XO FLEX

INSTRUCTIONS FOR USE

CONTENTS

1 EXTRAORDINARY DENTISTRY

Dear XO user,

Please read this manual carefully and explore all the equipment's extraordinary features:

- The unit shall be installed as described in section 2
- In section 3 we describe how you use the equipment for performing extraordinary dentistry
- You may configure the unit to your own personal needs – see details in section 4
- Read details about infection control and cleaning in section 5
- Maintain the unit as described in section 6
- XO FLEX must be inspected and serviced every 12 months by an XO authorized service provider to ensure safe operation and high uptime – see details in section 8
- In section 9 you find a checklist containing all infection control and maintenance procedures that must be observed
- Section 10 contains a complete list of accessories, detachable parts and consumables that you should be aware of
- In section 11 we list important legal information
- Please see section 12 for a list of symbols used and section 13 for technical product details
- Finally, in section 14 you see XO FLEX Quick Guide

Find more information at xo-care.com or contact XO customer service at info@xo-care.com.

Best regards
XO CARE A/S

2 INSTALLATION

XO FLEX is intended to be permanently installed in a dental operatory at least 220 cm wide and 360 cm long[1] – see Figure 1 and see the required operation conditions in Table 1.
For transport and storage conditions see Table 1 and in Table 2 the installation requirements are given.

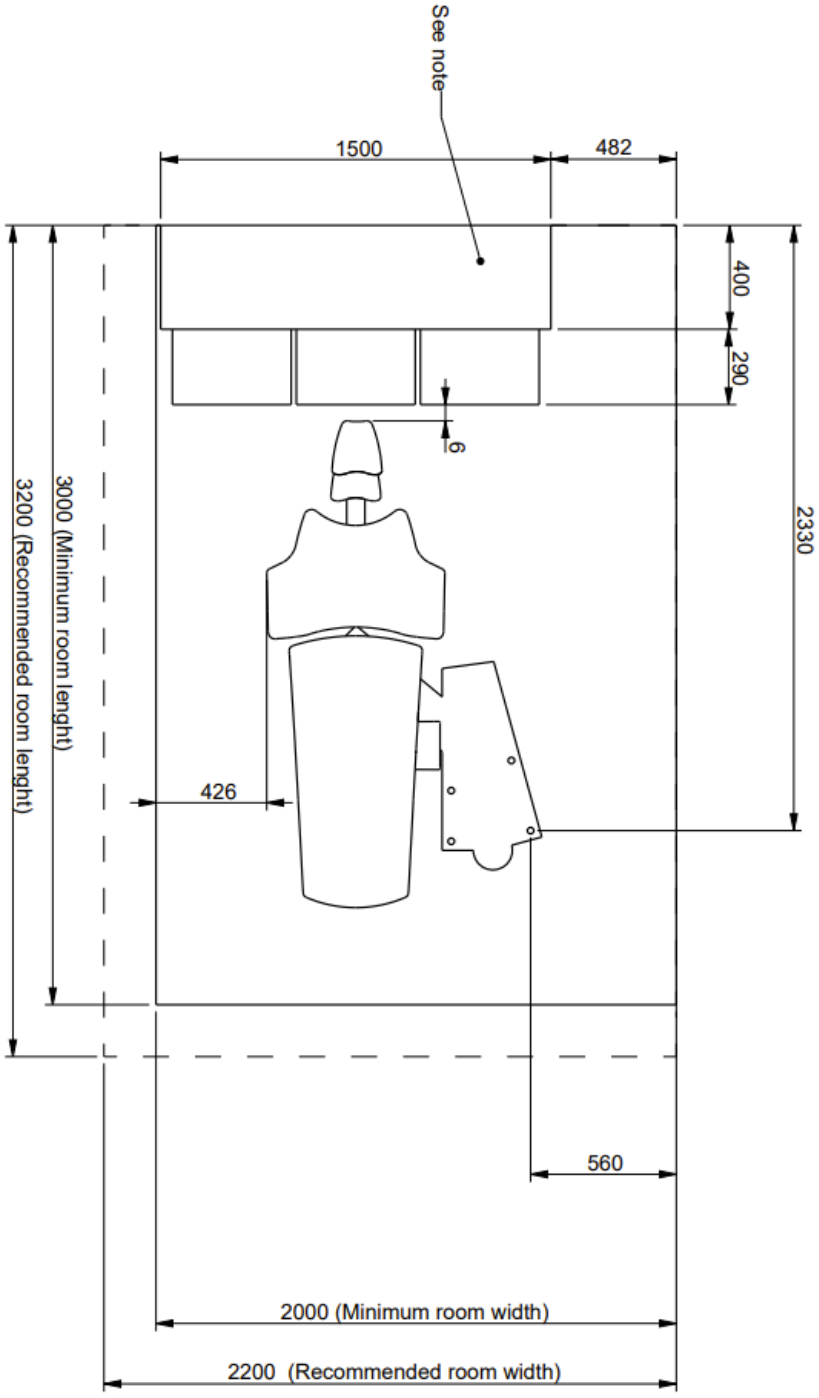


Figure 1 – Plan of installation – XO FLEX

[1] Note: This dimension depends on the depth of the cabinets – in the example shown in Figure 1 the cabinets are 40 cm deep

Table 1 – Operating and transport/storage conditions

Condition	Operation	Transport and storage
Temperature:	+15ºC – +35ºC	-40ºC – +70ºC
Relative humidity:	20% – 85%	10% – 95%
Air pressure:	800 hPa – 1060 hPa	700 hPa – 1060 hPa
Installation altitude	Max. 2,000 meters above sea level	-

Table 2 – Installation requirements

Room	Requirement	
Width	220 cm – see Figure 1	
Length	360 cm – see Figure 1	
Height	> 230 cm	
Electrical	**Requirement**	**Length above floor surface**
Mains supply	230 VAC ± 10%, 50 Hz. PVC cable rated for >75°C with earth and 3 x 1,5 mm2. Main fuse: the electrical installation must be secured with a 10 A fuse.	75 cm (of which 30 cm is stripped)
Equipotential earth (if required by national law)	1 x 4.0 mm^2	
Assistant call control cable	Min. 2 x 0.1 mm^2 and max. 2 x 1.25 mm^2 Max. 2 A / 60 VDC or 2 A / 25 VAC	75 cm
X-ray unit attached to the XO unit	Cable for X-Ray must have its own installations pipe. Cable shall be connected to an installation box in the floor.	
Suction motor control cable	Min. 2 x 0.1 mm^2 and max. 2 x 1.25 mm^2 Max. 2 A / 60 VDC or 2 A / 25 VAC	75 cm
Positioning of cables in the floor	See installation drawing YB-235.	
Data	**Requirement**	**Length above floor surface**
Isolation transformer	When connecting the external PC to the unit, the external PC must be equipped with a medical grade power supply or be powered via a medical grade isolating transformer!	
RS-232 cable	Connect unit and external PC through a RS-232 cable, male/female. The cable's male connector to the unit end. XO part nr: AP-120	70 cm
XO HD Display	Connect XO HD Display and an external PC through a HDMI cable. Depending on the environment it might be necessary to use an HDMI amplifier with the HDMI cable. XO part nr: AP-120	10 cm
Intraoral video camera	Connect the intraoral video camera to an external PC through a USB A cable male/female. The cable's female connector is in the unit end. It is recommended to use a USB Extension 10 m cable with Repeater, XO part nr: AP-120	USB extension cable: 20 cm
Suction, air and water	**Requirement**	**Height above floor surface**
Suction	Suction machine power >600 l/min. Vacuum pressure at the connection point under static conditions: Min = 35 mbar, Max = 150 mbar. Plastic pipe Ø 32 mm with socket – see YB-235.	6 cm max.
Incoming (compressed) air	Pipe 3/8" female internal thread – preferably fitted with a ball valve – see YB-235. Incoming air: • Air pressure 5.5 – 8 bar • Air flow rate > 55 l/min • Humidity dew point < -20°C at atmospheric pressure • Oil contamination max. 0.5 mg/m^3 • Particulate contamination < 100 particles/m^3 (particle size 1 – 5 μm If the incoming air pressure exceeds 8 bar a reduction valve must be fitted. Air quality must be in accordance to local quality of air regulations.	7 cm max.
Incoming water	Pipe 3/8" female internal thread – preferably fitted with a ball valve – see YB-235 Incoming water: • Inlet pressure 2.5 – 6 bar • Water flow rate > 5 l/min • pH: 6.5 – 8.5 • Maximum particle size < 100μm If the incoming water pressure exceeds 6 bar a reduction valve must be mounted before the unit.	7 cm max.

	The integrated water softener filter (UH-200) must be replaced more often than once a year if water hardness exceeds 12 °dH. Please see section 9 for further information. Water quality must be in accordance to local drinking water regulations.	
Backflow prevention	If the unit is <u>not</u> supplied with "unit backflow water prevention" it must have an external backflow prevention device at the connection point with the water supply, or an air gab of at least 20 mm.	
Drain	Plastic pipe Ø 32 mm with socket – see YB-235. Gradient of waste water lines ≥ 1% Drainage capacity ≥ 10 l/min	6 cm max.

XO FLEX unit must be installed by an XO authorized service provider.
Authorized service providers are listed under "XO Partners" at xo-care.com.

WARNING: To avoid the risk of electric shock, this equipment must be connected to a supply main with protective earth.

To avoid the risk of electric shock always switch off the power to the unit in the electrical panel before opening or touching the internal components.

When connecting an external PC (including monitor) to the XO FLEX unit, the external equipment must be powered by a medical grade isolating transformer.

The external equipment must also comply with the applicable standards, e.g.:

- ***IEC 60950-1 (information technology equipment) or IEC 62368-1 (electronic equipment within the field of audio, video, information and communication technology), and***
- ***IEC 60601-1 (medical electrical equipment)***

When external equipment is connected to the XO FLEX unit to create a medical electrical system, the requirements of IEC 60601-1, 3rd edition, must be complied with.

It is the responsibility of the person/organization installing and/or modifying the equipment to ensure that the system conforms to applicable legislation, e.g. Directive 93/42/EEC, or Regulation (EU) 2017/745, and the requirements of IEC 60601-1, 3rd edition.

Installation instructions for XO FLEX can be downloaded from xo-care.com.

3 OPERATION

3.1 GENERAL

XO FLEX is a combined dental unit and patient chair which is to be used by skilled dental operators for prevention and treatment of diseases in the oral cavity of humans.
The unit has a compact floor-mounted stand fitted with a patient chair, a cuspidor and single-column pivoting articulated balanced arms for the instrument bridge, operating light and display – see Figure 2.

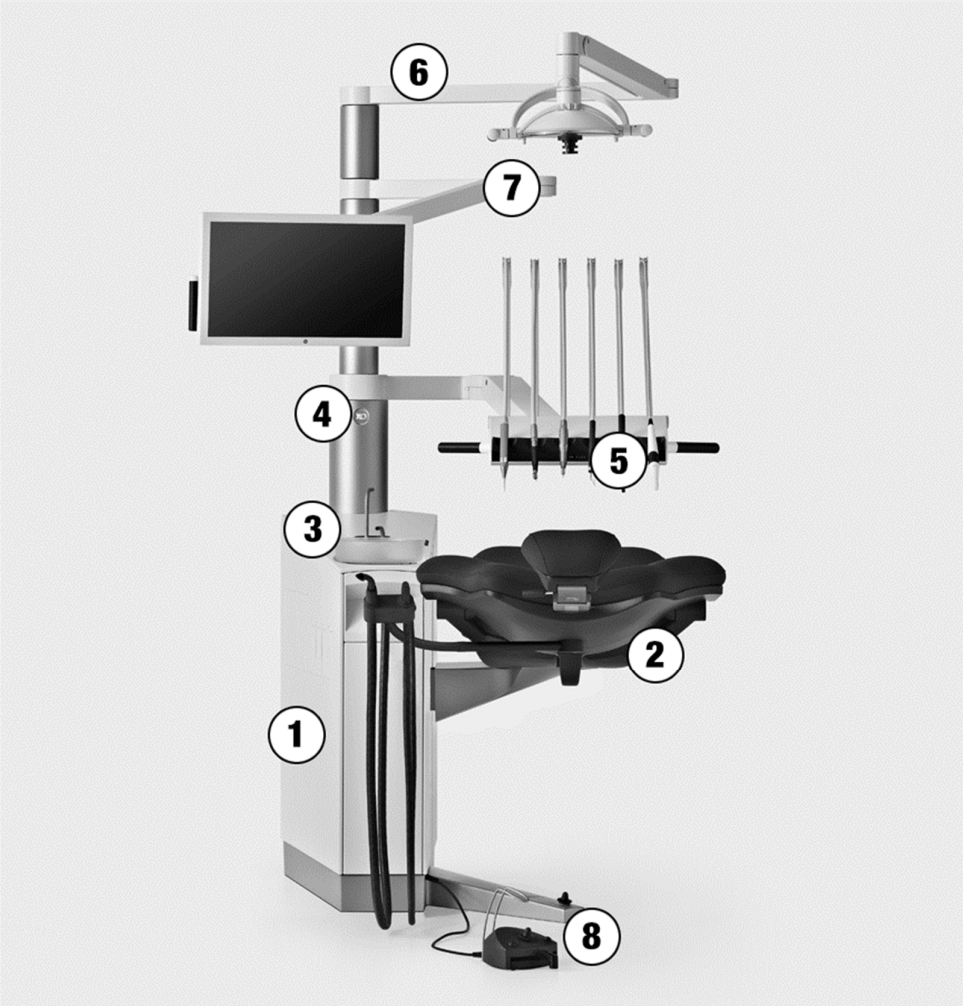


Figure 2 – Main XO FLEX elements: (1) unit stand, (2) patient chair, (3) cuspidor and cup filler, (4) unit column, (5) instrument bridge, (6) operating light, (7) HD Display and (8) foot control

	A complete technical description of XO FLEX is available at xo-care.com.

	***Please note that XO FLEX must be operated in accordance with this manual and by dental professionals only!***
	***To avoid injury to persons or material, do not use XO FLEX or its accessories if signs of operational, electrical or mechanical defects are found.***
	***Do not use XO FLEX in oxygen-enriched environments!*** ***The XO Flex is not designed for use in areas where an explosion hazard may occur.***
	***Use of other equipment adjacent to or stacked on this equipment should be avoided because it could result in improper operation.***
	***Exercise caution when using the unit in combination with other equipment that can move.***
	***Do not simultaneously touch the patient and any external electrical equipment such as PCs, monitors, etc.***
	***Do not simultaneously touch the patient and the supply connector for the monitor at the back of the monitor.***
	***Do not simultaneously touch the patient and the connector for peristaltic pump on the rear panel of the unit.***

3.2 SWITCH THE UNIT ON

Switch the unit on (and off) using the main switch – see Figure 3.
The unit is ready for use after a few seconds when the text “XO FLEX” is shown on the instrument bridge display and you hear the welcome tune.

Figure 3 – Main switch (1)

The main switch is used for isolating the equipment electrically from the supply mains.

