) side of the imaging plate must point downwards. If the inactive (printed) side is pointing upwards, a message is output and the imaging plate is ejected again.
- Ensure the correct alignment of the imaging plates.
- Place the imaging plates of sizes 1, 2, and 3 onto the slide with the narrow side forwards.
- Place size 0 imaging plates onto the slide with the broad side forward.

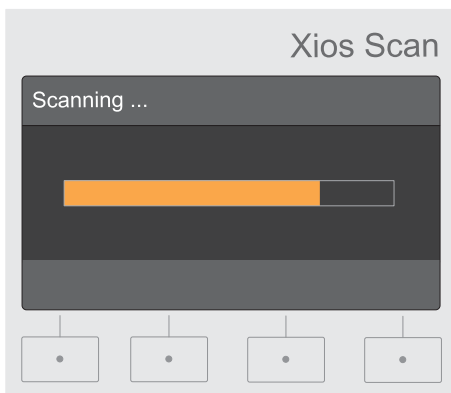


IMPORTANT

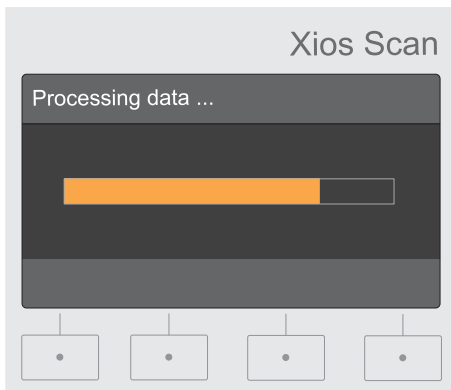
If the correct imaging plate size has not been selected, it may be that the scanning process does not start automatically.

- In such cases, press the **Eject** button on the scanner. The imaging plate is then ejected.
- Immediately protect the ejected imaging plate from ambient light. To do so, place a bite guard over the imaging plate while the slide is moving out. When the slide moves in again, take down the bite guard with imaging plate.
- Select the correct imaging plate size on the scanner.
- Insert the imaging plate into the scanner once again.

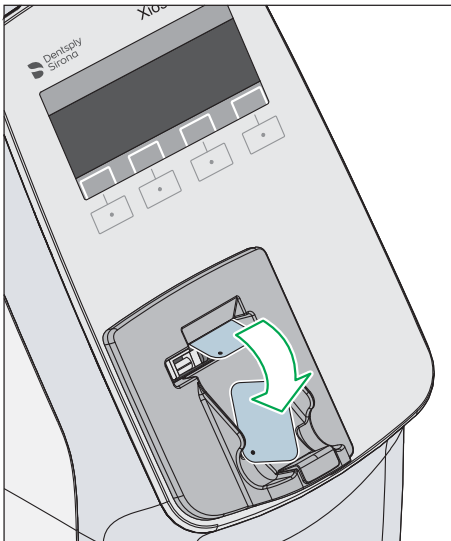
- After inserting the imaging plate, the slide will automatically move in. The compartment closes and the scan process starts.



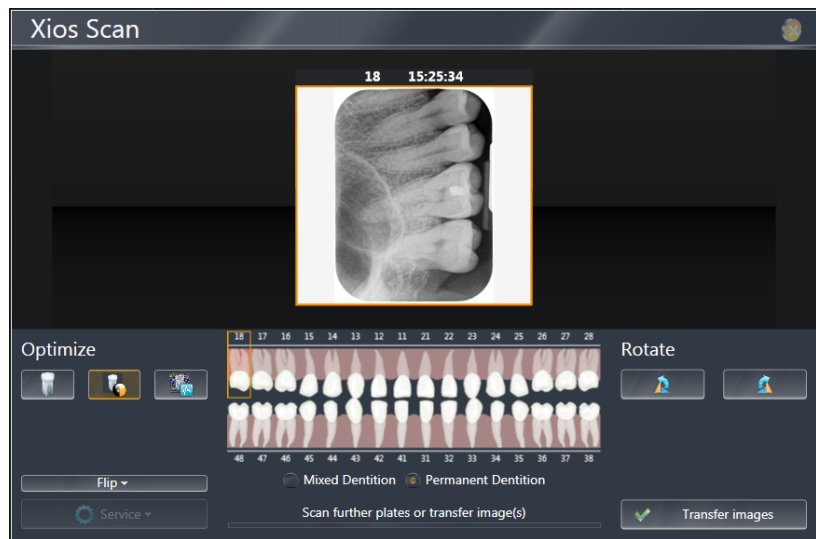
- ↳ During the scanning process, a progress bar is shown on the display of the scanner.
In the SIDEXIS Plugin for Xios Scan, the following message is displayed:
"Please wait. Scan in progress."



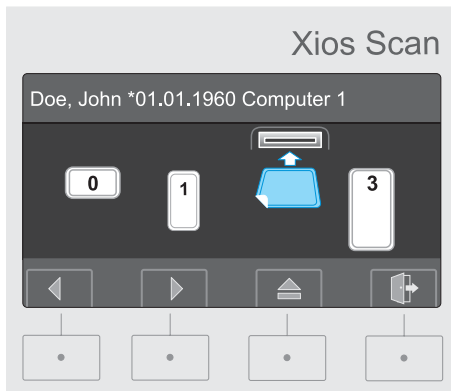
- ↳ The exposure is sent to the SIDEXIS Plugin for Xios Scan. At this point the *"Processing Data ..."* message is shown on the display of the scanner.



- ↳ The exposure is then erased from the imaging plate and the imaging plate is ejected.



- ✎ The exposure is displayed in the SIDEXIS Plugin for Xios Scan.
- ✎ The scanner becomes ready for scanning once more. You can scan additional imaging plates if the dialog for changing the imaging plate size is displayed on the display of the scanner. In the SIDEXIS Plugin for Xios Scan, the following message is then displayed:
"Scan further plates or transfer image(s)"



⚠ CAUTION

In the SIDEXIS Plugin for Xios Scan, an image preview with low resolution is displayed.

- Do not use this image preview for diagnostics purposes.

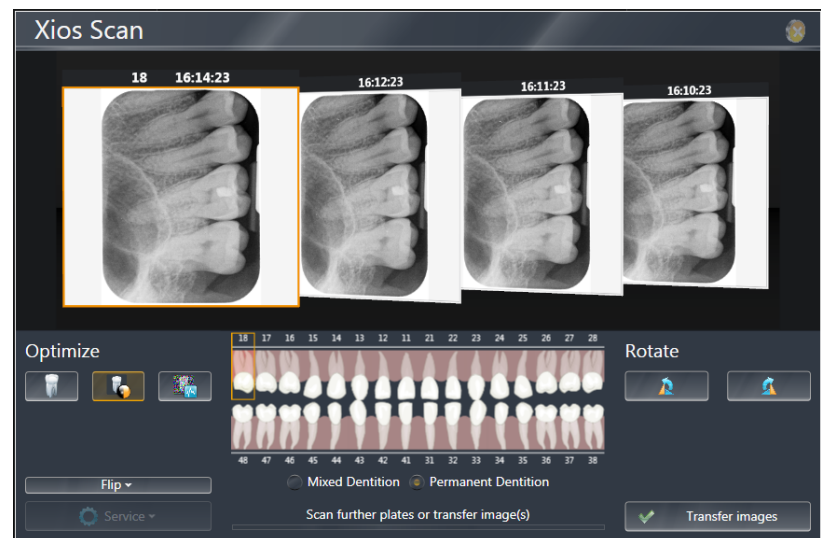
5.10.3 Scanning additional imaging plates

You can scan additional imaging plates if the following message is displayed in the SIDEXIS Plugin for Xios Scan:

"Scan further plates or transfer image(s)"

In the case of an exposure series, you do not have to get ready for scanning repeatedly for every single imaging plate.

1. If necessary, select the correct imaging plate size on the scanner.
2. Insert the next imaging plate into the scanner.
3. Scan all further imaging plates in this way.



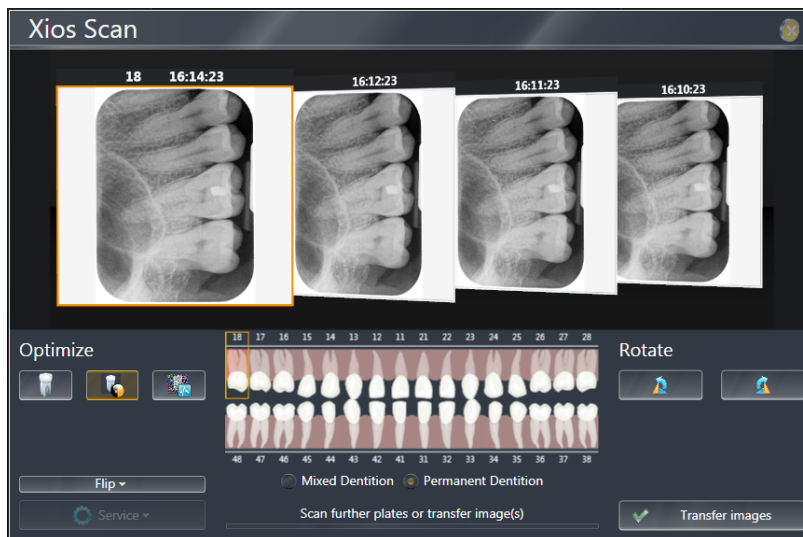
↪ The scanned X-ray exposures are displayed in chronological order in the SIDEXIS Plugin for Xios Scan. The newest X-ray exposure is illustrated on the left. The time of the scan is stated above the X-ray exposure.

Tip: For exposure series, the manufacturer recommends the workflow described here. This way several imaging plates can be scanned one after the other without every single X-ray exposure having to be transferred in SIDEXIS.

In addition, the template function for exposure series is available in SIDEXIS 4. Please note that when using this function every X-ray exposure has to be transferred to SIDEXIS individually.

5.11 Editing images in the SIDEXIS Plugin for XIOS Scan

5.11.1 Selecting images



➤ Click on an image.