	In case of emergency, use this switch to turn off the unit.

3.3 INSTRUMENT BRIDGE IN PARKING POSITION

	Always place the instrument bridge to the left of the unit when the patient is accessing the chair as shown in Figure 4.

In this position, the patient does not see the instruments when getting in and out of the chair and the bridge will be easily accessible for cleaning and disinfection.

Figure 4 – Position of instrument bridge for optimal patient access to chair

3.4 FOOT CONTROL

3.4.1 FUNCTION

XO FLEX is controlled hands free by using the foot control – see Figure 5 – and the chair base joystick – see Figure 6.

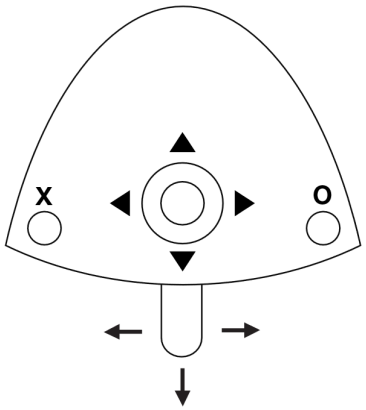


Figure 5 – Foot control

The foot control has:

- a pedal that can be moved to the right (➞), to the left (⬅) and pressed down (⬇)
- an **X** button
- an **O** button
- a joystick that can be moved north (▲), west (◀), south (▼) and east (▶)

When all unit instruments are at rest, the foot control manages functions related to the unit and chair etc.
When a unit instrument is lifted forward, the foot control manages the active instrument.

The chair base joystick is used to position the patient chair.
The chair base joystick can be moved north (△), west (◁), south (▽) and east (▷) – see Figure 6.

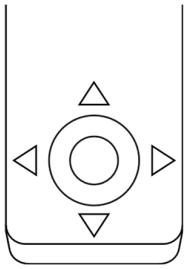


Figure 6 – Chair base joystick

	In this manual, the above-presented terminology (e.g. ▲ = move joystick to north) will be used to explain the functions of XO FLEX.

	See section 14 for an overview of the foot control and chair base joystick functions.

3.4.2 POSITION THE FOOT CONTROL

Place the foot control close to the unit's supporting leg and operate it with your right foot when working in positions 9 – 11 o'clock (see Figure 7). In working position 12 o'clock you may find it easier to use the left foot (right-handed operator).

Figure 7 – Optimal position of foot control

3.5 PATIENT CHAIR

The patient chair is mounted on the side of the unit which provides maximum legroom for the dentist and the assistant. The chair has a backrest with integrated armrests, double hinged neck rest and is equipped with a joystick for controlling the chair functions med the foot.

3.5.1 FOOT CONTROL OF PATIENT CHAIR

Use the foot control to position the patient chair.
Position the chair in working position 1 with ◁.
Position the chair in working position 2 with ▷.
When you activate ▽ the chair moves to the rinse position. The second time you activate ▽ the chair moves to the entry position – the position used to enter the chair. If you activate ▽ twice within a second, the chair will move directly to the entry position.
Activating △ brings the chair to the previous position – the last "still" position prior to the present. See Figure 8.

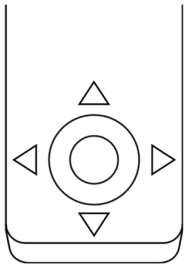


Figure 8 – Position the patient chair using the chair base joystick

3.5.2 SMALLER ADJUSTMENTS OF PATIENT CHAIR

You make smaller adjustments of the chair with the foot control joystick:

- Lift the chair with ▲ (north)
- Lower the chair with ▼ (south)
- Increase the backrest inclination with ►(east)
- Decrease the backrest inclination with ◄ (west)

See Figure 9.

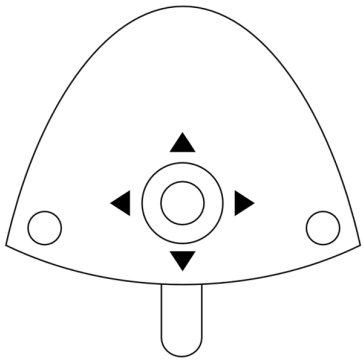


Figure 9 – Smaller adjustments of the patient chair using the foot control joystick

3.5.3 SAFETY

The chair has been designed with a hinged backrest and is shaped so that the legs of the operators will not be trapped below the chair when moving downwards.

	***The patient chair is equipped with a function stop:*** ***You interrupt all automatic chair movements immediately by touching any button on the foot control or by lifting an instrument forward.***

	***To avoid damage never place any objects, including operators' seats, under the patient chair.***

	***The patient chair is dimensioned to carry a patient with a weight of up to 150 kg! Exceeding the maximum allowed weight will compromise the structural stability of the unit and the patient chair.***

3.5.4 SUPINE PATIENT POSITION

The unit is designed with over-the-patient delivery of instruments for working primarily on supine patients. That allows you to see all tooth surfaces in good working postures – see details in section 3.6.

	***XO FLEX is intended to be used primarily with supine patients!***

3.5.5 NECK REST

The patient chair is equipped with an adjustable neck rest, supporting the patient's neck and head. To obtain the best patient experience, please follow these instructions when bringing the patient into a working position:

1. Start positioning the chair
2. While the chair moves towards the working position use your left hand and gently push the neck rest to follow the patient's head – see Figure 10 (1)
3. When in the desired working position, adjust the angular position of the neck rest using the release handle (2)

Figure 10 – Neck rest: (1) push the neck rest while the chair moves; (2) release handle

3.5.6 CHILD CUSHION

For treatment of children, a child cushion is available.

Figure 11 – Child cushion

3.6 INSTRUMENT BRIDGE IN WORKING POSITION

To obtain easy access to and optimal balancing of the instruments, place the instrument bridge close to the center of the patient's chest – with a distance from the tips of the instruments to the oral cavity of 30 cm – see Figure 12.

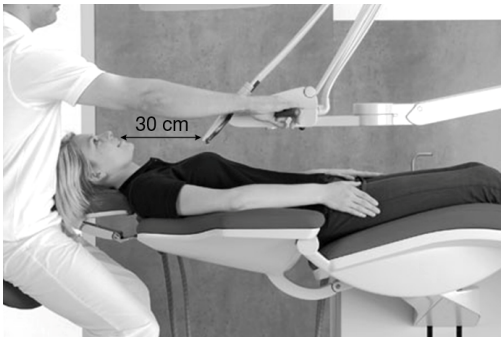


Figure 12 – Position of instrument bridge while working

	Always use the handles to position the instrument bridge. ***Never pull the instrument bridge using an instrument – this may damage the instrument suspension.***

3.6.1 BALANCED INSTRUMENTS

Grab an instrument as shown in Figure 13.

Figure 13 – Lifting an instrument forward

Each instrument suspension is fitted with a spring that can be adjusted so that the instrument is perfectly balanced – see section 8.4.

3.6.2 FOUR-HANDED OR SOLO WORK

XO FLEX is equally suited for four-handed (Figure 14) and two-handed operation (Figure 15).

Figure 14 – Four-handed operation: The operator is working in the 9 o'clock position, the chairside assistant in the 3 o'clock position and the hand instruments are positioned near the patient's temple

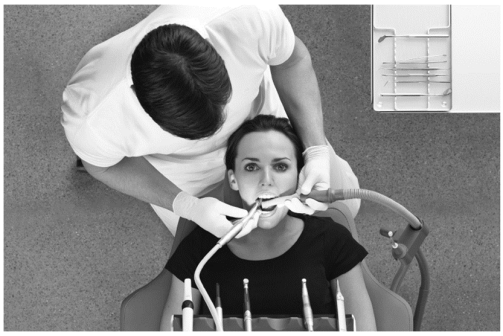


Figure 15 – Two-handed operation: The operator is working in the 11 o'clock position

3.6.3 WORKING POSITIONS

With the patient in the supine position you may work in positions between 9 o'clock to 12 o'clock (see Figure 16) to obtain the best possible vision while maintaining a healthy sitting position (see section **Error! Reference source not found.**.)

The patient chair neck rest allows you to place the patient's head in six different positions (see Figure 17). This, combined with the flexibility of working in positions between 9 and 12 o'clock (see Figure 16), provides you with the best possible view of each tooth surface without bending or straining your neck, spine or upper body.

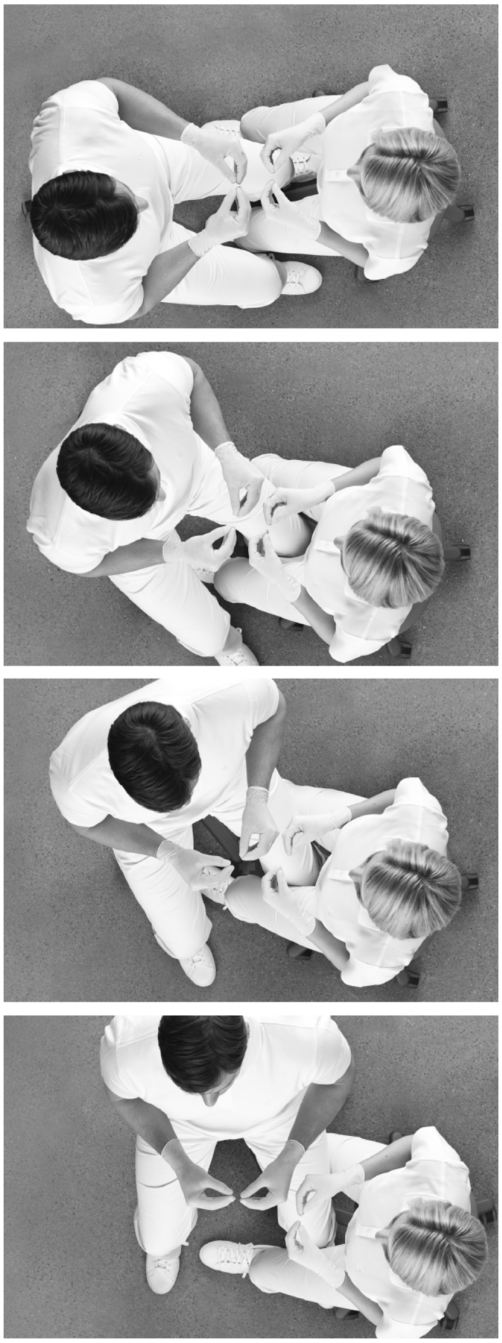


Figure 16 – Four operator's positions

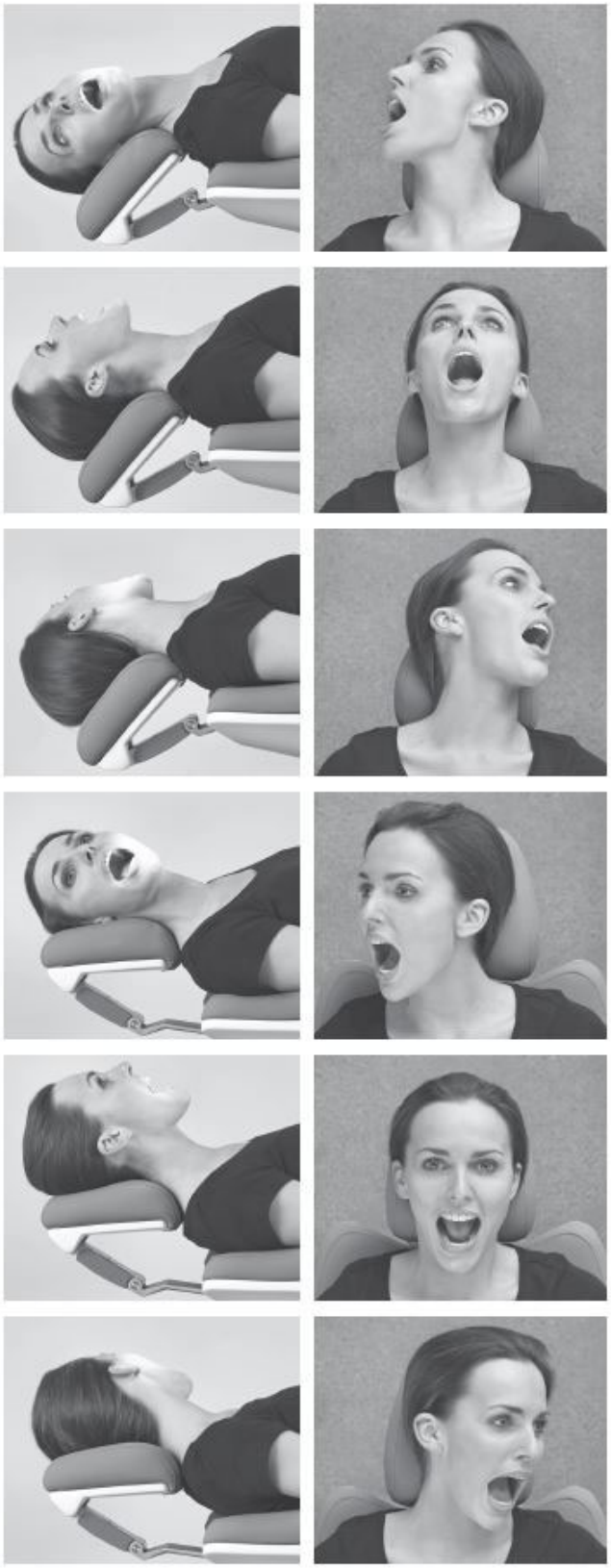


Figure 17 – Six different patient positions

3.7 INSTRUMENT CONTROL

3.7.1 FOOT CONTROL OF INSTRUMENTS

You activate the first instrument lifted forward with the foot control pedal. To avoid unintentional activation of a second instrument lifted forward you will only be able to activate the second instrument when the first instrument is laid back and the foot control has been released.
The syringe may be used even though another instrument is lifted forward.
The intraoral video camera may be used simultaneously with another activated instrument – but control of camera functions via the foot control is only possible when the video camera is the only instrument lifted forward.

3.7.2 INSTRUMENTS ON THE INSTRUMENT BRIDGE

Up to 6 instruments may be fitted to the instrument bridge.

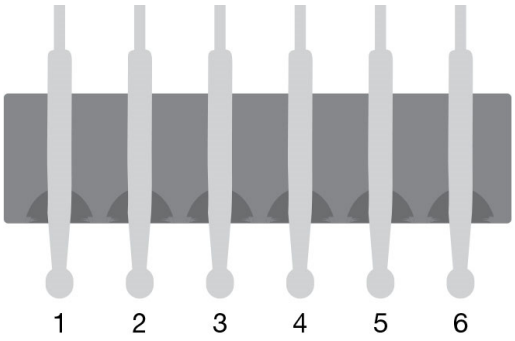


Figure 18 – Numbering of unit instruments

The instruments are numbered 1 – 6 starting from the left.
Your XO authorized service provider may add instruments or change the order of the instruments – the multifunction syringe, however, must always be placed to the left (right-handed operator) or to the right (left-handed operator).

3.7.3 INSTRUMENT BRIDGE DISPLAY

Data concerning the selected instrument is shown on the instrument bridge display – see Figure 19 – and the instrument may be controlled using the foot control.

Figure 19 – Instrument bridge display

The display consists of:

- One red 8-digit text field mostly used for indication of the primary instrument parameter (for example, speed of a micro motor)
- Three green LEDs for indication of selected amount (three levels) of spray water or for spray water off (all LEDs off)
- One blue LED for indication of spray air on/off
- One white LED for indication of automatic chip blow enabled/disabled

3.8 SYRINGE – LUZZANI

The syringe is used as described in the manual supplied by Luzzani – or visit luzzani.com.

Lift the syringe forward and control it with the two buttons.

The syringe can be used at the same time as the other instruments.

3.9 MICROMOTOR – BIEN-AIR MC3 / BIEN-AIR MX2

The micromotor is used as described in the manual supplied by Bien-Air – or visit bienair.com.

The micromotor is intended to be used with contra-angles and handpieces with couplings as specified in ISO 3964, type 2 or type 3

Lift the micromotor forward and control it with the foot control.

Activate the motor clockwise in the range 100 RPM – selected maximum speed[2] (see below) with → or counterclockwise with ←.

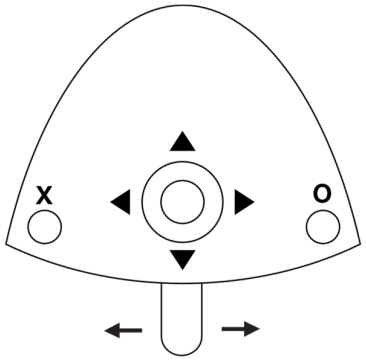


Figure 20 – Foot control of micromotor

See the maximum speed on the display when the foot control is not activated.

See the actual speed on the display when the motor is running.

Change spray selection (water & air, air only or no spray) with **X**.

[2] Please note that this is the speed of the micro motor itself. When you fit a contra-angle the speed of the bur may be changed!

Enable/disable automatic chip blow with **O**.

	When the automatic chip blow is enabled a short burst of high-pressure air dries the preparation each time an instrument with spray water stops. ***Using the automatic chip blow function significantly reduces the number of shifts between rotation instrument and syringe.***

Choose between three levels of spray water:
Increase amount of water with ►.
Decrease amount of water with ◄.

	To avoid necrosis, it is generally recommended to work with a "wet" spray that gives at least 50 ml spray water per minute measured with the contra-angle fitted! ***In some cases – e.g. when preparing a cavity that is not close to the pulp – and you want to minimize the spray aerosol – it may be acceptable to use less water in the spray.***

Choose between three maximum speed levels:
Increase maximum speed with ▲.
Decrease maximum speed with ▼.

3.10 AIR INSTRUMENT

An air turbine or an air scaler may be attached to the hose – in the following called "the air instrument".

The air instrument is used as described by the supplier.

Air instruments with a type 3 coupling as specified in ISO 9168 shall be used.

Lift the air instrument forward and control it with the foot control.

Activate the air instrument (one step) with ➞ or ➞.

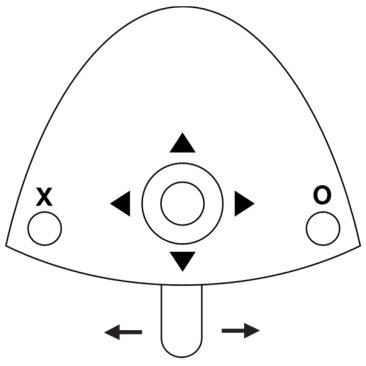


Figure 21 – Foot control of turbine

See drive air (in % of maximum) on the display.

Change spray selection (water & air, air only or no spray) with **X**.

Enable/disable automatic chip blow with **O**.

	When the automatic chip blow is enabled a short burst of high-pressure air dries the preparation each time an instrument with spray water stops. ***Using the automatic chip blow function significantly reduces the number of shifts between rotation instrument and syringe.***

Choose between three levels of spray water:
Increase amount of water with ►.
Decrease amount of water with ◄.

	To avoid necrosis, it is generally recommended to work with a "wet" spray that gives at least 50 ml spray water per minute measured with the turbine hand-piece fitted! ***In some cases – e.g. when preparing a cavity that is not close to the pulp – and you want to minimize the spray aerosol – it may be acceptable to use less water in the spray.***

Choose between three drive air levels:
Increase drive air with ▲.
Decrease drive air with ▼.

3.11 ULTRASONIC SCALERS

The ultrasonic scaler is used as described by the supplier.
For XO ODONTOSON scalers see below in section 3.12.

Lift the scaler forward and control it with the foot control.

Switch on the power (one step activation) with ➞ or ➞.

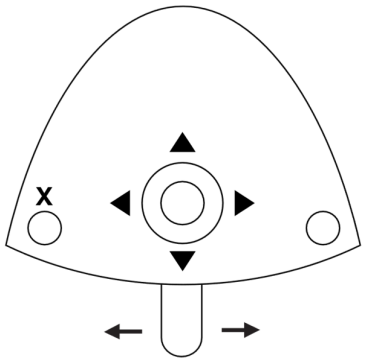


Figure 22 – Foot control of scaler

See the power (in % of maximum) on the display.

Enable/disable irrigation water with **X**.

Choose between three levels of irrigation water:
Increase amount of water with ►.
Decrease amount of water with ◄.

Choose between three power levels:

- Increase maximum power with ▲.
- Decrease maximum power with ▼.

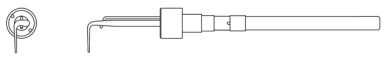
For details about XO ODONTOSON 360 scaler see below and for details about other scalers, see user manuals supplied by the manufacturer.

3.12 XO ODONTOSON 360 ULTRASONIC SCALER

XO ODONTOSON 360 is intended to be used for treatment in the oral cavity of humans. XO ODONTOSON 360 is a multi-purpose dental scaler for periodontology, endodontics and prophylaxis.

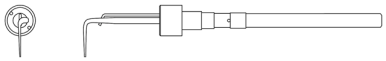
XO ODONTOSON 360 is supplied with one handpiece and six instruments (consisting of a titanium tip fitted with an exchangeable ferrite rod) fitted into two autoclavable instrument holders in Teflon:

Universal instrument (209080) – 2 pieces



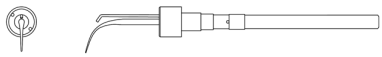
For removal of supra- and subgingival stain and calculus in all areas and for general scaling on patients with moderate plaque or calculus.

Perio instrument (209030)



Removes supra- and subgingival stain and calculus in all areas. Particularly useful for removal of subgingival calculus in pockets as deep as 13 mm. Use the tip as if using a periodontal probe.

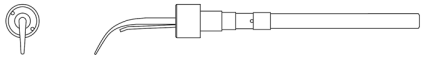
Thin Line Straight instrument (209034) – 2 pieces



Useful for fine planning after gross scaling with other XO ODONTOSON 360 instruments. Provides good furcation access. Is also useful for root planning, but only after gross debridement with a Perio instrument.

	For Thin Line instruments please observe: ***Use only for fine scaling or debridement after gross scaling with other instruments.*** ***Repeated use of Thin Line instruments for gross scaling can result in damage to the titanium tip.*** ***Thin Line instruments should never be used at power level settings more than 50 % of maximum power.***

Heavy Duty Straight Instrument (209010)



Particularly useful for removal of supra- and subgingival calculus labially and lingually. Can be applied interproximally, using the rounded tip to remove calculus and other heavy deposits and stains.

	Do not attempt to sharpen, bend or otherwise re-shape the instrument tips! Doing so may seriously degrade the performance of the instrument.

For a complete list of available instruments – including instruments for endo procedures – please visit xo-care.com.

3.12.1 HOW TO USE XO ODONTOSON 360

To fully benefit from the rotational titanium tip movement and high frequency, it is important that the instrument is properly handled and applied – see Figure 23.
Use short, sweeping, paintbrush-like, back and forth strokes over the surface being treated.
Keep the tip moving back and forth with the end of the tip probing the pocket when necessary.

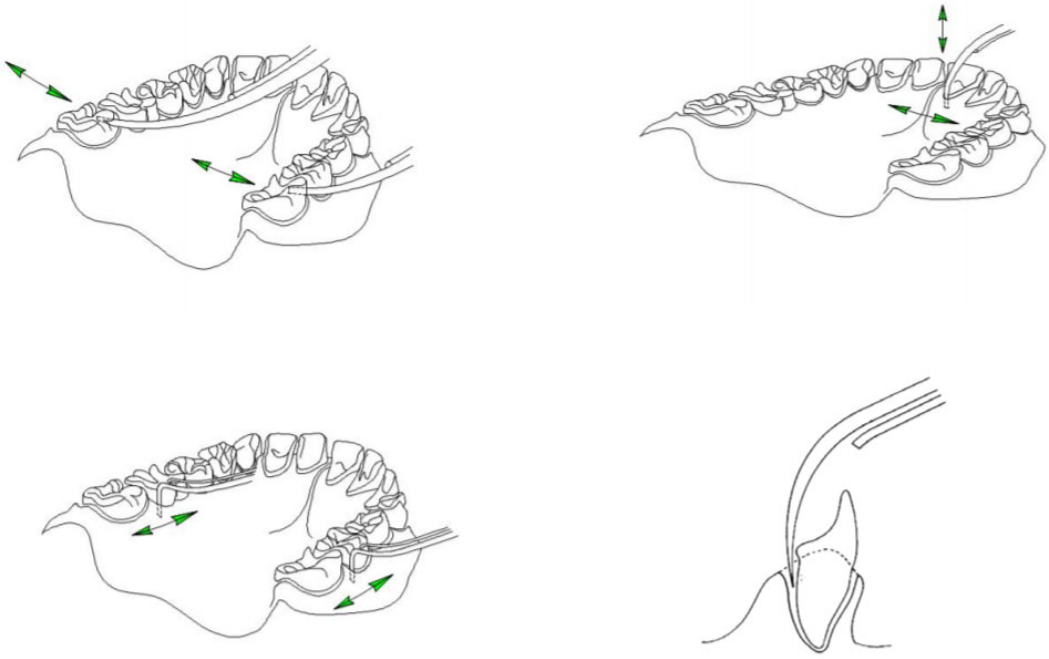


Figure 23 – Using XO ODONTOSON 360

	When working with XO ODONTOSON 360: • ***Always use the instrument parallel to the tooth surface with the sides of the tip applied to the tooth surface*** • ***Do not apply the tip at right angles to the tooth surface*** • ***Do not use the tip as a pick – this will scratch the tooth surface***

	• ***Always apply very little pressure to the tooth surface***

	Increasing the contact pressure will neither increase the efficiency nor improve the quality or speed of the treatment!

If you use XO ODONTOSON 360 instrument in this way you will achieve:

- Easy access to any tooth surface without awkward positioning of the hand-piece and hand. As the tip rotates and is “active” on all sides, you have a 360° highly efficient working surface without “dead zones”.
- The rotational motion brushes rather than “hammers” the tooth. This has a gentle polishing effect on the tooth. It is generally much less painful for the patient and less tiring for the operator.

	Only use XO ODONTOSON 360 on teeth and root surfaces.

Use the mirror to hold lips and tongue away from the instrument tip.

	Risk of thermal injury! ***Avoid touching patient lips, tongue or other soft tissue with the non-cooled part of the instrument tip!***

	Handle the instruments carefully as the attached ferrite rod is fragile!

	Always use as much irrigation water as practically possible to avoid unnecessary wear of the instrument.

3.12.2 CHANGING THE INSTRUMENT

Detach the instrument from the hand-piece just by pulling it out.

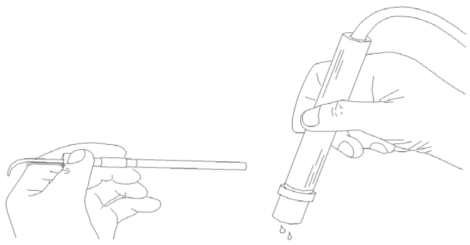


Figure 24 – Replacing instrument tip

	Always empty the hand-piece of any water before applying a new instrument. Wipe off any drops of water before applying an instrument.

	It is important that the instrument is always firmly seated in the hand-piece!

As a matter of course, the titanium tips will become worn down with time due to use. The efficiency of an instrument will therefore be gradually reduced.

Several factors contribute to wear of instruments:

- Time used
- The type and consistency of calculus deposits in patients
- The quantity of irrigation being used

The lifetime may therefore vary considerably from instrument to instrument.

3.12.3 XO ODONTOSON 360 WITH ANTIMICROBIALS AND STERILE SALINE

In combination with XO Peristaltic Pump, XO ODONTOSON 360 can be used with antimicrobials or sterile saline.
Prepare the peristaltic pump as described in section 3.14.
Insert the connector piece (XO-069) between the hose and the handpiece – as shown in Figure 25.

Figure 25 – Connector piece for external irrigation of XO ODONTOSON 360

Attach the irrigation tube to the connector piece using the appropriate outlet – see Figure 26.

Figure 26 – XO ODONTOSON 360 connected to external irrigation

3.13 XO ODONTOCURE CURING LIGHT

The intended use of XO ODONTOCURE is polymerization of light cure resin-based composites used for fillings in human teeth. XO ODONTOCURE is a “Polywave” type curing light, meaning the

emitted light has two peak values making it suitable for filling composits containing several initiators.

XO ODONTOCURE is supplied with:

- 1 * Fiber glass rod (AP-915)
- 1 * Light Shield (AP-916)
- 100 * Cross infection protection sleeves (AP-918)
- 3 * Testing devices (AP-920) for measuring curing effectiveness

Lift the curing light forward and control it with the foot control.

See the current exposure time on the display before the foot control is activated.

Choose between three different exposure times with ▲ and ▼ and see the selected time on the instrument bridge display.

Start the curing process with ➞ or ➞.

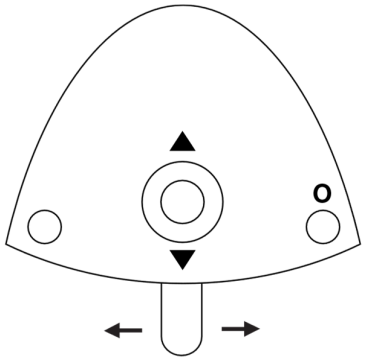


Figure 27 – Foot control of XO ODONTOCURE

See elapsed exposure time on the display during the process.

Hear a beep at intervals of 5 seconds.

For the best results, the distal end of the light guide should be held perpendicular at a distance of no more than 10 mm.

	***Never look directly into the light or direct it at the eyes of others!*** ***XO ODONTOCURE emits thermal radiation, and blue light and ultraviolet light in the range 385 – 515 nm at an intensity that requires protection of the eyes. Protect eyes with light shield and/or protective eyewear that removes light in the previously mentioned wavelengths.***

	***CAUTION! The high light intensity of XO ODONTOCURE is accompanied by heat generation on the exposed surface! Uninterrupted exposure of more than 20 seconds to the same surface shall be avoided. Curing at intermitted intervals is recommended.***

Switch soft-start on and off with **O** while the light is not activated.