✎ The selected image has a yellow border and is displayed in the foreground.

5.11.2 Assigning an image to a tooth region

Using this function you can assign each exposure to the tooth region which is visible in the exposure.

You can select a tooth for each exposure.

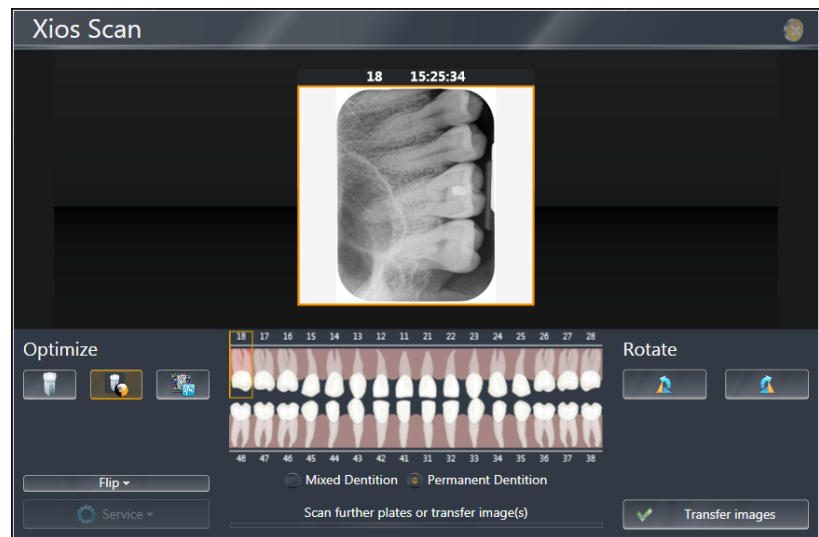
If you have already selected tooth regions for the indication in SIDEXIS, the first tooth clicked on there is transferred to the SIDEXIS Plugin for Xios Scan.

In the case of an exposure series, the first tooth that was selected in the indication in SIDEXIS is automatically transferred for each exposure. The tooth region can be adjusted for each individual exposure through the dental notation in the SIDEXIS Plugin for XIOS Scan.

The assigned tooth region is displayed in the SIDEXIS Plugin for Xios Scan. You can then see which tooth regions have already been scanned.

When the exposures are sent to SIDEXIS, the assignment of the tooth region is sent along with them.

1. Select an exposure.
2. Click on the tooth which is visible in the exposure in the dental notation display. You can toggle between mixed dentition and permanent dentition via the check box under the dental notation.



- ✎ The selected tooth is highlighted in the dental notation view. The number of the tooth is displayed above the exposure.

You can delete the assignment of a tooth region by clicking on the assigned tooth once more.

5.11.3 Image optimization

You can use this function to optimize the exposures through various filters:

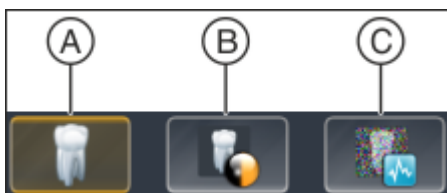
- "Neutral"
- "Sharp"
- "Smooth"

A filter is already selected by default.

The button for the selected filter is highlighted in yellow.

In the dialog Configuration of XIOS XG Select, you can specify which filter is chosen by default. The factory default setting is for the filter "Neutral" to be selected.

Further filters and tools for image editing can be found in SIDEXIS. For more on this, read the corresponding operator's manual.



- To select another filter, click on one of the buttons "Neutral" (A), "Sharp" (B), or "Smooth" (C).

IMPORTANT

In the SIDEXIS plugin for XIOS Scan, you can change filters as often as desired.

The image data is transferred to SIDEXIS with the filter used previously. The filter cannot be reversed in SIDEXIS.

5.11.4 Image mirroring

Explanation

If the inactive (printed) side of the imaging plate has been exposed to light (incorrect operation during exposure or incorrect positioning in the mouth of the patient), the anatomical region is displayed in mirror-inverted form.

Such mirror-inverted X-ray exposures can be corrected with the function "Flip".

You can invert an X-ray image horizontally and vertically.

CAUTION

Incorrect treatment could result from incorrectly inverted exposures

Only use the "Flip" function if an incorrect operation like that described above has occurred and the X-ray exposure is displayed in mirror-inverted fashion.

CAUTION

The "Flip" function is not available in SIDEXIS 4 or SIDEXIS XG.

Once you have transferred an X-ray exposure into SIDEXIS, you can no longer invert it or reverse an inversion.

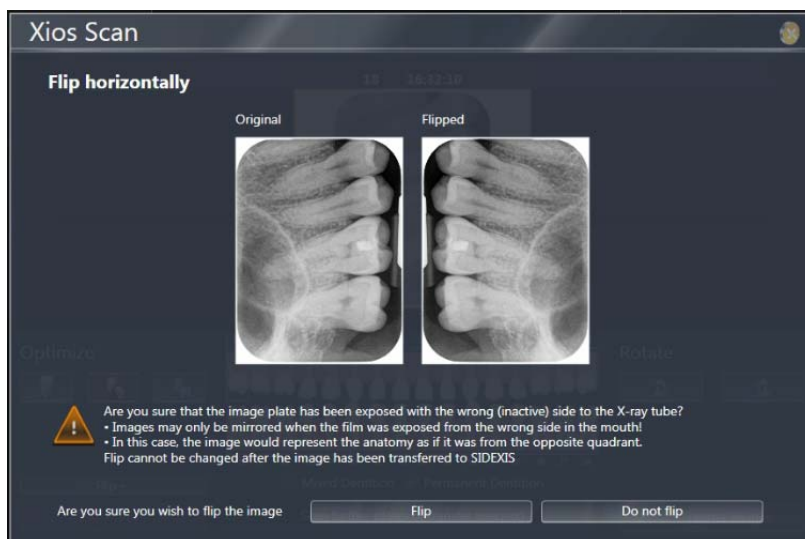
An X-ray exposure cannot be inverted with the "Rotate" function in SIDEXIS, nor can an inversion be reversed.

- Invert mirror-inverted X-ray exposures in the SIDEXIS Plugin for Xios Scan.



Procedure

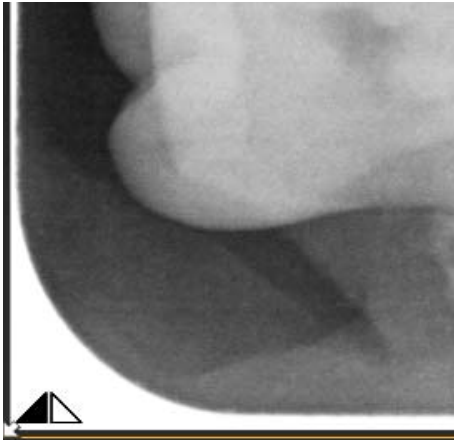
1. Choose an inverted exposure.
2. Click the menu "Flip".
3. Select one of the options "Horizontal" or "Vertical".



- ✎ The original image appears next to the inverted image in the preview.

4. If the inverted image is not correctly aligned, click on *"Do not flip"*. Then use the other inversion option (*"Horizontal"* or *"Vertical"*).
 5. Click on *"Flip"* to invert the image.
- ↳ By clicking on *"Flip"*, the exposure is inverted.
 - ↳ A triangle symbol is displayed in the inverted exposure which corresponds to the icon on the button *"Horizontal"* / *"Vertical"*. This symbol indicates that the exposure has to be inverted horizontally or vertically. The symbol is also displayed in the exposure in SIXELIS.

TIP: To reverse a horizontal inversion, invert the exposure horizontally once more. To reverse a vertical inversion, invert the exposure vertically once more. The exposure will then match the non-inverted original.



5.11.5 Rotating images

Using the *"Rotate"* function, you can rotate the selected exposure 90° clockwise or counterclockwise.

The exposure can thus be aligned correctly. It no longer has to be aligned in SIXELIS.

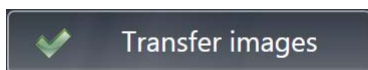
1. Select an exposure to be rotated.
2. Click on one of the buttons *"Rotate"*.

TIP: You can reverse a rotation by rotating the exposure in the opposite direction.



5.12 Completing the scanning process and immediately transferring images to SIDEXIS

In this process, the scanning process is terminated and all X-ray exposures are immediately transferred to SIDEXIS.



- Click on the *"Transfer images"* button.
 - The slides moves in fully and the lid closes.
 - The SIDEXIS plugin for Xios Scan closes.
 - The exposures are sent to SIDEXIS and can be edited with the functions of SIDEXIS.

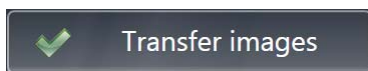
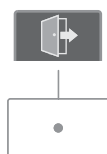


5.13 Completing the scanning process without transferring images to SIDEXIS

In this process, the scanner is logged out of the PC. The X-ray exposures remain in the SIDEXIS Plugin for Xios Scan. They can be edited there and must then be transferred to SIDEXIS.

The scanner is enabled once more. Other PCs can thus access the scanner again.

This function is available, for example, if the scanner is not in the same room as the PC and several PCs have access to one scanner.



1. Press the **Log off scanner** button on the scanner.
 - The slides moves in fully and the lid closes.
 - The scanner can now be used through another PC.
2. You can edit the X-ray exposures in the SIDEXIS Plugin for Xios Scan.
3. Then click on the button *"Transfer images"* to transfer the X-ray images into SIDEXIS.

5.14 Editing images in SIDEXIS

For exposures transferred from XIOS Scan to SIDEXIS, the SIDEXIS image editing functions are available.

For more information on this, see the SIDEXIS 4 or SIDEXIS XG user manual.

5.15 Service menu operation



The *"Service"* menu is opened through the SIDEXIS Plugin for Xios Scan. You have the following options:

- Cleaning the slide [→ 63]
- Erasing imaging plates manually [→ 67]
- Scanner settings [→ 71]

When you start the SIDEXIS Plugin for Xios Scan, the *"Service"* menu is activated if no imaging plate has been scanned. Once the imaging plate has been scanned, the menu is activated and grayed out.

To reactivate the *"Service"* menu, close the SIDEXIS Plugin for Xios Scan and restart it.

6 Cleaning and care by the dental assistants

6.1 Care, cleaning, and disinfecting agents

NOTE

Authorized care, cleaning agents, and disinfectants

Use only care, cleaning and disinfecting agents approved by the manufacturer!

A continuously updated list of approved media can be downloaded from the internet via the online portal for technical documents. You can reach this portal at the address:

www.dentsplysirona.com/manuals

. Click on the menu item *"General documents"* and then open the *"Care, cleaning and disinfection agents"* document

If you do not have internet access, please contact your dental depot to order the list (REF 59 70 905).

6.2 Disinfection and cleaning

NOTE

Damage caused by liquids

Cleaning liquid must not enter the inside of the scanner. Do **not** spray the scanner with disinfectant or cleaning solution.

IMPORTANT

Always comply with the exposure time

Liquids can damage the scanner. Cleaning fluids must be completely evaporated.

6.2.1 Cleaning and disinfecting the scanner

The housing of the scanner can be treated with the cleaning agents and disinfectants recommended by the manufacturer.

1. Remove the collection tray and clean it according to the instructions (see Cleaning the collection tray [→ 63]).
2. Gently wet the surface of the scanner with a damp cloth and rub it with a disinfectant wipe.

6.2.2 Cleaning the collection tray

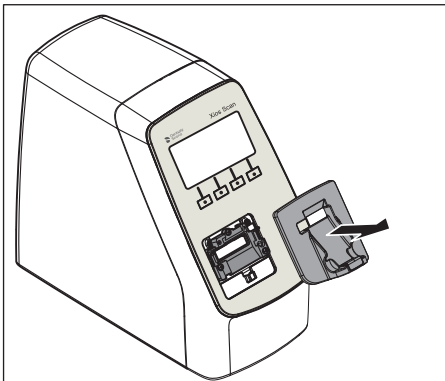
Clean the collection tray every 1-4 weeks as required.

The collection tray and the stopper can be treated with the cleaning solutions and disinfectants recommended by the manufacturer.

IMPORTANT

Always comply with the exposure time

Liquids can damage the scanner. The cleaning fluids must be completely evaporated before the collection tray is once again fitted to the scanner.



1. Pull the collection tray forward and out of the fastening clamp.
2. Clean the collection tray with disinfectant wipe.
3. Leave the collection tray to dry.
4. Fit the collection tray in the holder until it locks into place.

6.2.3 Cleaning the slide

Clean the slide on a regular basis, every 1-4 weeks as required.

IMPORTANT

Always comply with the exposure time

Liquids can damage the scanner. Cleaning fluids must be completely evaporated.

Opening the "Service" menu

The "Service" menu is opened through the SIDEXIS Plugin for Xios Scan.

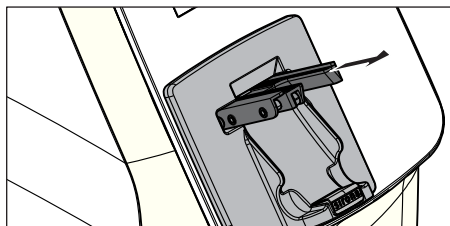
1. Switch on the scanner.
 2. Start SIDEXIS 4 or SIDEXIS XG.
 3. Register a patient. We recommend creating a "service" patient for using the "Service" menu.
 4. Get the scanner ready for scanning.
- ✎ In the SIDEXIS Plugin for Xios Scan, the "Service" menu is displayed.

IMPORTANT

Do not insert any imaging plates into the scanner. This will deactivate the "Service" menu.

Preparation for cleaning the slide

1. In the "Service" menu, select the menu option "Tray cleaning".



- ↪ The slide moves out.
- ↪ In the SİDEXIS Plugin for Xios Scan, brief instructions are displayed.

2. Switch off the scanner when the slide is fully moved out.

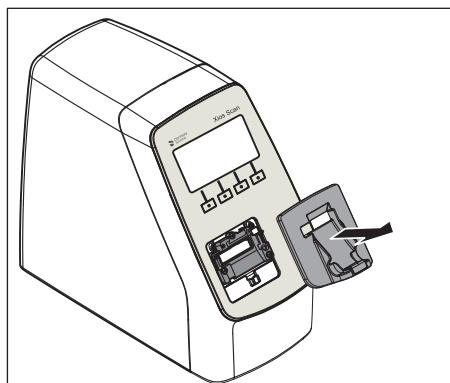
Cleaning the slide

IMPORTANT

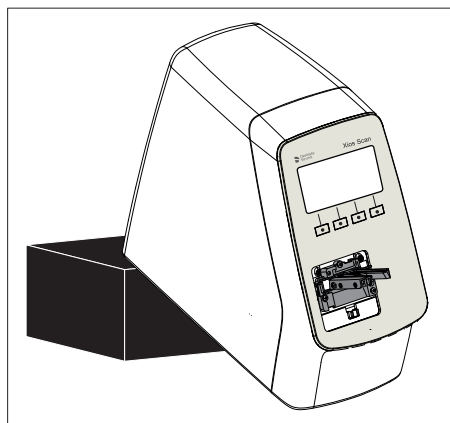
The scanner must be switched off during cleaning.

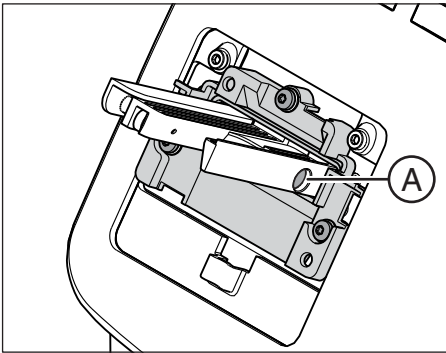
It is prohibited for any imaging plates to be located in the scanner slide during cleaning.

1. Pull off the collection tray.

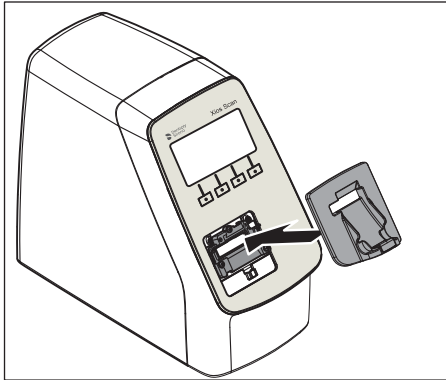


2. Lift the back side of the scanner using a suitable support until the slide is roughly level. This prevents liquid from entering into the inside of the scanner.
3. Clean the slide by wiping it. Use isopropanol for this.
4. Allow the slide to dry.





5. If the tray (A) has been shifted during cleaning, push it back into the slide again.
6. Switch on the scanner.
↪ The slide moves in.



7. Put the collection tray back on.
↪ The scanner is again ready for use.

6.2.4 Cleaning the power supply unit

Use a dry, soft cloth to remove dust from the power supply unit. More stubborn spots can be removed with a damp cloth.

You can wipe the power supply unit to disinfectant it using all products that are normally used for electromedical devices.

CAUTION

Spray disinfection may allow liquids to penetrate into the power supply unit!

The power supply unit can only be **disinfected using a wipe**. Never use a spray disinfectant on the power supply unit.

Observe the instructions provided by the manufacturers of these disinfectants.

6.2.5 Cleaning and disinfecting the hygiene protection covers

Rub the hygienic protective sleeves with an ethanol-based disinfectant wipe before and after placement in the patient's mouth.

IMPORTANT

The exposure time must be adhered to. The liquids must have dried up completely.

6.2.6 Cleaning and disinfecting the transport and storage box

Shell and cover of the transport and storage box

The shell and cover of the transport and storage box can be treated with the cleaning solutions and disinfectants recommended by the manufacturer.

Transport and storage box mat

⚠ CAUTION

Risk of contamination!

The transport and storage box mat will come into contact with packaged imaging plates, which are wetted with bodily fluids.

- Clean and disinfect the transport and storage box mat on a regular basis.

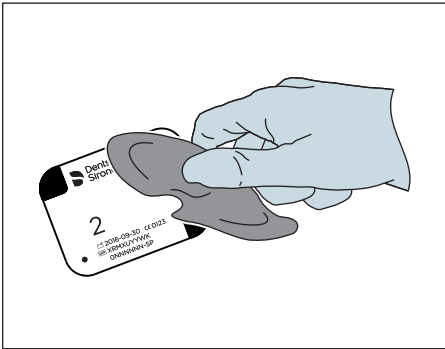


Machine-based treatment may take place with dental-thermo disinfectants or automatic cleaning and disinfection systems. The cleaning program must ensure a temperature of 93°C / 200°F over a period of 75 minutes.

Fold out the mat during the cleaning as shown in the diagram.



6.2.7 Cleaning imaging plates



Remove dirt, dust and particles from both sides of the imaging plate using a soft, lint-free cloth.

To remove persistent dirt, moisten the cloth with an ethanol-based cleaning solution and wipe the imaging plate.

Make sure that the the imaging plate has completely dried before using it again.

IMPORTANT

To this end, please refer to the operating manual for the imaging plate (REF 64 79 583).

6.3 Erasing imaging plates manually

Imaging plates may be pre-exposed to ambient light or natural radiation. Therefore, erase the imaging plates prior to first use and after storage times of over one week.

When manually erasing imaging plates, a scanning operation is first started. Afterwards, the imaging plate is completely erased.

Opening the "Service" menu

The "Service" menu is opened through the SIDEXIS Plugin for Xios Scan.