Soft-start is a feature that can help reduce shrinkage. When enabled, the light will emit light at a reduced intensity for a manually preset number of seconds before going to full intensity.

For curing of anterior teeth use the light shield:

Figure 28 Light Shield

	***XO ODONTOCURE is intended for intermittent use. If activated continuously the message "TOO HOT" is displayed and the instrument is turned off. After some seconds, depending on the temperature, the light is ready for re-activation.***

3.14 XO PERISTALTIC PUMP

XO Peristaltic Pump is intended for supplying sterile saline or antimicrobials when using instruments with external water delivery.

Irrigation liquid is carried by means of the pump and an irrigation tube, from a reservoir or a bag located at the rear of the unit to an instrument of the operator's choosing. The irrigation tube is part of a disposable irrigation kit that contains the different tube parts needed for connecting a reservoir or bag with the different supported instrument types.

The pump is detachable and can be shared among multiple XO units.

The pump is automatically detected by the unit when attached.

	***Use of peristaltic pumps requires that the unit be prepared for it (i.e. unit must be equipped with option XO-051).***

	***Do not touch the connector of the XO Peristaltic Pump and the patient simultaneously!***

3.14.1 DISPOSABLE IRRIGATION KIT

The irrigation kit is manufactured for XO CARE A/S as an accessory for XO Peristaltic Pump.

The kit consists of a main tubing part and two alternative outlet parts. The main tube is equipped with a bag inlet cannula and an insert piece for the pump. Two alternative outlet parts are provided: one for connecting hand-pieces with a single inlet and one for connecting hand-pieces with two inlets.

	***Risk of contamination!*** ***The disposable irrigation kit package has been sterilized by ethylene oxide gas. Sterility cannot be relied upon if 1) the package has been opened or damaged or 2) the expiration date stamped on the package has passed.*** ***Appropriate sterile handling procedures must be observed to ensure and maintain sterile conditions.*** ***The disposable irrigation kits are for one-time use only. Do not re-sterilize!***

XO Peristaltic Pump is delivered with five sample disposable irrigation kits. Additional kits can be ordered from your XO distributor:

- Pre-sterilized, disposable irrigation kit, 50 pcs (XO-055)

3.14.2 ATTACHING THE PUMP MODULE

Attach the pump module as shown in Figure 29.

Figure 29 – Attaching the pump module to the unit

After use, the pump module can be safely removed from the unit. It is not necessary to switch off the unit before detaching the pump.

3.14.3 ATTACHING THE IRRIGATION TUBE

Release the pump head by turning the handle (1) counter-clockwise – see Figure 30.

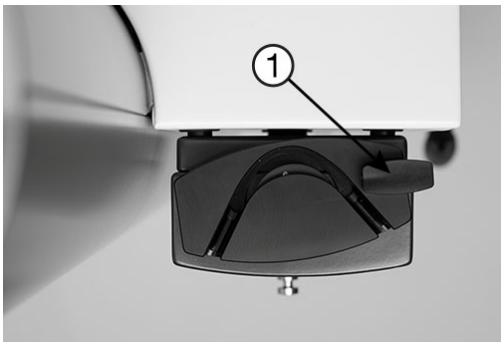


Figure 30 – Releasing the pump head

Attach the irrigation tubing to the pump head as shown in Figure 31.
Make sure the tube is held in place by the two plastic connectors.

Figure 31 – Attaching the irrigation tubing

Lock the pump head by turning the handle (1) clockwise – see Figure 32.

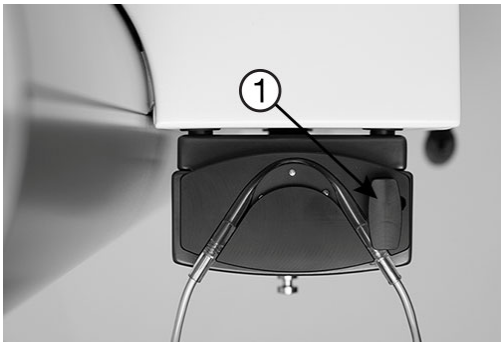


Figure 32 – Locking the pump head

Place the irrigation tube into the tube guide and attach it to the instrument bridge arm, as shown in Figure 33.

Figure 33 – Placing the irrigation tube

Attach the irrigation tube to the hose of the instrument to be used using the stainless-steel clips – see Figure 34.

Figure 34 – Attaching the irrigation tube to the instrument hose

3.14.4 IRRIGATION BAG

Insert the bag inlet cannula into the irrigation bag and hang the bag containing the irrigation liquid from the knob at the bottom of the pump module – see Figure 35.

Figure 35 – Irrigation bag

3.14.5 IRRIGATION RESERVOIR

Place the reservoir containing the irrigation liquid into the holder below the pump – see Figure 36.

Figure 36 – Placing the reservoir

Using an appropriate sterile tool (e.g. a pair of scissors), cut the inlet cannula off the irrigation tubing. Attach the irrigation tubing to the spear and place the spear in the reservoir.
See Figure 37.

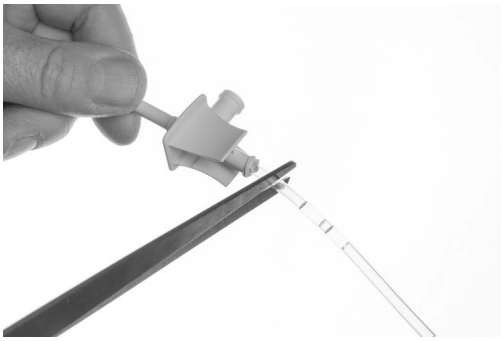


Figure 37 - Cutting the irrigation tubing bag inlet cannula

3.14.6 DESIGNATION OF INSTRUMENT

Figure 38 – Initiating selection of instrument to be used with XO Peristaltic Pump

Before the pump can be used, a designated instrument must be selected.
With all instruments at rest, press the button (1) once – see Figure 38.
The unit enters configuration mode and a menu will be shown on the display.

Activate ▲ and ▼ of the foot control joystick to navigate to the menu item labeled “PUMP”.

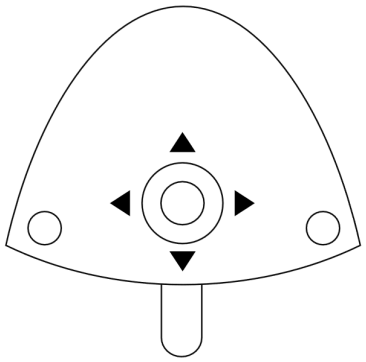


Figure 39 – Foot control configuration of peristaltic pump

Activate ► to access configuration of the pump – see Figure 40.

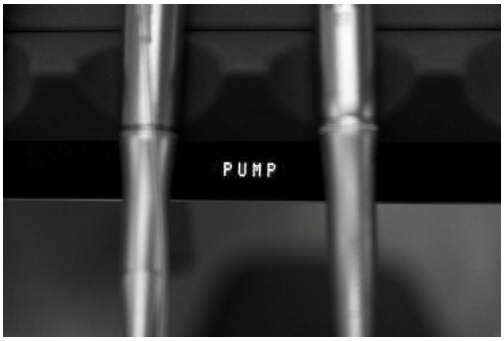


Figure 40 – Display

Use ▲ and ▼ to select the designated suspension that should be used with the pump – see numbers in Figure 18, page 22.

Figure 41 – Displaying instrument suspension

Use ◄ to confirm the choice of suspension.
Press the configuration button (1) on Figure 38 once to exit configuration mode.
When the designated instrument has been selected, the green LED will blink.
If you want to use the designated instrument without peristaltic pump, select “NONE” in the PUMP menu.

3.14.7 ADJUSTING THE FLOW LEVEL

Choose between three levels of irrigation:
Increase irrigation with ►

Decrease irrigation with ◄

3.15 INTRAORAL HD VIDEO CAMERA

Dürr VistaCam IX HD Smart is supplied with:

- 1 * HD Smart Camera
- 1 * exchangeable head (CAM)
- 20 * Cross infection protection sleeves
- Installation CD for Dürr DBSWin imaging software
- 2 * extra O-rings for the handpiece

Exchangeable heads and spacers available from Dürr Dental, please see duerrdental.com for further information:

Figure 42 – exchangeable heads

Figure 43 – Spacer for the camera

3.16 CONNECTING THE CAMERA TO THE COMPUTER

The camera connects to the computer via USB cable.
It is always recommended to use a USB cable with a build-in repeater to support a more stable video connection.

	The intraoral camera must be connected to an external PC! ***This is done during installation of the camera and shall be done by an XO authorized service provider.***

3.17 USING THE CAMERA

Unlike all other unit instruments, you may use the video camera also when another instrument is active.
Lift the camera forward and display a video image on a screen.

Control the video camera with the buttons on the handpiece. The small button is to focus the image, the big button is for switching between “still” and “live” mode.

Figure 44 – buttons on the camera

You may also control the video camera with the foot control when no other instruments are active.
Toggle between “still” and “live” mode with ←.
Save the active video image to the connected PC with →.

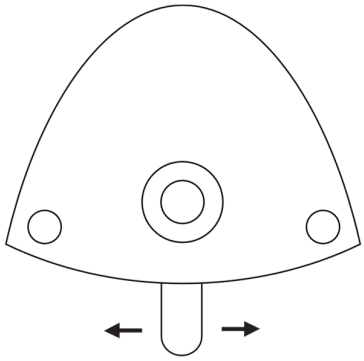


Figure 45 – Foot control of intraoral video camera

	To use the foot control for controlling the camera, the PC must be appropriately configured and a compatible imaging program must be used. Furthermore, the PC must be connected to the unit by means of a RS-232 serial cable for carrying the control signals from the foot control to the imaging program. This is in addition to the USB cable carrying the video signal. ***Please consult your XO authorized service provider for further details.***

For other information please see the enclosed information from Dürr Dental or visit duerrdental.com.

3.18 OPERATING LIGHT

3.18.1 POSITION THE LIGHT

	***Place the light head 70 cm from the patient's lips and position the light head so that the direction of the light is parallel to your viewing direction. See Figure 46.***

This position of the light head also prevents the instrument suspensions from touching the light head while working.

Figure 46 – Correct position of light

3.18.2 SWITCH THE LIGHT ON AND ADJUST THE LIGHT INTENSITY

Manage the light manually by activating the no-touch sensor under the light head – see Figure 47 (1).
Hold your hand within activation distance for less than one second and the lamp switches on/off.
Change the light intensity (3 levels) by activating the sensor for more than one second.

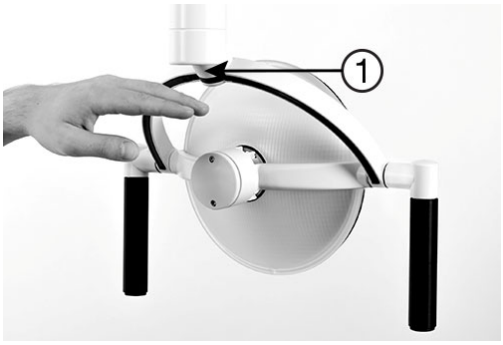


Figure 47 – No-touch sensor

Optionally, you may configure the operating light to be switched on/off using the foot control while the instruments rest:

- Switch the light on/off with a short activation of ⬇
- You change light intensity by holding ⬇ down

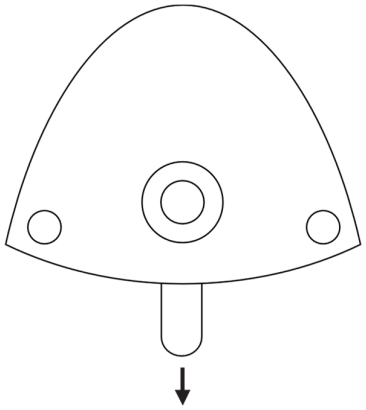


Figure 48 – Optional foot control of light

	When working with light-curing composites please note that the operating light may influence the curing process. ***Switch to a lower light intensity or switch the light off if necessary!***

3.18.3 AUTOMATIC FUNCTIONS

The light switches on automatically when the patient chair reaches working positions 1, 2 or previous position.
The light switches off automatically when the patient chair is moved towards the entry position.

3.19 XO HD DISPLAY

	Please note that XO HD Display must be connected to an external PC!

	The best image quality is obtained using the native resolution of 1920 * 1080 pixels.

The display contains 6 sensor buttons at the bottom right (see Figure 49). The meanings of the buttons are described in Table 3. Note that some buttons have different functionality depending on whether the on-screen-display (OSD) is shown or not.

	Please do not press the sensor buttons too hard or you may damage the buttons!

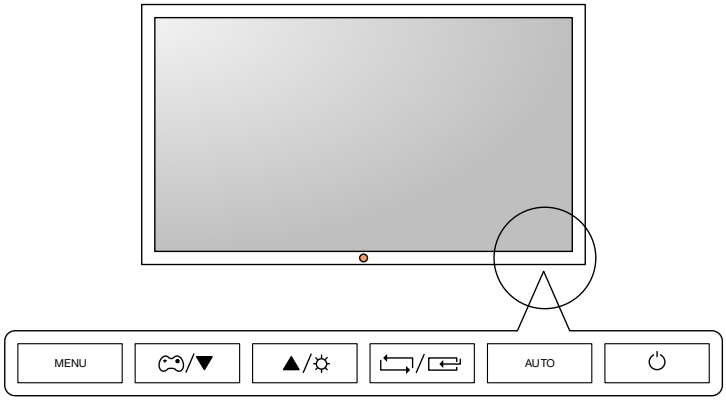


Figure 49 – Control panel sensor buttons – HD display

Table 3 Control panel sensor buttons – HD display

BUTTON	DESCRIPTION
MENU	Menu Button. Press this button to show the on-screen-display (OSD). This button is also used to exit the OSD or to return to a higher-level OSD menu. If held pressed for 10 seconds, this button will lock the OSD. When locked, it is not possible to change the OSD settings. The lock can be disabled by holding the menu button pressed for 10 seconds.
	Game mode button (not relevant for dental use).
	Up/down buttons. These buttons are used for navigating the menu or to adjust values in the OSD.
	Brightness button. This button is used to control the brightness of the display.
	Switch input button. Use this button to switch between analogue and digital input.
	Select button. Used for selecting functions in the OSD.
AUTO	Auto button. Use this button to automatically adjust the display settings when using an analog input.
	ON/OFF button. Switches the display on and off. Note: Switching off the unit will also switch off the display. When the unit is on again, the display will automatically be switched on as well.

	***Do not simultaneously touch the patient and the supply connector for the monitor at the back of the monitor.***

3.20 HAND INSTRUMENTS

The optimal place for hand-instruments is near the patient's temple – see Figure 50 – where both you and your chairside assistant can reach the instruments in healthy postures.

Figure 50 – Hand-instrument table near the patient's temple

Alternatively, the unit may be configured with a hand-instrument table fitted under the instrument bridge – see Figure 51.

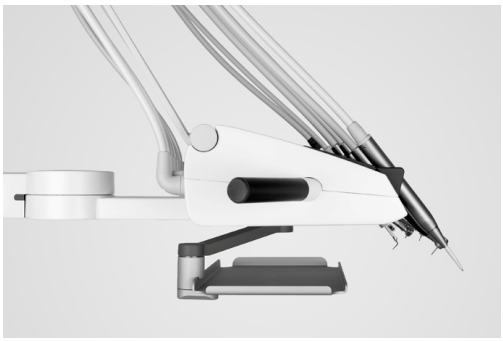


Figure 51 – Hand-instrument table attached to XO FLEX

Please note that the brake and the balance spring of the arm system should be adjusted by an XO authorized service provider in accordance with the load of the hand instrument table.

	***Maximum load on hand instrument table attached to XO FLEX unit is 1.5 kg!*** ***Exceeding the limit may compromise the balance of the instrument bridge and could cause the bridge suspension arm to fail altogether exposing the patient to a risk.***

3.21 SUCTION

3.21.1 POSITIONING THE XO AMBIDEX SUCTION HOSE HOLDER

Position the suction hose holder in the DUO position when working fourhanded and in the SOLO position when working twohanded.

Change between right handed and left-handed operator by swinging the suction hose holder from the one side of the patient chair to the other side.

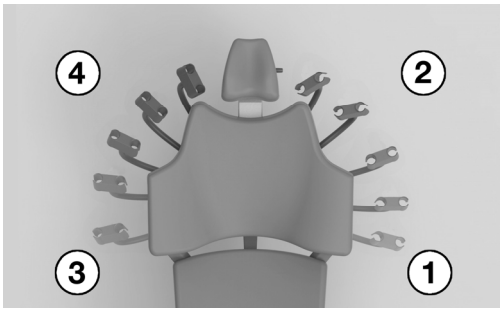


Figure 52 – Ambidex suction hose holder: (1) Right handed operator/DUO position, (2) Right handed operator/SOLO position, (3) Left handed operator/DUO position, (4) Left handed operator/SOLO position

Activate each suction hose individually by lifting it from the holder. When working solo, move the suction hose holder forward to facilitate easy access to the suction hoses.

Relieve the suction hose by pressing it into the slot in the suction hose holder.

Figure 53 – Relieving the suction hose

For left-handed operation the long version (260 cm) of the suction hoses must be used – see section 10.2.

When using the long suction hoses, it is necessary to attach the hoses to the suction arm using the supplied Velcro tape as in Figure 54.

Figure 54 – Attachment of suction hoses

3.22 CUSPIDOR AND CUP FILLER

Start the cuspidor flush manually with (1) – see Figure 55 – it will stop automatically after the preset rinsing time.
Abort the cuspidor flush by activating (1) while rinsing.

Figure 55 – Manual start of (1) cuspidor and (2) cup filler

Activate (2) – see Figure 55 – for less than one second and the glass fills with the pre-configured amount of water.
Activate (2) again for less than one second to stop automatic filling.
If (2) is activated for more than one second, water fills the cup while the button is activated.

The cup filler may alternatively be activated/deactivated using **X** while all unit instruments rest.

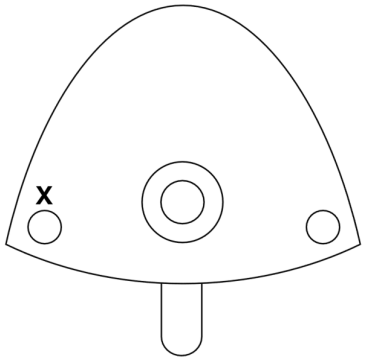


Figure 56 – Foot control of cup filler

3.22.1 AUTOMATIC FUNCTION

The cuspidor flush starts automatically after the cup filler has been activated and when the patient chair reaches the entry-position.

3.23 ASSISTANT CALL

Activating **O** while all unit instruments are at rest will activate a relay contact that may be connected to a bell or other external signaling devices.

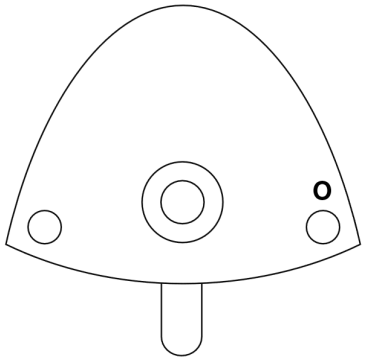


Figure 57 – Foot control of assistant call

3.24 SOUND GENERATOR AND SOUNDS

The instrument bridge is fitted with a sound generator that indicates events as described below:

Table 4 - Sounds

Sound	Meaning
Welcome	The unit is turned on and ready to use
Wrong	You try to do something that does not make sense
Setting saved	Setting saved successfully
Notification	A non-urgent event occurred
Connection lost	Computer connection is disconnected

3.25 SYSTEM MESSAGES

The unit generates messages that can be seen from the instrument bridge display.
See details in section 7.

4 CONFIGURATION

This section describes the many aspects of XO FLEX that can be customized to fit your personal needs.

4.1 CONFIGURATION OF PATIENT CHAIR POSITIONS

1. Adjust the chair to the required position using the foot control joystick as described in section 3.5.2
2. Press the configuration button – see Figure 58 – within 8 seconds
3. The display will show “CHAIR”
4. Activate the chair base joystick – see Figure 59 – according to the position being configured:
   ▷: Working position 1
   ◁: Working position 2
   ▽: Rinse position
   ▽ (twice within one second): Entry position
5. Subsequently, an “OK” sound is heard
6. The display will show the configured position shortly afterwards

Figure 58 – Configuration button (1) under the instrument bridge

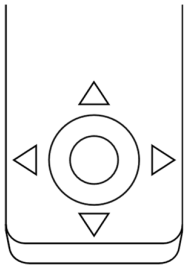


Figure 59 – Chair base joystick

4.2 CONFIGURATION OF GENERAL UNIT AND PATIENT CHAIR FUNCTIONS

1. Activate the configuration button (1) while all instruments are resting – see Figure 58.
2. Activate ▲ / ▼ or ⬇ – see Figure 60 – to browse the parameter to change (see Table 5)
3. Activate ► to select the parameter to change
4. Use ▲ / ▼ to change the value of the selected parameter or ⬇ to increase the value
5. Activate ◄ to save the new value
6. Press the configuration button again

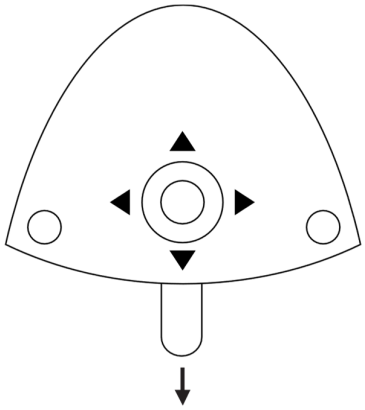


Figure 60 – Configuration using the foot control

Table 5 – Unit and patient chair parameters that can be configured

Parameter	Display text	Factory default configuration	Possible settings
Enabling XO Peristaltic Pump	PUMP	None	None, POS. 1 – 6
Cuspidor flush stops after	FLUSH/S	15 s	10 – 600
Cup filler stops after	CUP/S	10 s	5 – 15 s
Cuspidor flush starts automatically when chair reaches entry position	FLUSH/CH	Enabled	Disabled, enabled
Cuspidor flush starts automatically when cup filler stops	FLUSH/CF	Enabled	Disabled, enabled
Light on when patient chair reaches a working position or previous position. Light off when chair moves towards entry, 0-position or working positions 1 or 2.	LAMP/CH	Disabled	Disabled, enabled
Light on/off with foot control	LAMP/PD	Disabled	Disabled, enabled
Reset unit and patient chair functions to “factory standard”	RESET	-	Yes, No
Rinse position = entry position (0-position)	RINSE = 0	Disabled	Disabled, enabled

4.3 CONFIGURATION OF UNIT INSTRUMENTS

1. Lift the instrument to be programmed forward
2. Activate the configuration button (1) until the display shows the instrument setting – see Figure 58
3. Activate ▲ / ▼ or ⬇ – see Figure 60 – to browse the parameter to change (see Table 6)
4. Activate ► to select the parameter to change
5. Use ▲ / ▼ to change the value of the selected parameter or ⬇ to increase the value
6. Activate ◄ to save the new parameter
7. If an additional instrument parameter is to be configured, use ▲ / ▼ until the display shows the parameter in question
8. Place the instrument on the bridge again

Table 6 – Unit instrument parameters that can be configured

Parameter	Display text	Factory default configuration	Possible settings
Bien-Air MC3 / MX2 micro motor			
Maximum speed[3] – Level 3	LEVEL 3	40,000 RPM	100 – 40,000 ± 10% RPM
Maximum speed – Level 2	LEVEL 2	10,000 RPM	100 – 40,000 ± 10% RPM
Maximum speed – Level 1	LEVEL 1	4.000 RPM	100 – 40,000 ± 10% RPM
Amount of spray water – Level 3	W LEVEL 3	Without contra-angle (what you see on the display): 100 ml/min With contra-angle: **approximately 70 ml/min**	Without contra-angle: 10 – 100 ml/min
Amount of spray water – Level 2	W LEVEL 2	Without contra-angle (what you see on the display): 50 ml/min With contra-angle: **approximately 50 ml/min**	Without contra-angle: 10 – 100 ml/min
Amount of spray water – Level 1	W LEVEL 1	Without contra-angle (what you see on the display): 35 ml/min With contra-angle: **approximately 35 ml/min**	Without contra-angle: 10 – 100 ml/min
Amount of spray air	AIR	70%	0 – 100%
Automatic chip blow	CHIP	Enabled	Enabled, Disabled
Spray selection	4 STATES	Disabled	Enabled, Disabled

[3] Please note that it is the speed of the micromotor itself. When you fit a contra-angle the speed of the bur may be changed!

Parameter	Display text	Factory default configuration	Possible settings
Turbine (Air instrument)			
Drive air – Level 3	LEVEL 3	100%	0 – 100%
Drive air – Level 2	LEVEL 2	90%	0 – 100%
Drive air – Level 1	LEVEL 1	70%	0 – 100%
Amount of spray water – Level 3	W LEVEL 3	Without turbine hand-piece (what you see on the display): 100 ml/min With turbine hand-piece: **approximately 70 ml/min**	Without turbine hand-piece: 10 – 100 ± 20% ml/min
Amount of spray water – Level 2	W LEVEL 2	Without turbine hand-piece (what you see on the display): 50 ml/min With turbine hand-piece: **approximately 50 ml/min**	Without turbine hand-piece: 10 – 100 ± 20% ml/min
Amount of spray water – Level 1	W LEVEL 1	Without turbine hand-piece (what you see on the display): 35 ml/min With turbine hand-piece: **approximately 35 ml/min**	Without turbine hand-piece: 10 – 100 ± 20% ml/min
Amount of spray air	AIR	70%	0 – 100%
Automatic chip blow	CHIP	Enabled	Enabled, Disabled
XO ODONTOSON 360 or other ultrasonic scaler			
Power – Level 3	LEVEL 3	100%	0 – 100%
Power – Level 2	LEVEL 2	70%	0 – 100%
Power – Level 1	LEVEL 1	40%	0 – 100%
Amount of irrigation water – Level 3	W LEVEL 3	40 ml/min	10 – 90 ± 10% ml/min
Amount of irrigation water – Level 2	W LEVEL 2	30 ml/min	10 – 90 ± 10% ml/min
Amount of irrigation water – Level 1	W LEVEL 1	20 ml/min	10 – 90 ± 10% ml/min
XO ODONTOCURE curing light			
Curing time 3	TIME 3	20 s	1 – 300 s
Curing time 2	TIME 2	10 s	1 – 300 s
Curing time 1	TIME 1	5 s	1 – 300 s
Soft-start	SOFT T.	Disabled	Enabled/disabled
Soft-start	SOFT T.	5 s	1 – 300 s 20% power

	***If the unit is fitted with two or more identical unit instruments (e.g. two micromotors), the configured data (e.g. amount of spray water) will apply to all identical unit instruments.***

5 INFECTION CONTROL

The following procedures are recommended to minimize the risk of cross-contamination.

5.1 CLEANING, DISINFECTION AND STERILIZATION PROCEDURES

	***If the described cleaning, disinfection and sterilization methods are not followed carefully:*** ***The safety of operators and patients may be compromised, the service life of the unit expires and XO CARE A/S has no responsibility for the product's correct functioning and safety.***

	***Before using the XO FLEX unit for the first time it must be cleaned, disinfected and sterilized as described below.*** ***Before using a thermodisinfector and an autoclave read the instructions for use for the devices and be aware of the warnings provided by the manufacturers.*** ***For any instruments other than XO products, always follow the cleaning, disinfection and sterilization instructions included by the manufacturer!*** ***Pack items to be sterilized in sterilization packages that meet the following requirements:*** • ***The sterilization package must meet the applicable standards in respect of quality and use and must be suitable for the sterilization method*** • ***The sterilization package must be large enough for the sterilization goods*** • ***The filled sterilization package must not be under tension*** ***Store sterile goods dust-free and dry.***

The following definitions apply:

Table 7 – Cleaning, disinfection and sterilization definitions

Procedure	Purpose	Method(s)
Cleaning	Removal of visible blemishes spots, stains etc.	• Physical/chemical use of soap or detergents (will not significantly reduce the number of pathogens)
Disinfection	Significantly reduce the number of pathogenic microorganisms	• Application of chemical disinfectants to surfaces • Application of thermo-disinfection according to ISO 15883-1: 90°C/194°F, 5 minutes
Sterilization	Elimination/destruction of all living pathogenic microorganisms	• Steam sterilization (steam sterilizer according to EN 13060, Type B): ○ 134°C/273°F, 3 minutes or ○ 121°C/250°F, 15 minutes

	***Please note that some instruments and accessories are not designed for thermo-disinfectors or autoclaves!*** ***Please note that autoclaving and thermo-disinfection processes wear down the materials and may cause change of color and/or shorten the lifetime.***

Concerning the number of thermo-disinfection/autoclave cycles for detachable parts of the unit see section 10.2.

5.2 DETERGENTS AND DISINFECTANTS FOR CLEANING AND/OR DISINFECTION OF XO FLEX

Except for mild soapes or detergents (e.g. liquid dish soap) please only use detergents and disinfectants listed in section 10.3 for cleaning and disinfection of the unit.

Always follow the instructions provided in these instructions for use regarding concentration and contact time.

	***Please note: Do not use any other disinfectants than the one listed in section 10.3 for disinfection. Doing so may damage the Unit!*** ***Failure to comply with these precautions may affect XO's product warranty.***

	***Please see more details in the safety data sheets at xo-care.com and in the detailed instructions supplied with the product.***

5.3 GENERAL CLEANING OF UNIT AND PATIENT CHAIR SURFACES

Use a mild soap or detergent for cleaning the surfaces of the unit using a twisted lint-free cloth. Look out for liquid dripping from the cloth.