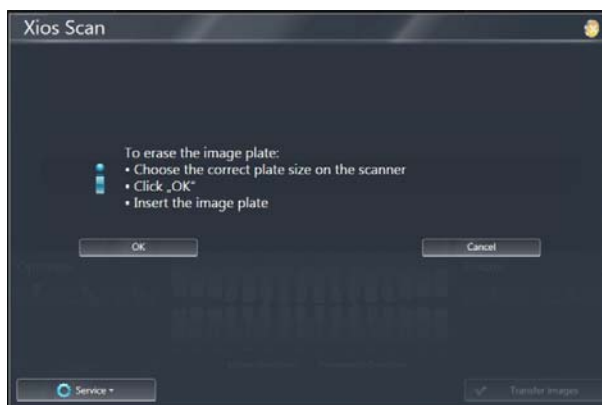
1. Switch on the scanner.
 2. Start SIDEXIS 4 or SIDEXIS XG.
 3. Register a patient. We recommend creating a "service" patient for using the "Service" menu.
 4. Get the scanner ready for scanning.
- ↳ In the SIDEXIS Plugin for Xios Scan, the "Service" menu is displayed.

IMPORTANT

Do not insert any imaging plates into the scanner. This will deactivate the "Service" menu.

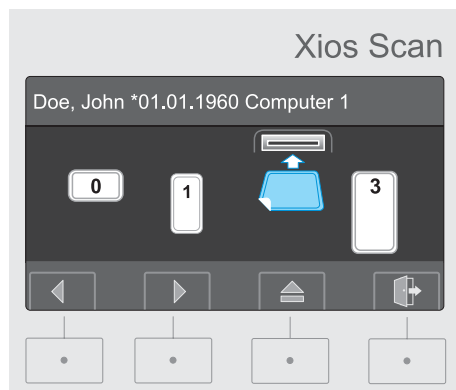
Erasing imaging plates

1. In the "Service" menu, select the menu option "Erase plate".



↳ The message shown above appears in the SIDEXIS plugin for Xios Scan.

2. If the imaging plate is not of the size chosen, select the size of the imaging plate on the scanner.

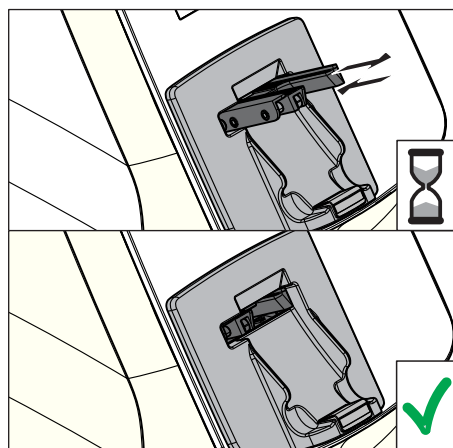


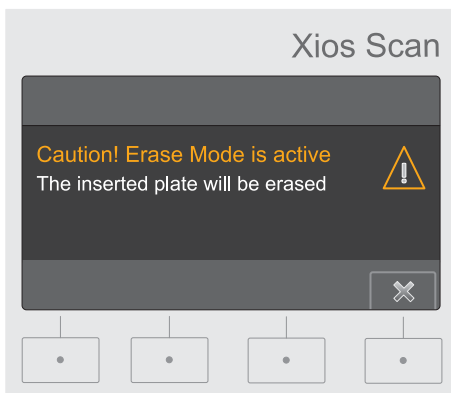
3. Confirm the selection by pressing the button **Confirm**.

↳ The slide will move to the selected imaging plate size. Wait until the slide no longer moves.

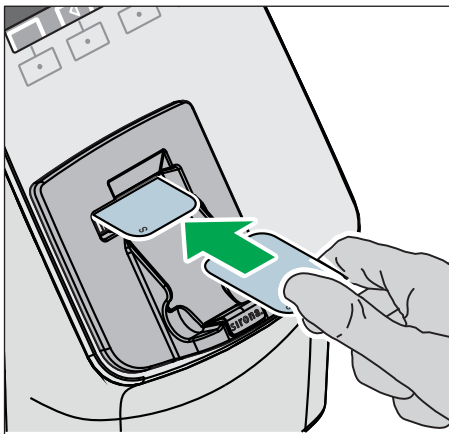
4. Then click on "OK" in the SIDEXIS Plugin for Xios Scan.

↳ In the SIDEXIS Plugin for Xios Scan, the following message is displayed:
"The inserted plate will be erased."

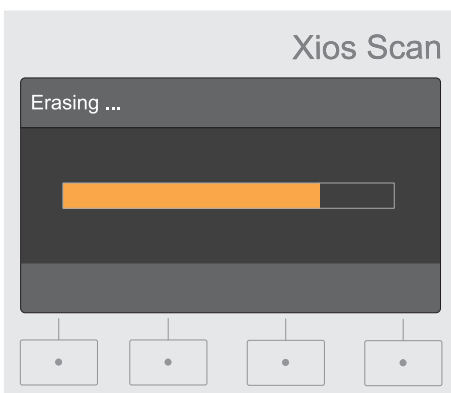




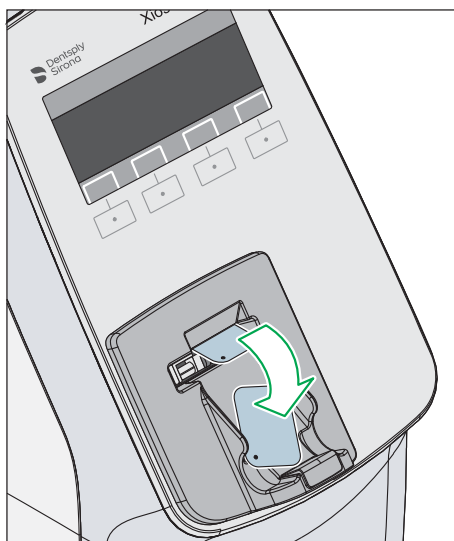
↪ The following message is shown on the display of the scanner:
"Caution! Erase Mode is active. The inserted plate will be erased"



5. Place the imaging plate to be erased onto the slide from above. Make sure that the slide does not move while you are putting on the imaging plate.



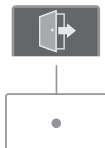
↪ The imaging plate is erased. During the erasing process, the message *"Erasing ..."* is displayed on the scanner.



➤ After the erasing process, the imaging plate is ejected.



6. To erase additional imaging plates, open the menu item *"Erase plate"* once more from the *"Service"* menu, and proceed as described above.



7. When you have deleted all the imaging plates, press the **Log off scanner** button on the scanner.



8. Close the SIDEXIS Plugin for Xios Scan via the **Close** button.

7 Settings

7.1 Scanner settings

In the settings dialog, the following device settings are possible:

- Time to standby
- Display brightness
- Keystroke

7.1.1 Opening the settings dialog

Opening the "Service" menu

The "Service" menu is opened through the SİDEXIS Plugin for Xios Scan.

1. Switch on the scanner.
2. Start SİDEXIS 4 or SİDEXIS XG.
3. Register a patient. We recommend creating a "service" patient for using the "Service" menu.
4. Get the scanner ready for scanning.

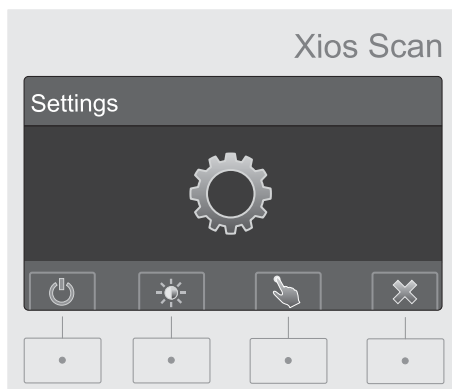
↳ In the SİDEXIS Plugin for Xios Scan, the "Service" menu is displayed.

IMPORTANT

Do not insert any imaging plates into the scanner. This will deactivate the "Service" menu.

Opening the settings dialog

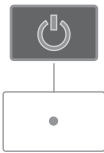
➤ In the service menu, select the service item "Device Settings".



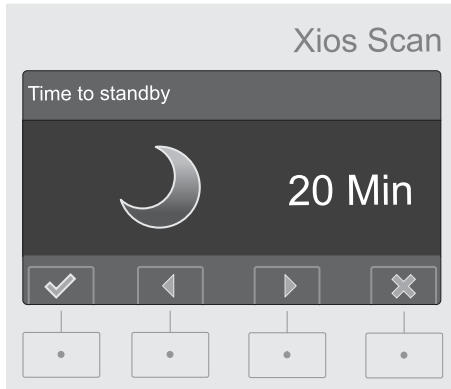
↳ The settings dialog is displayed on the display of the scanner. The settings are configured directly on the scanner.

7.1.2 Setting the time to standby / standby deactivation

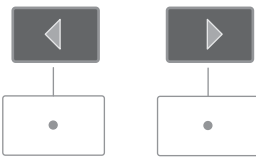
1. Press the *"Standby time"* key.



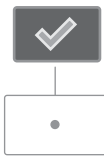
→ The dialog window *"Standby time"* is displayed.



2. Press the **arrow keys** to change the time after which the scanner switches to standby mode after a period of inactivity.
To deactivate standby mode, press the **left arrow key** until the message *"Disabled"* is shown on the display.



3. Confirm the settings by pressing the **Confirm** button.

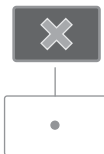


4. Complete the process by pressing the **Close** button.

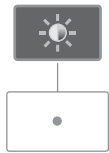
→ You can now adjust further settings.

➤ To leave the settings dialog, press the **Close** button once more.

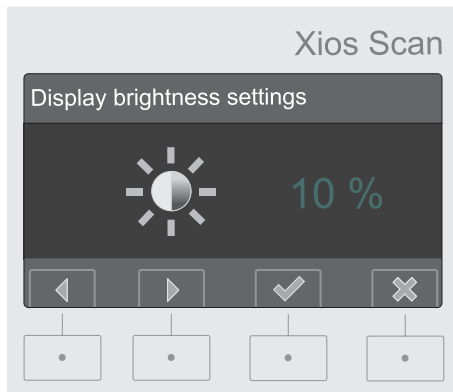
→ The scanner becomes ready for scanning once more.



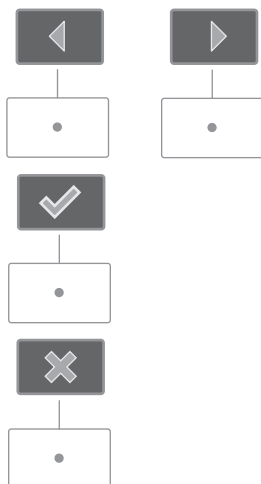
7.1.3 Changing display brightness



1. Press the *"Display brightness setting"* key.



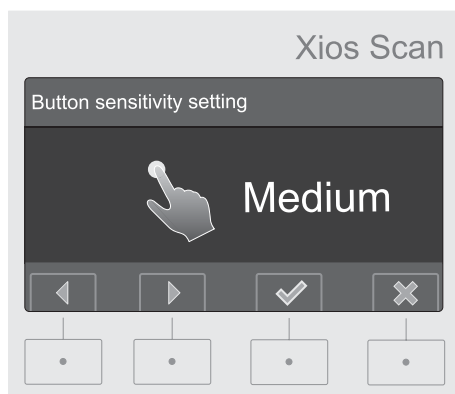
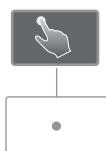
↪ The dialog window *"Display brightness setting"* is displayed.



2. Press the **arrow keys** to change the brightness.
3. Confirm the settings by pressing the **Confirm** button.
4. Complete the process by pressing the **Close** button.
 - ↪ You can now adjust further settings.
 - To leave the settings dialog, press the **Close** button once more.
 - ↪ The scanner is once again ready for exposures.

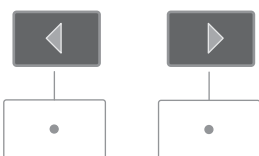
7.1.4 Modifying button pressure sensitivity

1. Press the *"Button sensitivity setting"* key.



➤ The dialog window *"Button sensitivity setting"* is displayed.

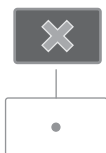
2. Use the **arrow keys** to select the pressure sensitivity of the buttons.
"Maximal" means: Buttons are actuated with little pressure.
"Medium" means: Higher pressure required to actuate the buttons.



3. Confirm the settings by pressing the **Confirm** button.



4. Complete the process by pressing the **Close** button.



➤ You can now adjust further settings.

➤ To leave the settings dialog, press the **Close** button once more.

➤ The scanner becomes ready for scanning once more.

7.2 Plugin configuration

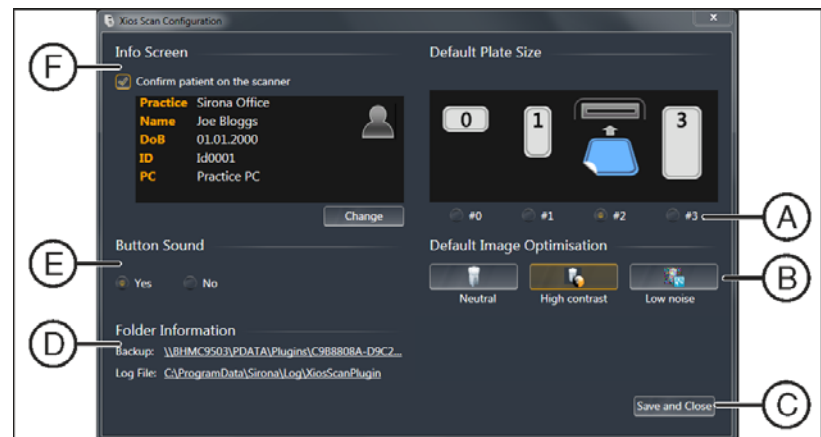
7.2.1 Opening the configuration dialog

1. Start "SIDEXIS Manager".
2. Click on "XIOS Scan Configuration".

7.2.2 Overview of the configuration dialog

You can configure the following settings in the configuration dialog:

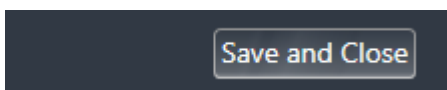
- Activate/deactivate the patient data prompt
- Preselect patient data which is shown in the display
- Preselect the standard imaging plate
- Activate/deactivate the key tone
- Preselect the standard image filter
- Open the folder for exposures and the log directory



A	Preselect standard imaging plate size	B	Selecting standard image filter
C	"Save and Close" button	D	Open directory for exposures and log directory
E	Activate/deactivate the key tone	F	Activate/deactivate confirmation of patient information

7.2.3 Save/discard changes

Save/discard



- To save changes to the configuration, click on "Save and Close".
- To discard changes to the configuration, close the configuration dialog via the **Close** button.

7.2.4 Activating and deactivating patient data confirmation

Information

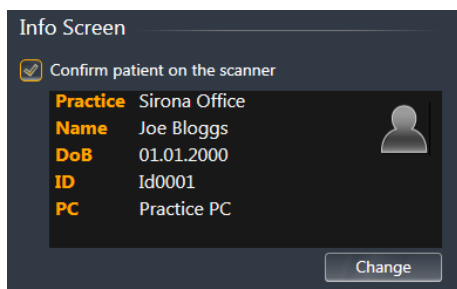
If the confirmation of the patient data is activated, patient data is shown on the display of the scanner prior to scanning the imaging plates. This data must be confirmed before an imaging plate can be scanned.

We recommend confirming patient information if several PCs have access to one scanner. This prevents exposures being assigned to the wrong patients.

You can specify what patient information is shown on the display of the scanner during confirmation.

Activate/deactivate confirmation of patient information

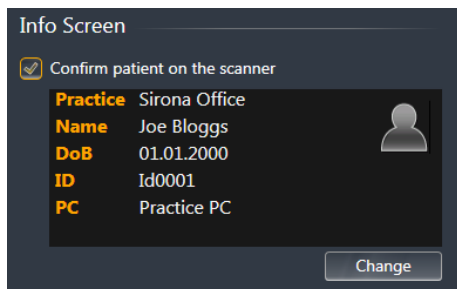
1. Open the configuration dialog.
2. You can activate and deactivate patient data confirmation using the check box next to *"Info Screen"*.



Specifying displayed patient data

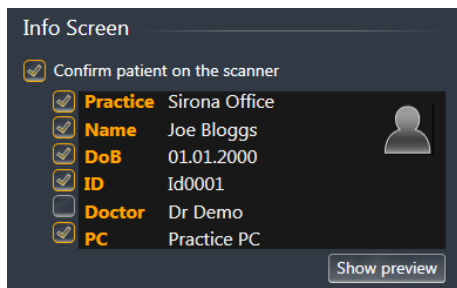
- ✓ There is a tick in the *"Confirm patient on the scanner"* check box.

1. Click on the *"Change"* button.



2. Tick the patient data that you want displayed during confirmation.
3. Click on the *"Show preview"* button.

- ✎ Confirmation of patient data is activated. Once you have got ready to scan, the information selected is shown on the scanner display and must be confirmed.



7.2.5 Specifying a standard imaging plate size

Information

Here you can define which imaging plate size is automatically chosen on the scanner.

Imaging plate size 2 is pre-set as the default (factory settings).

Specifying a standard imaging plate size

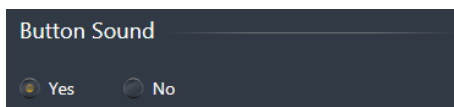
1. Open the configuration dialog.
 2. Specify the standard imaging plate size via the radio buttons #0, #1, #2, or #3 under *"Default Plate Size"*.
- ↳ The selected imaging plate size is displayed in blue.



7.2.6 Switching the key tone on the scanner on and off

Switching the key tone on and off

1. Open the configuration dialog.
2. You can switch the key tone on and off via the radio buttons *"Yes"* and *"No"* under *"Button Sound"*.



7.2.7 Specifying a standard filter for exposures

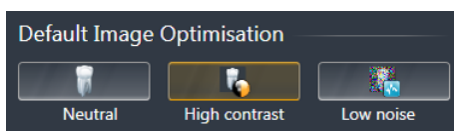
Information

Here you can choose one of three image filters with which the scanned image is displayed by default.

You can change the image filters for each exposure.

Specifying a standard filter

1. Open the configuration dialog.
 2. Under *"Default Image Optimisation"*, click on one of the buttons *"Neutral"*, *"High contrast"*, or *"Low noise"*.
- ↳ If an imaging plate is scanned, the image is displayed with the image filter specified here by default.



7.2.8 Opening the directory for raw image data and the log directory

Information

Here you can open and inspect the directory with the raw image data of the exposures and the log directory.

Opening directories

1. Open the configuration dialog.
2. Under "*Folder Information*", click on one of the paths to open the relevant directory.

Folder Information

Backup: [\\BHMC9503\PDATA\Plugins\C9B8808A-D9C2...](#)

Log File: [C:\ProgramData\Sirona\Log\XiosScanPlugin](#)

8 Maintenance

8.1 General

8.1.1 Scanner Maintenance

Cleaning

The unit should be cleaned regularly by the user.

Scanner Maintenance Costs

The scanner is completely maintenance-free.

Service Calls

Service calls are only made upon demand in an emergency.

8.2 Constancy test

Checking image quality

Constancy test for Germany, Austria, and Switzerland

Device:

Please observe the regular checks of the image quality of your X-ray unit (e.g. the X-ray Ordinance) required by law in your territory. The manufacturer provides you with the SIDEXIS software for the simple conducting of this constancy test and for its documentation. The required test specimen and the description of the constancy test come with the unit.

Diagnostic monitor:

In Germany a regular constancy test of the results monitor is required by the X-ray Ordinance in accordance with DIN 6868-157. The manufacturer provides the software SIMOCON for the simple conducting of this statutory requirement. You can find this software and the operating instructions that belong to it on your SIDEXIS CD under the section "Tools".

8.3 Regular inspections by the system owner or other authorized persons

General inspection

Inspections must be performed at regular intervals to protect the health and safety of patients, users, and other persons.

- The system owner must make sure that no changes are made to the second protective ground wire connection where available.
- The system owner must also make sure that all components are in undamaged condition.

NOTE

All parts of the device are maintenance-free. In case of malfunctioning, please always contact your specialized dealer.