	***When cleaning the surfaces – do not use an excessive amount of liquid – and make sure that the liquid has evaporated before fitting instrument holder pad, cuspidor, cuspidor protection disc and cup holder.***

5.4 CLEANING OF COMFORT AND SKAI FABRIC

Wipe the fabric with a dry or moisturized lint-free piece of soft cloth after each patient.
Apply XO Fabric Makeup to a dry lint-free cloth to remove stains as soon as possible.
After the last patient wipe the fabric using a lint-free cloth with XO Fabric Makeup . Wipe excess of XO Fabric Makeup with a dry cloth.

	***Please note: XO Fabric Makeup shall be applied to the cloth – never directly to the fabric!***

5.5 GENERAL DISINFECTION OF UNIT SURFACES

Disinfect the surfaces of the unit using a lint-free cloth with XO Intensive Disinfection or XO Gentle Disinfection.
Look out for disinfection liquid dripping from the cloth.

When disinfecting surfaces – do not use an excessive amount of disinfectant – and make sure that the disinfectant has evaporated before fitting instrument holder pad, cuspidor, cuspidor protection disc and cup holder.

5.6 INFECTION CONTROL INSTRUMENT AND BRIDGE PROTECTION PAD

The instrument pad and bridge protection pad can be cleaned and disinfected in a thermo-disinfector.

Figure 61 – Instrument pad and bridge protection pad

5.7 CLEANING AND DISINFECTING THE HANDLES

The instrument bridge, light and suction hose holder handles can be removed to be thermodisinfected by pressing the knob (1) at the end of the handle – see Figure 62.

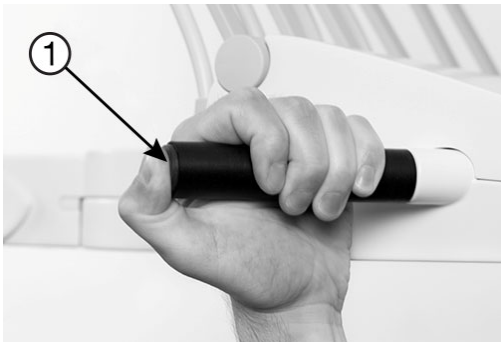
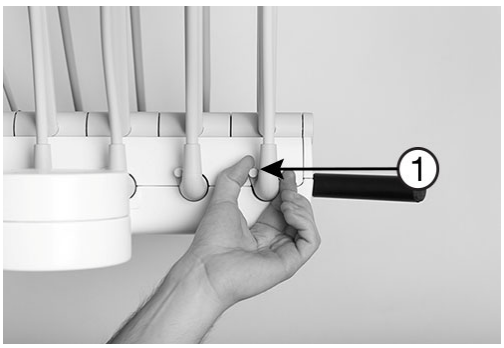


Figure 62 – Removing the handle

5.8 DISINFECTION OF INSTRUMENT HOSES AND SUSPENSIONS

Remove the instrument hose by turning the release handle (1) counter-clockwise and pulling out the plug as shown in Figure 63.



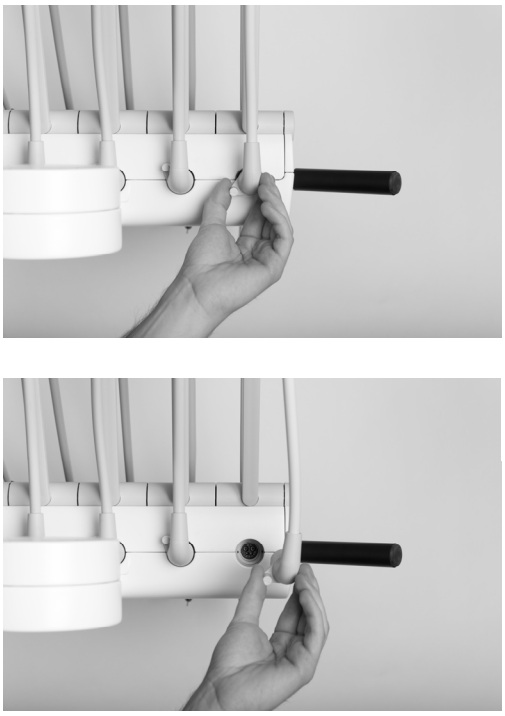


Figure 63 – Removing instrument hose, (1) release handle

Disinfect instrument hoses with XO Intensive Disinfection.
Wipe the cloth from the instrument coupling towards the plug to prevent disinfection liquid from leaking into the instrument coupling! See Figure 64.

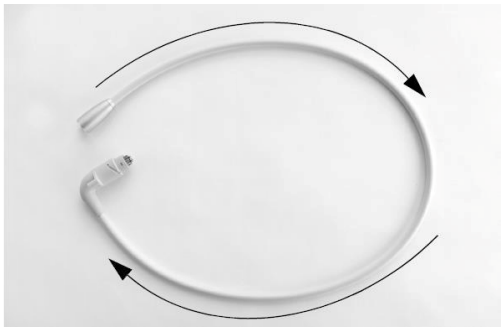


Figure 64 – Wiping direction, instrument hose-cleaning

Instrument suspensions (not the instrument hoses) can be washed in a thermo-disinfector.

	Do not wash instrument hoses in a thermo-disinfector!

When refitting the instrument hoses, the unit will inform you in case an instrument hose is fitted to a “wrong” position.

	Make sure that the instrument hose plugs and sockets in the instrument bridge are completely dry before the hoses are re-mounted on the instrument bridge!

5.9 INFECTION CONTROL LUZZANI SYRINGE

Follow the instructions for use supplied by Luzzani.

5.10 INFECTION CONTROL BIEN-AIR MICROMOTORS

Follow the instructions for use supplied by Bien-Air.

5.11 INFECTION CONTROL XO ODONTOSON 360

The instruments can be cleaned and sterilized using all clinically acceptable methods (max. 134°C).

The handpiece can be cleaned and disinfected with XO Intensive Disinfection or autoclaved (max 121°C).

5.12 INFECTION CONTROL XO ODONTOCURE CURING LIGHT

Use the supplied cross infection protection sleeves (AP-918) to decrease the risk of cross contamination and prevent the composite from bonding to the end of the rod.

Every day the light rod should be examined for stuck restorative material and mechanical damages.
Remove the light rod from the instrument by pulling it with your hand.
Autoclave the rod at 134°C.

Disinfect the handpiece and hose with XO Intensive Disinfection.

Figure 65 – Removing the light rod from XO ODONTOCURE handpiece

5.13 INFECTION CONTROL OTHER INSTRUMENTS

For turbines, other ultrasonic scalers, intraoral video cameras and other instruments please refer to the user manual supplied with the instrument.

5.14 INFECTION CONTROL XO PERISTALTIC PUMP

Clean and disinfect the surfaces of the pump unit using a lint-free piece of soft cloth with XO Intensive Disinfection.

Tubing clips and spear can be autoclaved at 134°C.

Tube guide can be thermo-disinfected at 90°C.

	***Risk of contamination!*** ***The pre-sterilized disposable irrigation kits are for single-use only and must be discarded after use.*** ***The tubing must not be re-sterilized.***

5.15 CLEANING AND DISINFECTION OF THE OPERATING LIGHT

Be sure to switch off the unit before cleaning the light.
Clean the light with a mild detergent and disinfect with XO Gentle Disinfection.

The protection screen may be detached for cleaning by removing the two screws – see Figure 66.

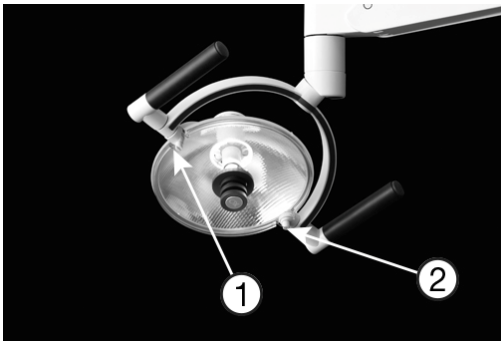


Figure 66 – Removing the protection screen, (1) screws and (2) protection screen

	***Do not spray water, disinfectants or cleaning agents directly onto the protection screen and the reflector.***

Take care not to scratch the protection screen surface with any hard or abrasive material.
Dust, finger marks, grease etc. can be removed from the protection screen and from the reflector with a lint-free piece of soft cloth (a small amount of mild detergent can be used on the cloth).

5.16 INFECTION CONTROL XO HD DISPLAY

Be sure to switch off the unit when cleaning the display.

	***Do not spray water, disinfectants or cleaning agents directly onto the display.***

5.16.1 FRONT PANEL

Take care not to scratch the front surface with any hard or abrasive material.

Dust, finger marks, grease etc. can be removed with a lint-free piece of soft cloth (a small amount of mild detergent can be used on the cloth).

Do not apply water or detergent directly to the front surface as this may cause staining or damage the electronic components.

Never use any solvent on the front panel as this may cause permanent damage.

Wipe off water drops immediately. Long contact with water may cause discoloration spots.

5.17 CLEANING AND DISINFECTION OF CUSPIDOR BOWL AND CUP HOLDER

Before removing the cuspidor bowl, turn the cuspidor spout away – see Figure 67.

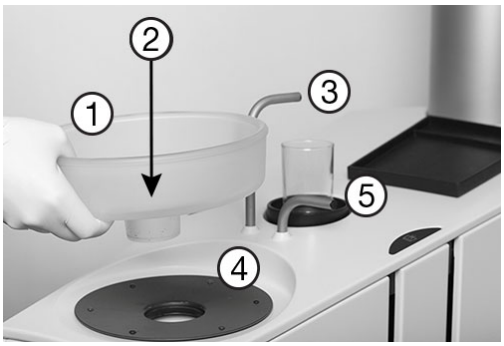


Figure 67 – Cuspidor and cup filler elements: (1) cuspidor bowl, (2) gold trap, (3) spout, (4) protection disk and (5) cup holder

The cuspidor bowl, the gold trap, the cuspidor protection disc, and the cup holder can be disinfected in a thermo-disinfector (90 °C, 1 minute).

5.18 CLEANING AND DISINFECTION OF SUCTION LINES

5.18.1 GENERAL

The suction valves and tubes inside the unit are constantly flushed with clean water while the suction is activated.

To prevent the suction system from clogging and breaking down, it is also necessary to clean and disinfect the suction system daily.

1. Lift both suction hoses from the suction holder
2. Remove the covers from both suction nozzles – see Figure 68
3. Activate the suction disinfection button (2) – see Figure 69 – to deactivate the suction
4. Place the two suction nozzles on the suction hose connectors (3) and activate the button (2) again – see Figure 69 – hereafter the flushing procedure starts

Figure 68 – Removal of suction nozzle covers

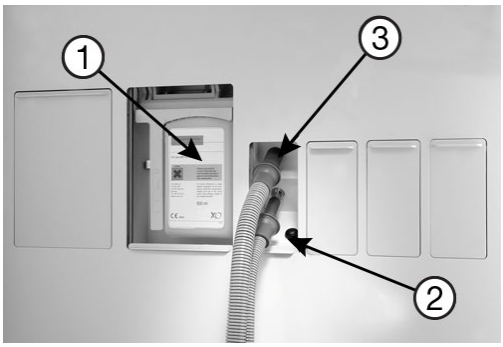


Figure 69 – XO Suction Disinfection (1) XO Suction Disinfection cartridge (2) button for activation of XO Suction Disinfection (3) suction hose connectors

The process takes approximately 6 minutes, depending on the suction power.

The display shows the progress of the disinfection process.

When “SUCTION OK” appears on the display, the process has been carried out successfully.

	Please note that manual cancellation of flushing is not possible.

In case of emergency you may switch off the unit, place the suction hoses in the holder – and switch on the unit again.

The suction nozzles can be autoclaved at 134 °C.
If much blood has been sucked through the system, we recommend that the system be flushed with at least 1 liter of cold water. After this, the system can be disinfected with XO Suction Disinfection.

Clean the suction system with Dürr MD 555 1 – 2 times per week, if the unit is equipped with an amalgam separator or if the above described procedure is not sufficient. Please see the instructions provided by Dürr Dental.

Please note that XO Water Disinfection and XO Suction Disinfection cannot be activated simultaneously!

5.18.2 SUCTION FILTERS

Every evening the suction filters must be cleaned:

1. Disconnect the suction hoses from the unit – see Figure 70
2. Eject the filters by pressing the button – see Figure 71
3. Remove the filter cartridge from the filter holder – see Figure 72
4. Empty the filters
5. Wash the filters in a thermo-disinfector
6. For lubrication of O-rings, please use grease (UG-928), or another grease approved for drinking water applications and suitable for both EPDM and NBR rubber.

Figure 70 – Removal of suction hoses and filters

Figure 71 – Press the button to eject the filter

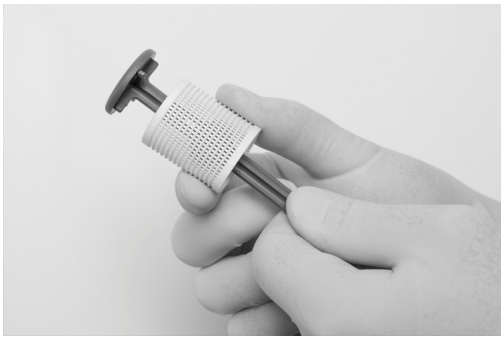


Figure 72 – Removing filter cartridge from filter holder

	***Suction filters and hoses may contain mercury and contaminated material. They must therefore be handled in accordance with national or local requirements!***

Replace the suction filter holder if air starts to leak from the suction filters.

5.18.3 REPLACEMENT OF XO SUCTION DISINFECTION CARTRIDGE

When the cartridge is almost empty a “warning-sound” is heard and the message “CHECK YELLOW BOTTLE” appears in the unit display.

The XO Suction Disinfection cartridge is replaced as follows:

1. Lower the right-hand service panel – see Figure 69
2. Pull the yellow handle forward to get access to the cartridge
3. Pull the cartridge downwards to get it free
4. Replace the cartridge, push the yellow handle in and close the service panel

	***XO Suction Disinfection is a corrosive liquid. Please see the safety data sheets at xo-care.com and the detailed instructions supplied with XO Suction Disinfection.***

	***To avoid accidentally exposing the patient to XO Suction Disinfection be careful not to interchange XO Water Disinfection cartridges (white) and XO Suction Disinfection cartridges (yellow)! XO Suction Disinfection is not poisonous but is not intended for human intake.***

	***Be careful not to spill the fluid as the painted surfaces may become stained. Any spills must be wiped away immediately. Then clean the surface with a damp cloth.***

	***Do not use any other disinfectants for cleaning the suction system as this may compromise the effectiveness of the system and damage vital parts in the suction system! Please note that failure to comply with this will affect XO’s warranty liability.***

5.19 DISINFECTION OF UNIT WATER LINES

XO Water Disinfection continuously dispenses a solution of a non-toxic disinfectant which contains hydrogen peroxide (potency resolution contains 0.0235% hydrogen peroxide) to the unit water. The disinfectant has proved to maintain the amount of microbials on a level suitable for drinking water. XO Water Disinfection prevents formation of limescale by binding calcium carbonate.