Checking image quality

The image quality should be assessed by the system owner at regular intervals, at least once a year.

If imaging plates and scanners are used, an increasing number of image post-processing operations performed with the brightness or contrast control in the image processing software (e.g. SIDEXIS) is employed as an assessment criterion.

If these assessment criteria are regarded as given irrespective of the patient's anatomy and/or possible sources of error such as patient positioning, a service engineer should be called in immediately to rectify any possible system faults.

Observe any possible additional country-specific requirements.

Labeling

Conduct a visual inspection of whether all labels on the rear of the scanner are undamaged and legible.

9 Troubleshooting and repair

9.1 Rescuing X-ray exposures

9.1.1 Explanation

General

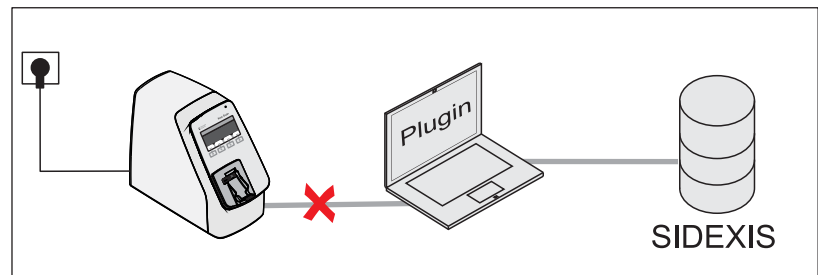
In the event of a "rescue", the X-ray exposures read by the scanner are not transferred to the database.

There are three different types of rescue case and procedure:

- Rescue due to network fault [→ 81]
- Rescue for image transfer to SIDEXIS [→ 86]
- Rescue without assigning patient data [→ 87]

9.1.2 Rescue due to network fault

Explanation

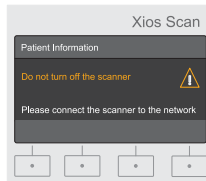


If the network connection is interrupted during the scanning process, the image is not sent to the SIDEXIS Plugin for Xios Scan from the scanner. A rescue operation is triggered.

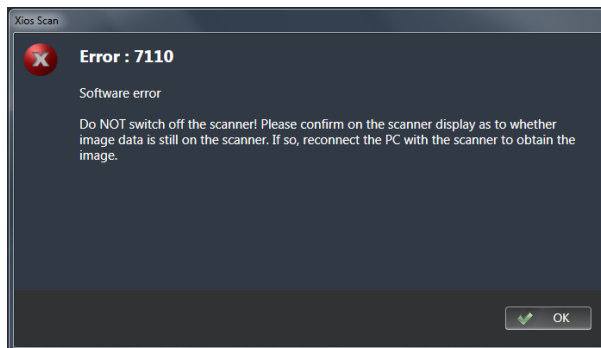
The image is not lost during this process. It is saved in the internal memory of the scanner. Fetch the image using the rescue function described here.

Rescuing images

If a this rescue operation occurs, the following message is displayed in the SIDEXIS Plugin for Xios Scan and on the display of the scanner:



Notification on the scanner display



Message in the SIDEXIS Plugin for Xios Scan

CAUTION

Loss of the X-ray exposure

Do not switch off the scanner during this rescue state.

Otherwise, the image will be deleted from the scanner's cache memory.

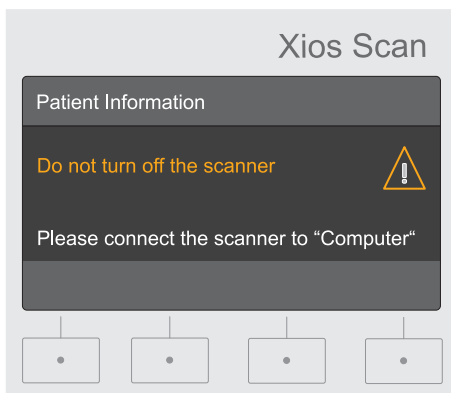
1. Click on "OK" in the window that appears.
2. Resolve the network fault and re-establish the network connection.

IMPORTANT

Eliminating network faults

Determine and eliminate the cause of the network fault.

- First check that the LAN cable is correctly connected and free from damage.
- If required, notify a member of the IT team.

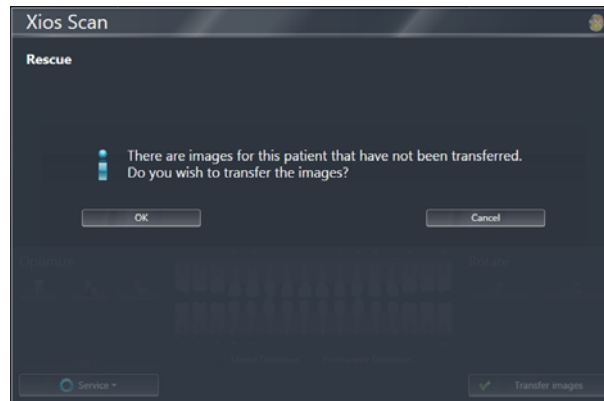


Rescue message after the network connection has been re-established

↳ If the network connection has been re-established, the scanner display changes. The name of the PC is displayed.

3. For SIDEXIS 4: Click on the "Next" button.
For SIDEXIS XG: Get ready for scanning again.

↳ The scanner is initialized once more.



↳ After initialization, the notification shown above appears.

4. Click on "OK".

↳ The image to be rescued is transferred to the SIDEXIS Plugin for Xios Scan.

↳ You can now edit the image and send it to SIDEXIS.

IMPORTANT

Backing up an exposure onto another computer if the first computer crashes

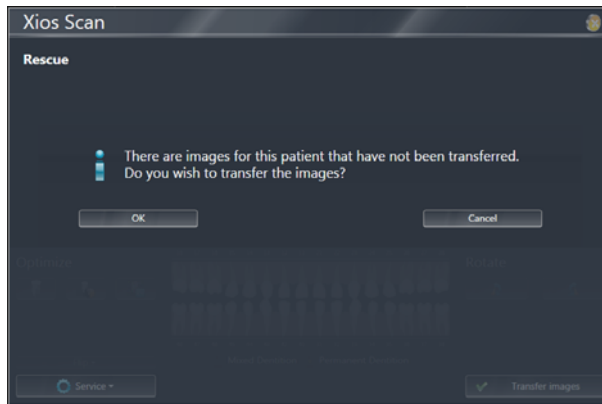
The connection between the scanner and the connected computer will remain intact for 15 minutes after the rescue. After this, it will be cut.

Only after this can the scanner be addressed by another computer (e.g. in the case of a failure of the computer in use).

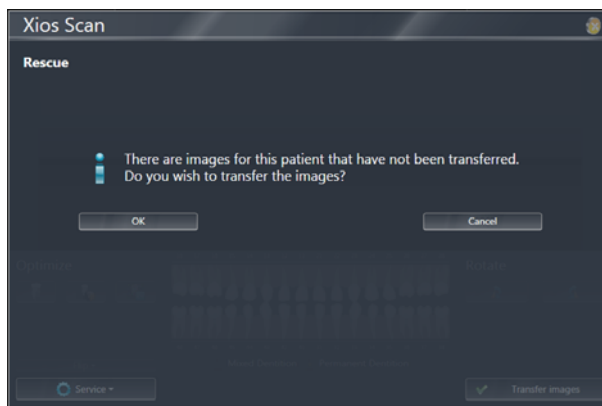
Special case: Prior to a rescue operation occurring, imaging plates have been scanned but not yet transferred to SIDEXIS.

Once the network connection has been re-established, and you are ready to scan again, the *"Rescue"* window also appears.

Proceed as described here:



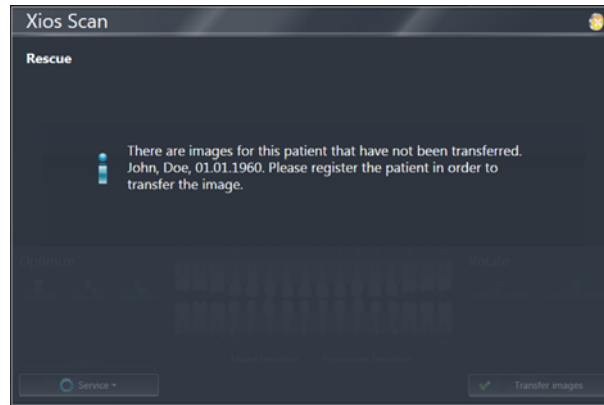
1. Click on *"OK"*.
 - ↳ In the SIDEXIS Plugin for Xios Scan, the previously scanned images are displayed.
2. Transfer these images to SIDEXIS.
3. Get ready to scan once again.



- ↳ The *"Rescue"* window reappears.
4. Click on *"OK"*.
 - ↳ The image to be rescued is transferred to the SIDEXIS Plugin for Xios Scan.
 - ↳ You can now edit the image and transfer it to SIDEXIS.

Special case: After the network fault, another patient was logged on accidentally.

When establishing exposure readiness, the following window is displayed:

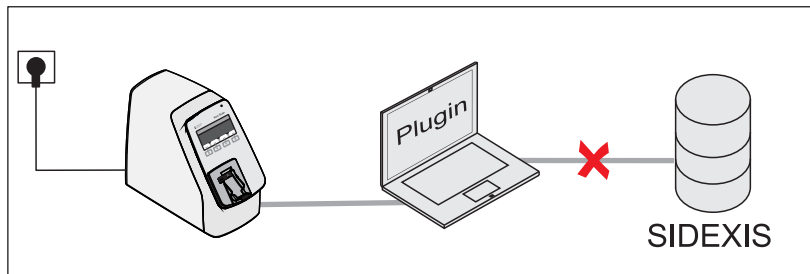


1. Note down the name of the patient shown in the window.
2. Close the window with the "Close" button.
3. Log in the patient stated in the window.
4. Get ready for scanning and continue as described under "Rescuing images".



9.1.3 Rescue for image transfer to SIDEXIS

Explanation

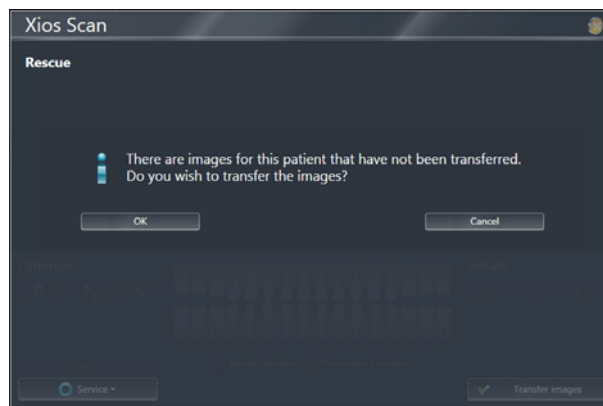


In the event of an unforeseeable fault to the PC, errors may occur when transferring images to SIDEXIS.

In such cases, a rescue operation is triggered. The images are not lost and are stored in the cache memory. Back up the images as described here.

Rescuing images

1. If SIDEXIS no longer responds, close the software via the task Manager and restart.
2. Log the patient who is the subject of the exposure into SIDEXIS.
3. Get the scanner ready for scanning.



➞ After initialization, the window shown above "Rescue" is displayed.

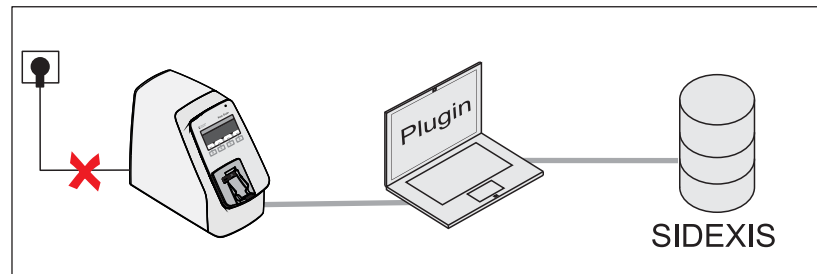
4. Click on "OK".

➞ The images are displayed in SIDEXIS Plugin for Xios Scan.

➞ You can now edit the images and send them to SIDEXIS.

9.1.4 Rescue without assigning patient data

Explanation

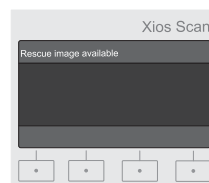


This type of rescue occurs if there is an imaging plate in a scanner which has been switched off and the scanner is then switched on. This may occur if there was a power cut just before the scanning operation, for example.

Once current is available once more, or the scanner is switched back on, the imaging plate is scanned. However, the scanned image is not assigned to a patient.

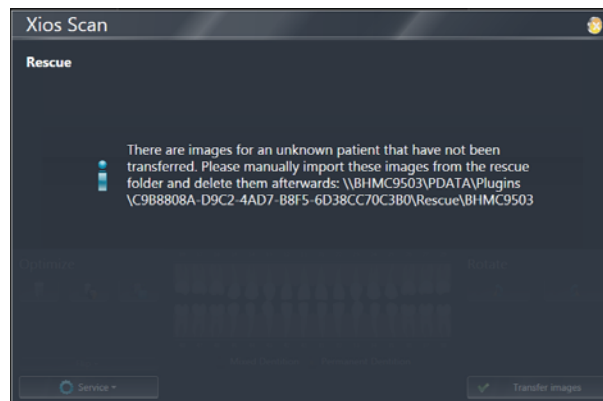
The image must then be imported manually via the SIDEXIS import function.

Rescuing images



Once the scanner is switched on, the inserted imaging plate is scanned. The notification shown above is shown on the display.

1. Log the patient into SIDEXIS who is the subject of the image on the imaging plate in the scanner.
2. Get the scanner ready for scanning.



3. Wait until the "Rescue" window pictured above is displayed.
4. In Windows Explorer, open the file path present in the "Rescue" window.

5. Close the *"Rescue"* window.
6. Import the image without the name "**_Raw**" in the file name via the SIDEXIS import function.
For more on this, please refer to the SIDEXIS 4 / SIDEXIS XG user manuals.
7. Delete all images from the rescue folder.

9.2 Faulty radiographs

Error	Cause of error	Troubleshooting
Structures cannot be identified or can hardly be identified, X-ray image very noisy	X-ray dose is too low	Check X-ray parameters
	Exposed imaging plate was exposed to ambient light	Read the imaging plate within 30 minutes of the exposure where possible
	No image data on the imaging plate, imaging plate not exposed	Expose the imaging plate
	Defective scanner	Inform the technician
	X-ray device is faulty	Inform the technician
X-ray image too dark or too bright	Incorrect brightness/contrast settings in the software	Adjust the brightness of the radiograph in the software
	Possible technical defect with the X-ray device, the imaging plate or the scanner	Inform the technician if there is an impermissible deviation. For clarification: In Germany, Austria, and Switzerland: Perform consistency check in accordance with RöV (the German X-ray Ordinance). Outside Germany, Austria, and Switzerland: Perform consistency check in accordance with quality inspection.
Radiograph is a mirror image	Imaging plate exposed from the wrong side	The "Mirror" function is used to correct previously scanned exposures. See the SINDEXIS Plugin for Xios Scan user manual Note: For X-rays, remember that the active side points toward the X-ray tube. Insert the imaging plate into the bite guard and hygienic protective sleeves correctly. See Preparing the imaging plate for an exposure [→ 36]
Ghosting or multiple exposures on the radiograph	Imaging plate exposed twice	Expose imaging plate only once
	Insufficient erasure	Defective erasing unit Inform a service technician

Error	Cause of error	Troubleshooting
Artifacts, shadows, or stripes on the X-ray image	Imaging plate exposed to light before it is read	Do not handle imaging plate without hygiene protection cover
		Keep imaging plate in hygiene protection cover
		Quickly place the imaging plate on the scanner slide
		Darken the room
		Place the scanner such that no direct light falls on the input unit.
Radiograph shows stripes	Imaging plate pre-exposed, e.g. by natural radiation or scattered X-ray radiation	When the imaging plate was stored for more than a week, erase it again before use.
	Imaging plate soiled	Clean imaging plate (see Cleaning imaging plates [→ 67])
	Imaging plate scratched or damaged	Replace the imaging plate
	Imaging plate pre-exposed, e.g. by natural radiation or scattered X-ray radiation	When the imaging plate was stored for more than a week, erase it again before use.
X-ray image with small, bright lines and spots	Parts of the imaging plate were exposed to light when handling	Do not keep exposed imaging plates under bright light
	Read image data within half an hour after exposure	
	Imaging plate soiled	Clean imaging plate (see Cleaning imaging plates [→ 67])
	Imaging plate scratched or damaged	Replace the imaging plate
X-ray image with small, bright lines and spots	Micro-scratches on the imaging plate	Replace the imaging plate
	Dirty or scratched imaging plate	Replace scratched imaging plate

9.3 Extraordinary situations

9.3.1 Scanner not responding

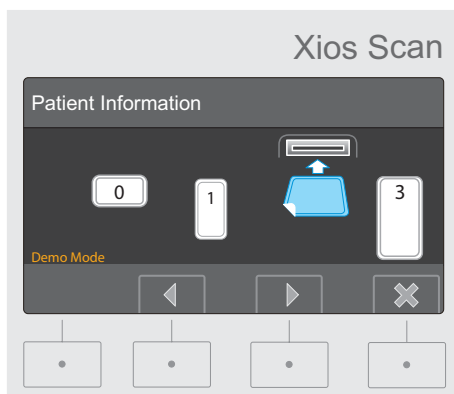
If the scanner does not respond, proceed as follows:

1. Make sure there is no imaging plate in the scanner.
2. Switch off the scanner.
3. Wait for 3-4 s.
4. Turn the scanner back on.

9.3.2 Scanner in demo mode

The scanner has a demo mode, which can be activated by the service technician.

When demo mode is activated, the text *"Demo Mode"* is displayed on the display of the scanner and in the SIDEXIS Plugin for Xios Scan.



IMPORTANT

If the scanner is in demo mode, a demo exposure will be displayed when scanning imaging plates.

The exposure on the imaging plate is erased without being sent to SIDEXIS. It is therefore not available.

No imaging plates exposed with patient data may be scanned in demo mode.

- During commissioning, ensure that the scanner is not in demo mode.
- If the scanner is in demo mode, contact your service technician.

9.4 List of error messages

9.4.1 Information

Error code	Cause	Action / measure
1001	Line error	• Attention: The X-ray image may be missing lines. This may possibly impair diagnostics. • If the error appears often, note down the error code and switch the scanner off. • If the error continues appearing, notify a service engineer.
1002	Line error	• Attention: The X-ray image may be missing lines. This may possibly impair diagnostics. • If the error appears often, note down the error code and switch the scanner off. • If the error continues appearing, notify a service engineer.

9.4.2 Warnings

Error code	Cause	Action / measure
2001	Temperature increases	• Operate the scanner in a cooler location. • If reducing the ambient temperature does not help, call a service engineer.
2002	Defective power supply unit	• Switch the scanner off, wait 3-4 seconds and then switch it back on. • If the error continues occurring, replace the power supply unit.

Error code	Cause	Action / measure
2010	Extraneous light	• Check whether items are preventing the slide door from closing. • Switch the scanner off, wait 3-4 seconds and then switch it back on. • Check whether the housing has any mechanical damage allowing ambient light inside. • If the fault continues appearing, or if there is visible damage to the scanner, call a service engineer.
2011	Extraneous light during self-test initiation	• Check whether items are preventing the slide door from closing. • Switch the scanner off, wait 3-4 seconds and then switch it back on. • Check whether the housing has any mechanical damage allowing ambient light inside. • If the fault continues appearing, or if there is visible damage to the scanner, call a service engineer.
2012		• Switch the scanner off, wait 3-4 seconds and then switch it back on.
2020	Mechanical error	• Switch the scanner off, wait 3-4 seconds and then switch it back on. • If the error continues appearing, notify a service engineer.