5.19.1 OVERNIGHT WATER TREATMENT

Normally, the overnight water treatment procedure should be used.
Unit with cuspidor:

Step 1 (evening):

1. Fit the water disinfection instrument holder on the cuspidor bowl
2. Place all water-bearing unit instruments in the disinfection instrument holder on the cuspidor bowl **(make sure that the heating on the syringe is switched off)**
3. Attach the cup filler outlet as shown in Figure 73
4. Activate the button marked (1) in Figure 73 and the water tank inside the unit is emptied
5. Wait for 3 minutes – the instrument bridge display will show the remaining time of the process
6. Switch the unit off and leave the unit instruments in the instrument holder on the cuspidor

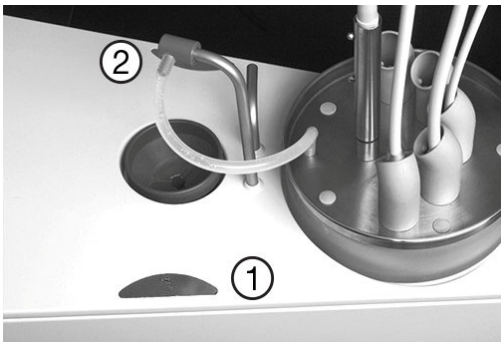


Figure 73 – Activation of XO Water Disinfection (1) cuspidor (2) cup filler

Step 2 (morning):

1. Check that the unit instruments are still in the instrument holder on the cuspidor and that the cup filler is attached
2. Switch on the unit
3. The water tank is filled and the unit instrument water lines are flushed with disinfection liquid for 6 minutes – the display will show the remaining time of the disinfection process
4. When “FLUSH OK” appears on the display, the process has been carried out successfully
5. Place the unit instruments on the instrument bridge

Unit without cuspidor:

Step 1 (evening):

1. Attach a clean/thermodisinfected disinfection instrument holder on the unit stand’s top plate and connect the tubing to the outlet in the service door marked “ Water disinfection process outlet”
2. Place all water-bearing unit instruments in the disinfection instrument holder **(make sure that the heating on the syringe is switched off)**
3. Activate the left button on the foot control (marked X) for a couple of seconds – to start emptying the pressurized tank inside the unit.
4. Wait for 3 minutes – the instrument bridge display will show the remaining time of the process
5. Switch the unit off and leave the unit instruments in the instrument holder on the topplate

Figure 74- Disinfection of unit water line

Step 2 (morning):

1. Check that the unit instruments are still in the instrument holder and that the tubing is attached to the outlet in the service door marked " Water disinfection process outlet"
2. Switch on the unit
3. The water tank is filled and the unit instrument water lines are flushed with disinfection liquid for 6 minutes – the display will show the remaining time of the disinfection process
4. When "FLUSH OK" appears on the display, the process has been carried out successfully
5. Place the unit instruments on the instrument bridge

ⓘ	***Please note that manual cancellation of this process is not possible.***

In case of emergency you may switch off the unit, place the unit instruments on the instrument bridge, remove the water disinfection instrument holder etc. – and switch on the unit again.

Please note that XO Water Disinfection and XO Suction Disinfection cannot be activated simultaneously!

5.19.2 INTENSIVE WATER TREATMENT

Intensive water treatment should be carried out when the bacterial load of the unit water lines is considered higher than usual, for instance, after vacation or other longer periods without usage.
Unit with cuspidor:

1. Place all water-bearing unit instruments in the instrument holder on the cuspidor **(make sure that the heating on the 6F syringe is switched off)**
2. Attach the cup filler outlet as shown in Figure 73

3. Activate the button (2) in Figure 73 and the instrument water lines are flushed
4. Watch the display for the remaining time of the disinfection process

When “FLUSH OK” appears in the display, the process has been carried out successfully.

Unit without cuspidor:

1. Place all water-bearing unit instruments in the instrument holder **(make sure that the heating on the 6F syringe is switched off)**
2. Connect the tubing to the outlet in the service door marked “ Water disinfection process outlet”
3. Activate the right button on the foot control (marked O) for a couple of seconds – to start the FLUSH process
4. Watch the display for the remaining time of the disinfection process

When “FLUSH OK” appears in the display, the process has been carried out successfully.

	***Please note that manual cancellation of this process is not possible.***

In case of emergency you may switch off the unit, place the unit instruments on the instrument bridge, remove the water disinfection instrument holder etc. – and switch on the unit again.

	***We recommend that this procedure be performed once after the weekend. When the unit has not been used for a week or more, we recommend that the intensive procedure be performed three consecutive times.***

5.19.3 REPLACEMENT OF XO WATER DISINFECTION CARTRIDGE

When the cartridge is almost empty a “warning-sound” is heard and the message “CHECK WHITE BOTTLE” appears in the unit display.

The XO Water Disinfection cartridge is exchanged as follows:

1. Lower the left-hand service panel – Figure 75
2. Pull the white handle forward to get access to the cartridge
3. Pull the cartridge downwards to get it free
4. Replace the cartridge, push the white handle in and close the service panel

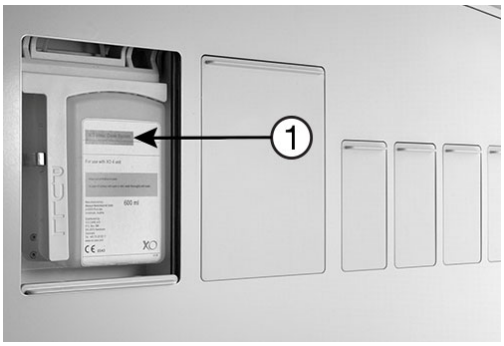
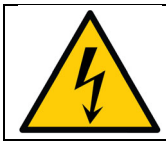


Figure 75 – Replacing the XO Water Disinfection cartridge

	***Please see the safety data sheets at xo-care.com and the detailed instructions supplied with XO Water Disinfection.***
	***Be careful not to spill the fluid as the painted surfaces may become stained. Any spills must be wiped away immediately. Then clean the surface with a damp cloth.***
	***To avoid accidentally exposing the patient to suction disinfection additive be careful not to interchange XO Water Disinfection cartridges (white) and XO Suction Disinfection cartridges (yellow)! The suction disinfection additive is not poisonous but it is not intended for human intake.***
	***Risk of contamination! Do not use any other disinfectants for cleaning the water system!***
	***Do not use any other disinfectants for cleaning the water system! Doing so may damage the product! Failure to comply with this will affect XO's warranty liability.***

6 MAINTENANCE AND REPAIRS

	***Danger of electric shock!*** ***Do not attempt to open the product unless you are an authorized service provider!***

6.1 FOOT CONTROL

The foot control is fitted with four rubber feet providing a stable attachment to the floor.
If the rubber feet and the floor become greasy with soap the friction may be reduced and the foot control may slide on the floor when activated.

	***If necessary, clean the rubber feet and floor with petroleum benzine to avoid the foot control from sliding when activated!***

Figure 76 – Cleaning of foot control “rubber feet”

6.2 XO ODONTOSON

6.2.1 HANDPIECE REPAIR

If necessary, the XO ODONTOSON handpiece must be repaired at the factory.

6.2.2 TIGHTENING / EXCHANGING THE FERRITE ROD

If an instrument has lost its efficiency, it may help to re-tighten the ferrite rod – see Figure 77 – and check that the inside of the hand-piece is free of water and foreign bodies.

	***Regularly - and especially in the case of instrument malfunction – check and tighten the ferrite rod to the titanium tip.***

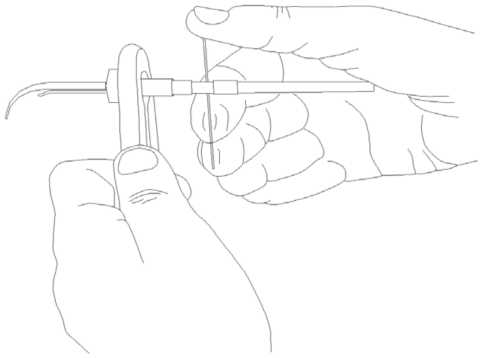


Figure 77 – Tightening / exchange of ferrite rod

If this does not correct the problem, you may try to exchange the ferrite rod. If there is still no improvement, then it is necessary to replace the titanium tip or the whole instrument with a new one.

XO ODONTOSON 360 is supplied with a service kit:

- Ferrite rod (209100)
- Steel pin (209300) and clamp (309300) for exchange of ferrite rod

6.3 XO ODONTOCURE

6.3.1 HANDPIECE REPAIR

If necessary, the XO ODONTOCURE handpiece must be repaired at the factory.

6.3.2 MANUAL MEASUREMENT OF CURING EFFECTIVENESS

The curing effectiveness of XO ODONTOCURE should be measured once a month to ensure that the effectiveness of the lamp is consistent. A substantial change in effectiveness is indicative of a fault, which may affect the curing result adversely. XO CARE delivers a testing device that can be used for the curing tests.

Upon receiving the instrument, measure the curing effectiveness of XO ODONTOCURE as follows:

1. Place the testing device on a flat surface and fill the cavity with the composite material to be used. See Figure 78.
2. Place the curing light tip on top of the testing device. The tip of the instrument must be placed in parallel with the surface of the testing device.
3. Apply the curing light for 10 seconds.
4. Press the test plug out of the cavity immediately. Carefully remove the non-polymerized soft material at the bottom of the test plug with a plastic spatula. See Figure 79.
5. The curing depth is measured using a caliper. Measure the depth at the shallowest point. See Figure 80.
6. The measured depth of the polymerized material shall be recorded and is now the target reference for future measurements.

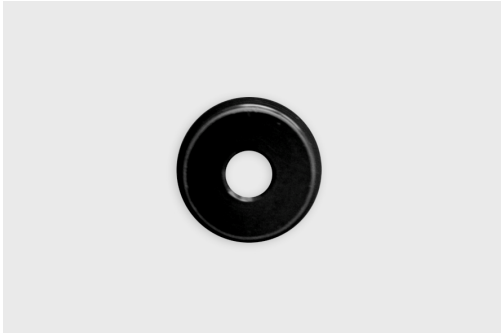


Figure 78 – Testing device

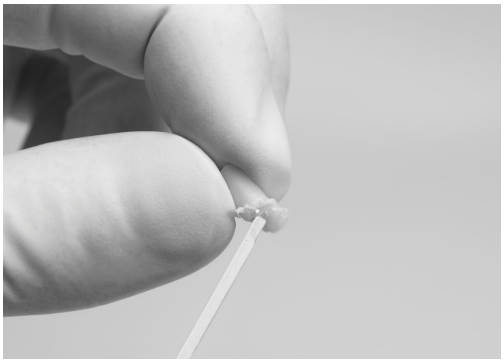


Figure 79 – Non-polymerized material is removed from composite test plug

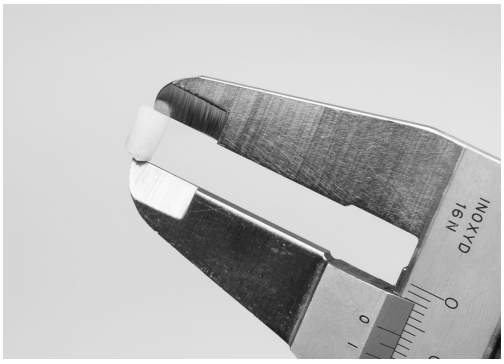


Figure 80 – Measuring the depth of the test plug

At an interval of approximately 1 month, perform the following steps:

7. Please refer to points 1-5, section 6.3.2.
8. Compare the result of this test with the reference made upon receiving the instrument. If the curing depth deviates more than 0.8mm from the reference, a fault may be present, and you might need to contact your XO service provider to remedy the fault.

	Note: This is a technical verification of performance; it does not reflect actual curing depth in a human tooth.

	In case of faulty performance, the fiber rod may be replaced and retested. In case the problem persists, technical assistance from an authorized service provider is required.

6.4 XO PERISTALTIC PUMP

Please refer to Table 9 on page 72 to see an overview of the service messages that may appear on the display while using XO Peristaltic Pump.

6.5 ADJUSTMENT OF THE HAND INSTRUMENT TABLE

You can adjust the angle of the hand instrument table using a 4 mm Allen key.

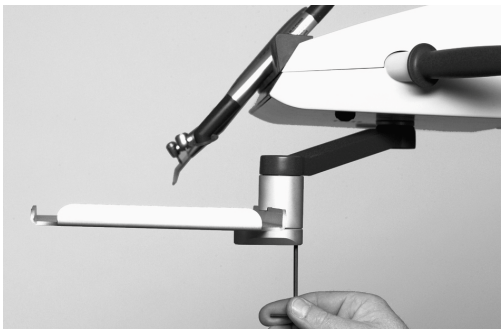


Figure 81 – Adjustment of the hand instrument table

6.6 CONTROL OF THE WATER DISINFECTION SYSTEM

If the unit is fitted with a water disinfection system, we recommend that you control the function every month:
Disinfect the unit water lines as described in 5.19.2

1. Place a clean cup in the cup holder (units with cuspidor and cup filler) and activate the cup filler
2. Using the syringe fill about 20 ml of water in a clean cup (units without cuspidor and cup filler)
3. Dip a peroxide test strip (UH-238) in the water for one second
4. Shake off excess liquid
5. Wait 45 seconds
6. Compare with the color scale below:

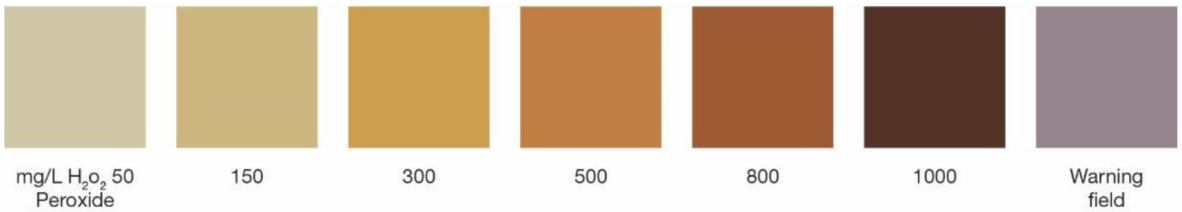


Figure 82 – Water quality color scale

The test strip shall indicate a H_2O value between 150 and 300 mg/l.

If the value is outside of the indicated range or if the test stripe turns blue you must call an XO authorized service provider to check the water disinfection system.

6.7 MAINTENANCE AND REPLACEMENT OF MAIN FILTER FOR WATER SUPPLY

Please see “Instructions for preventive service and safety inspection” at xo-care.com.