Error code	Cause	Action / measure
2021	Mechanical error	- Switch the scanner off, wait 3-4 seconds and then switch it back on. - If the error continues appearing, notify a service engineer.
2030	Mechanical error during the erasing process	- Switch the scanner off, wait 3-4 seconds and then switch it back on. - Note that the imaging plate may not have been completely erased. Therefore, erase once more. - If the error continues appearing, notify a service engineer.

9.4.3 Critical errors

Error code	Cause	Action / measure
4001	Internal error	Call a service engineer.
4002 to 4037		Same measure as 4001
4050	Electronic error, self-test initialization.	- Switch the scanner off, wait 3-4 seconds and then switch it back on. - If the error continues appearing, notify a service engineer.
4051 to 4054		Same measure as 4050
4055	Electronic error, galvo/laser	- Switch the scanner off, wait 3-4 seconds and then switch it back on. - If the error continues appearing, notify a service engineer.
4056 to 4059	Electronic error, galvo/laser	Same measure as 4055
4060	Erasure function error	Call a service engineer.
4080	Motor error	- Switch the scanner off, wait 3-4 seconds and then switch it back on. - If the error continues appearing, notify a service engineer.

Error code	Cause	Action / measure
4081	Touch board error	- Switch the scanner off, wait 3-4 seconds and then switch it back on. - If the error continues appearing, notify a service engineer.
4082	Display error	- Switch the scanner off, wait 3-4 seconds and then switch it back on. - If the error continues appearing, notify a service engineer.

9.4.4 Serious error

Error code	Cause	Action / measure
6001	Electronic error	- Switch the scanner off, wait 3-4 seconds and then switch it back on. - If the error continues appearing, notify a service engineer.
6002 to 6021		Same measure as 6001

10 Dismantling and disposal

10.1 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 environmental friendly usage/disposal of old electrical and electronic devices. Such items must not be disposed of as domestic refuse. This has been expressed using the 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 devices, please proceed as follows:

In Germany

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

- Use the “Returning an electrical device” button under the “eom” menu item on the enretec GmbH homepage (www.enretec.de).
- Alternatively, you can also contact enretec GmbH directly.

enretec GmbH
Kanalstraße 17
16727 Velten

Tel.: +49 3304 3919-500
E-Mail: eom@enretec.de

In accordance with the national disposal regulations regarding old electrical and electronic devices (ElektroG), as the manufacturer, we assume the costs for disposing of the electrical and electronic devices in question. Disassembly, transport and packaging costs shall be borne by the owner / operator.

Prior to disassembly / disposal of the product, it must be fully prepared (cleaned / disinfected / sterilized).

If your unit is not permanently installed, it will be collected from the practice. If it is permanently installed, it will be picked up curbside at your address by appointment.

Other countries

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

11 Packaging symbols

Symbols on the packaging

Take note of the following symbols on the packaging:

Top



Protect from moisture



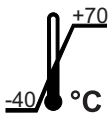
Fragile; handle with care



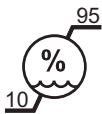
Stack limit



Temperature during storage and transport



Relative humidity during storage and transport



Air pressure during storage and transport



Apply fork-lift truck here



Do not apply fork-lift truck here

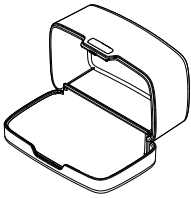
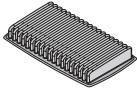




CE Mark

12 Accessories and consumables

Accessories

Illustration	Designation	Lot size	Purchase order number
	Xios Scan transport and storage box	1 pc.	6492503
	Xios Scan mat for the transport and storage box	1 pc.	6526730

Consumables

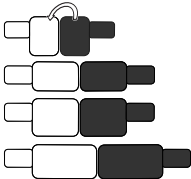
Imaging plates

Illustration	Designation	Lot size	Purchase order number
	Xios Scan imaging plate size 0	2 pc.	6479039
	Xios Scan imaging plate size 1	2 pc.	6479047
	Xios Scan imaging plate size 2	2 pc.	6479054
	Xios Scan imaging plate size 3	2 pc.	6479062

Hygienic protective sleeves

Illustration	Designation	Lot size	Purchase order number
	Hygienic protective sleeve size 0	100 pcs	6479278
	Hygienic protective sleeve size 1	100 pcs	6479286
	Hygienic protective sleeve size 2	100 pcs	6479294
	Hygienic protective sleeve size 3	100 pcs	6479302

Bite guard

Illustration	Designation	Lot size	Purchase order number
	Xios Scan bite guard size 0	100 pcs	6490572
	Xios Scan bite guard size 1	100 pcs	6490580
	Xios Scan bite guard size 2	100 pcs	6490598
	Xios Scan bite guard size 3	100 pcs	6490606

13 Appendix

13.1 Electromagnetic compatibility

XIOS Scan complies with the requirements for electromagnetic compatibility (EMC) according to IEC 60601-1-2.

XIOS Scan is hereinafter referred to as "UNIT". Observance of the following information is necessary to ensure safe operation regarding EMC aspects.

13.1.1 Accessories

Designation of the interface cable:
2 m Ethernet cable with ferrite,

The device may be operated only with accessories and spare parts approved by the manufacturer. Unapproved accessories and spare parts may lead to an increased emission or to a reduced immunity to interference.

The device should not be operated immediately adjacent to other devices. If this proves to be unavoidable, the unit should be monitored to ensure that it is operating properly.

13.1.2 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	

13.1.3 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	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidelines
Electrostatic discharge (ESD) according to IEC 61000-4-2	± 8 kV contact discharge ± 15 kV air discharge	± 8 kV contact discharge ± 15 kV air discharge	Floors should be made of wood or concrete or finished with ceramic tiling. If the floor is 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	Voltage dips: 0% U_T with 1/2 period at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% U_T with 1 period and 70% U_T with 25 periods at 50 Hz and 30 periods at 60 Hz each at 0° Short interruptions: 0% U_T with 250 periods at 50 Hz and 300 periods at 60 Hz		The quality of the line power supply should be that of a typical commercial or hospital environment. If the user of the UNIT requires it to continue functioning following interruptions of the power supply, it is recommended to have the UNIT powered by an uninterruptible power supply or a battery.
Magnetic field of power frequencies (50/60 Hz) according to IEC 61000-4-8	30 A/m	30 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	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidelines
Conducted RF interference IEC 61000-4-6	3 V _{eff} 150 kHz to 80 MHz ¹	3 V _{eff}	$d = [1.2] \sqrt{P}$
Radiated RF interference IEC 61000-4-3	3 V/m 80 MHz to 800 MHz ¹ 3 V/m 800 MHz to 2.7 GHz ¹	3 V _{eff} 3 V _{eff}	$d = [1.2] \sqrt{P}$ at 80 MHz to 800 MHz $d = [2.3] \sqrt{P}$ at 800 MHz to 2.7 GHz with P as the power rating of the transmitter in watts (W) according to the transmitter manufacturer's specifications and d as recommended safety distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey² should be less than the compliance level³ in each frequency range. Interference is possible in the vicinity of equipment bearing the following graphic symbol. 

1. The higher frequency range applies at 80 MHz and 800 MHz.
2. The field strengths of fixed transmitters, such as base stations of radiotelephones and mobile agricultural radio broadcast services, amateur radio stations, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. A site survey is recommended to assess the electromagnetic environment due to fixed RF transmitters. If the measured field strength in the location in which the **UNIT** is used exceeds the applicable RF compliance level 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**.
3. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Test frequency (MHz)	Frequency band ^(a) (MHz)	Radio service (a)	Modulation (b)	Power max. (W)	Distance (m)	Immunity test level (V/m)
385	380 - 390	TETRA 400	Pulse modulation (b) 18 Hz	1.8	0.3	27
450	430 - 470	GMRS 460, FRS 460	FM(c) ± 5 kHz stroke 1 kHz sinus	2	0.3	28

Test frequency (MHz)	Frequency band ^(a) (MHz)	Radio service (a)	Modulation (b)	Power max. (W)	Distance (m)	Immunity test level (V/m)
710 745 780	704 - 787	LTE band 13, 17	Pulse modulation (b) 217 Hz	0.2	0.3	9
810 870 930	800 - 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE band 5	Pulse modulation (b) 18 Hz	2	0.3	28
1720 1845 1970	1700 - 1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE band 1, 3, 4, 25; UMTS	Pulse modulation (b) 217 Hz	2	0.3	28
2450	2400 - 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE band 7	Pulse modulation (b) 217 Hz	2	0.3	28
5240 5500 5785	5100 - 5800	WLAN 802.11 a/n	Pulse modulation (b) 217 Hz	0.2	0.3	9

Note:

If necessary, the distance between the transmitting antenna and the ME unit or ME system can be reduced to 1 m in order to achieve the immunity test level. The 1 m test distance conforms to IEC 61000-4-3.

(a) For some radio services, only the frequencies for the radio link between the mobile communication device and the base station (uplink) have been recorded in the table.

(b) The carrier must be modulated with a square-wave signal with 50% duty cycle.

(c) Alternatively to the frequency modulation (FM), a pulse modulation with 50% duty cycle at 18 Hz can be used, as this, if not the actual modulation, would represent the worst case.

13.1.4 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 maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the **UNIT** - depending on the maximum output power of the communication device, as shown below.

Power rating of the transmitter [W]	Working clearance according to transmission frequency [m]		
	150 kHz - 80 MHz	80 MHz - 800 MHz	800 MHz - 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

The recommended safety distance d in meters (m) can be determined for transmitters, whose maximum power rating is not specified in the above table, using the equation that belongs to the corresponding column, wherein P is the maximum power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1

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

Note 2

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

13.2 Data sizes (uncompressed)

The data size depends on the imaging plate format and the pixel size. The sizes stated are rounded, approximate values.

Theoretical Resolution	22 LP/mm
Pixel size (µm)	23 µm
Size 0	3020
Size 1	4230
Size 2	5560
Size 3	6360

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

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