6.8 CUSPIDOR VALVE – CLEANING THE COURSE FILTER

If the unit is equipped with a cuspidor valve, the coarse filter should be cleaned upon notification (approximately every month):

1. Lower the service panel – see Figure 83
2. Empty the filter house by activating the manual valve button (1) in Figure 83 for 5 seconds
3. Remove the filter (2)
4. Clean the filter
5. Replace the filter

Figure 83 – Manual activation of cuspidor valve (1) and cuspidor valve filter (2)

	***Amalgam waste is considered hazardous to the environment and should therefore be disposed of safely and in accordance with regulatory requirements. Remember to use safety gloves.***

6.9 FLUSHING OF CUSPIDOR DRAIN

If the unit is equipped with a cuspidor valve, you may flush the cuspidor drain if necessary as follows:

1. Lower the service panel – see Figure 83
2. Activate the manual valve (1) button for min. 3s. while you pour clean water in the cuspidor bowl.
3. After flushing procedure, remove and clean the yellow filter.

6.10 SUCTION HOSES

If the suction hoses dry up, you may hear a noise when activating the suction.

	***To avoid unintended noise from the suction hoses, use each suction hose to empty a glass of water at the beginning of the day and if necessary during the workday.***

Suction hoses and filters should be exchanged every 12 months. Replacement suction filters are included in the infection control kits – see section 10.3.

	***Amalgam waste is considered hazardous to the environment and should therefore be disposed of safely and in accordance with regulatory requirements. Remember to use safety gloves.***

6.11 DÜRR CAS 1 COMBI-SEPARATOR – AIR AND AMALGAM SEPARATOR

If your XO FLEX unit is equipped with an amalgam separator you need to replace the amalgam collector vessel every 6–9 months.
Contact your XO authorized service provider.

	***A warning signal will be heard from the amalgam separator when the amalgam collector vessel is 95% full or more.***

6.12 COIN CELL BATTERY

The instrument bridge contains a coin cell battery, type 2032, which shall be replaced every 5th year. Contact your service provider to perform the replacement.

7 UNIT MESSAGES AND REMEDIAL ACTIONS

7.1 ERROR MESSAGES

Certain functional errors can be detected by XO FLEX and written onto the instrument bridge display.

Table 8 – Error messages

Error message	Interpretation	Remedial action
FOOT CONTROL FAIL!! CALL SERVICE	Displayed after start-up of unit if no communication with foot control is detected.	Call your XO authorized service provider.
NETWORK FAIL!! CALL SERVICE	Displayed after start-up of unit if no communication with Stand Controller and foot control is detected.	Call your XO authorized service provider.
NO WATER FLOW	Displayed when unit detects that it takes more than 90 seconds to fill the mixing cup.	Check the water supply to the unit or call your XO authorized service provider.
POWER DRIVER FAIL!! CALL SERVICE	Displayed after start-up of unit if no communication with Power Driver is detected.	Call your XO authorized service provider.
STAND CONTROL FAIL!! CALL SERVICE	Displayed after start-up of unit if no communication with Stand Controller is detected.	Call your XO authorized service provider.
SUCTION CLEAN FAIL!! CALL SERVICE	Displayed when unit detects that it takes more than 90 seconds to fill the mixing cup or mixing cup cannot be emptied within 4 minutes.	Call your XO authorized service provider.
UNIT NOT READY	Displayed if unit detects that the foot control is activated – or an instrument is lifted forward during start-up.	Switch off the unit and try again. If this does not help, call your XO authorized service provider.
WAIT	Patient chair lifting motor is overheated. Do not adjust the height or inclination of the chair for 10 minutes and try again.	If this does not help, contact your XO authorized service provider.
WATER LEAK CALL SERVICE	Water leakage. Switch off water supply and try to localize leakage.	If necessary, contact your XO authorized service provider.
WRONG INSTRUMENT	One or more unit instruments are not fitted correctly. Check that numbers on instrument hoses fit correct positions at instrument bridge – see Figure 18, page 22. Another possible error is that a unit instrument hose is defective.	If necessary, contact your XO authorized service provider.

7.2 SERVICE MESSAGES AND REMEDIAL ACTIONS

Below you see an overview of the service messages that may appear on the instrument bridge display.

Table 9 – Service messages

Service message	Reason for message	Remedial action
CHECK YELLOW BOTTLE	The unit will soon run out of XO Suction Disinfection.	Make sure you have XO Suction Disinfection cartridges (AN-354) in stock.
CHECK WHITE BOTTLE	The unit will soon run out of XO Water Disinfection	Make sure you have XO Water Disinfection cartridges (AO-980) in stock.
FLUSH MM MIN	Water lines are being flushed. MM = remaining minutes to completion of process.	Please wait – do not shut off power or activate any buttons.
FLUSH OK	Water line flushing completed. Unit operational again.	
NEXT SERVICE YYYY-MM-DD	Less than 30 days to next preventive service and safety inspection.	Call your XO authorized service provider and require a preventive service and safety inspection.
SERVICE OVERDUE YYYY-MM-DD	Date for preventive service and safety inspection is overdue.	Call your XO authorized service provider and require a preventive service and safety inspection.
SUCTION OK	Suction disinfection process completed. Unit operational again.	
SUCTION X %	The suction disinfection process is ongoing. X = remaining time in %.	Please wait – do not shut off power or activate any buttons.
WATER CLEAN ACTIVE WAIT MM	Water tank discharging water. MM = remaining minutes to completion of process.	Please wait – do not shut off power or activate any buttons.
PUMP NOT READY	Pump detached or no connection to unit.	Attach pump correctly.
NO PUMP	Pump not connected to the selected suspension/instrument	Attach pump correctly. Check configuration of the pump.
TOO HOT	If XO ODONTOCURE is activated continuously the message “TOO HOT” is displayed and the instrument is turned off.	Depending on the temperature, the light is ready for re-activation after a few seconds.

8 PREVENTIVE SERVICE, SAFETY INSPECTIONS AND REPAIRS

8.1 GENERAL

	***XO FLEX must be inspected and serviced every 12 months by an XO authorized service provider to ensure safe operation and high uptime.*** ***Authorized service providers are listed under "XO Partners" at xo-care.com.***

	***While maintaining or servicing the unit there must be no patient in the patient chair!***

8.2 PREVENTIVE SERVICE AND SAFETY INSPECTION

	***Instructions for preventive service and safety inspection can be downloaded from xo-care.com.***

8.2.1 PREVENTIVE SERVICE AND SAFETY INSPECTION A – 12, 36 ETC. MONTHS AFTER INSTALLATION

Service A includes a general checkup and exchange of parts contained in XO FLEX Service Kit A.
Main activities see Table 10.
Expected labor time for service A is 1.5 hours.

8.2.2 PREVENTIVE SERVICE AND SAFETY INSPECTION B – 24, 48 ETC. MONTHS AFTER INSTALLATION

Service B includes a general checkup and exchange of parts contained in XO FLEX Service Kit B.
Main activities – see Table 10.
Expected labor time for service B is 3.5 hours.

Table 10 – Preventive service and safety inspection

A service	B service	Activity
X	X	Clean main water filter and replace filter cartridge
	X	Open and clean water valves
X	X	Clean main water valve and replace gasket
X	X	Replace water softener filter
X	X	Clean and replace parts of water backflow prevention
X	X	Clean suction disinfection system
X	X	Clean suction- and drain system

8.2.3 SERVICE NOTIFICATION

Approximately 30 days before the next preventive service and safety inspection a message appears on the instrument bridge display after power-on.
If the preventive service and safety inspection becomes overdue a warning message will appear on the display.

When the preventive service and safety inspection has been performed the XO authorized service provider will set the date for the next preventive service and safety inspection.

8.3 ADJUSTMENT OF THE ARM SYSTEMS

All arm joints are fitted with roller bearings, adjustable tension springs and friction brakes for smooth and effortless operation.

	***The instrument bridge, the operating light and the HD display should be in balance and easy to maneuver with "two fingers". If this is not the case – please contact your XO authorized service provider for adjustment of arm brakes and balance springs.***

	***Please note that the brake and the balance spring of the instrument bridge arm system should be adjusted by an XO authorized service provider in accordance with the load on the norm tray fitted under the instrument bridge.***

	***Adjustments of arm systems must be done by qualified personnel only!*** ***Maladjustment may result in a mechanical hazard!***

8.4 ADJUSTMENT OF BALANCED INSTRUMENT SUSPENSION ARMS

Each instrument suspension is fitted with a spring that can be adjusted so that the instrument is perfectly in balance.

	***All instruments should be in perfect balance when lifted forward – i.e. you should feel no dragging from the instrument hose when holding an instrument!*** ***If this is not the case – please contact your XO authorized service provider for adjustment.***

8.5 REPLACEMENT OF OPERATING LIGHT SOURCE

The expected lifetime of the LED light source is 10 years.
For replacement of the LED light source please contact your XO authorized service provider.

8.6 XO HD DISPLAY

XO HD Display does not contain any field-serviceable parts. A faulty display must be returned to XO CARE for repair. Contact your XO authorized service provider.

9 INFECTION CONTROL AND MAINTENANCE CHECKLIST

Below is a summary of infection control (section 5) and maintenance procedures (section 6):

Table 11 – Infection control and maintenance routines

What	How	Parts/consumables needed
Every morning		
Finish overnight water line disinfection procedure (step 2)	Check that unit instruments are still in the instrument holder on the cuspidor. See section 5.19.1	XO Water Disinfection cartridges
Remove cuspidor bowl and protection disk	See section 5.17	
Fit clean suction filters	See section 5.18.2	
Check that the rubber feet of the foot control are clean to avoid sliding	See section 6.1	Petroleum benzine
Switch the unit on		
Before each patient		
Fit sterile / disinfected / new:		Extra: • unit instrument pad • bridge protection pad • handles • covers for suction nozzles • cuspidor bowl, protection disk and gold trap • cup holder
• Unit instrument pad • Bridge protection pad	See section 5.6	
• Handles on instrument bridge, light and HD Display	See section 5.7	
• Covers for suction nozzles	See section 5.18.1	
• Cuspidor bowl, protection disk, gold trap with cover and cup holder	See section 5.17	
• Unit instrument hoses and balance suspensions if necessary	See section 5.8	
Fit sterile / disinfected unit instruments	Syringe – see section 5.9 Micromotors – see section 5.10 XO ODONTOSON 360 – see section 5.11 XO Peristaltic Pump – see section 5.14 XO ODONTOCURE – see section 5.12	Extra: • syringe tips • syringe covers • micromotor covers, please see bienair.com • XO ODONTOSON 360 instruments, please see xo-care.com for a complete list • XO ODONTOCURE light rods etc.
Place a new cup		
After each patient		
Remove contaminated: • Unit instruments • Unit instrument pad • Bridge protection pad • Handles on instrument bridge, light and unit HD Display		

<table>
<tr><th>What</th><th>How</th><th>Parts/consumables needed</th></tr>
<tr><td>• Cuspidor bowl, gold trap and protection disk
• Cup and cup holder</td><td></td><td></td></tr>
<tr><td>Clean and disinfect all surfaces.</td><td>See section 5.5</td><td></td></tr>
<tr><td colspan="3">Every evening</td></tr>
<tr><td>Clean and disinfect the suction lines</td><td>See section 5.18</td><td>XO Suction Disinfection cartridges</td></tr>
<tr><td>Clean suction filters</td><td>See section 5.18.2</td><td>XO Silicone Grease, O-rings</td></tr>
<tr><td>Start the overnight water line disinfection procedure (step 1).</td><td>See section 5.19.1
Switch the unit off, leaving the unit instruments in the instrument holder on the cuspidor.</td><td>XO Water Disinfection cartridges</td></tr>
<tr><td colspan="3">When the unit has not been used for several days – after a long weekend, holidays etc.</td></tr>
<tr><td>Start the intensive water line disinfection procedure.</td><td>See section 5.19.2</td><td>XO Water Disinfection cartridges</td></tr>
<tr><td colspan="3">Every month</td></tr>
<tr><td>Control the water disinfection system</td><td>See section 6.6</td><td>Test strip</td></tr>
<tr><td>Empty coarse filter in cuspidor valve, if installed.</td><td>See section 6.8</td><td></td></tr>
<tr><td>Measure curing depth of XO ODONTOCURE</td><td>See section 6.3.2</td><td>XO ODONTOCURE testing device and/or LED UV measuring device</td></tr>
<tr><td colspan="3">Every year</td></tr>
<tr><td>12, 36 etc. months after installation of the unit: Preventive service and safety inspection A.</td><td>See section 8.2.1</td><td>XO FLEX Service Kit A</td></tr>
<tr><td>24, 48 etc. months after installation of the unit: Preventive service and safety inspection B.</td><td>See section 8.2.2</td><td>XO FLEX Service Kit B</td></tr>
<tr><td>Replace:
• suction hoses
• gold trap in cuspidor
• syringe tip</td><td></td><td>Suction hoses
XO FLEX Infection Control Kit</td></tr>
<tr><td colspan="3">On demand</td></tr>
<tr><td>Replace XO water softener filter cartridge (UH-200).</td><td colspan="2"><table><tr><th>Water hardness °dH</th><th>Filter replacement interval</th></tr><tr><td>1 - 12</td><td>Every 12 months (part of preventive service)</td></tr><tr><td>13 - 22</td><td>Every six months</td></tr><tr><td>23 -</td><td>Every three months</td></tr></table></td></tr>
</table>

10 ACCESSORIES, DETACHABLE PARTS AND CONSUMABLES

10.1 ACCESSORIES

Table 12 – XO FLEX accessories

Description	Ref.
Child cushion	XO-813
Kit for external irrigation	XO-069
XO Peristaltic Pump	XO-053

10.2 DETACHABLE PARTS

Table 13 – Detachable parts

Product	No. of thermo-disinfection cycles: 90°C, 5 minutes	No. of autoclaving cycles: 134°C, 3 minutes	Ref.
Instrument pad	250	None	AP-725
Bridge protection pad	250	None	AP-728
Handles	250	None	AP-732
2 suction hoses, L= 175 cm (for XO Ambidex holder, right-handed operator)	None	None	AR-124
2 suction hoses, L= 260 cm (for XO Ambidex holder, right- and left-handed operators)	None	None	AR-127
Cover for high volume suction nozzle	250	None	AP-714
Cover for saliva suction nozzle	250	None	AP-715
Suction hose filters	250	None	MR-075
Cuspidor bowl	1000	None	MG-395
Protection disk for cuspidor bowl	250	None	AP-764
Gold trap	250	None	AP-763
Cover for gold trap	250	None	MG-894
Cup holder	250	None	AP-762
3F Syringe hose	None	None	AN-382
6F Syringe hose	None	None	AN-383
Hose for turbine	None	None	AN-385
Hose for micro motor, MC3	None	None	AN-384
Hose for micro motor, MX2	None	None	AO-446
Tip for syringe	250	250	SD-214
Tip retainer	250	250	SD-516
Cover for syringe	250	250	SD-510
XO ODONTOSON handpiece	None	None	AP-842
Connector piece when XO ODONTOSON used with XO Peristaltic pump	None	None	XO-069
Fiber glass rod for XO ODONTOCURE	None	250	AP-915
Light shield for XO ODONTOCURE	None	None	AP-916
Instrument suspension arm	250	None	AN-013
Water disinfection instrument holder	250	None	AN-180
Instrument support, Syringe	250	None	AE-743

10.3 CONSUMABLES

Table 14 – Consumables

Product	Purpose	Note	Supplied units	Ref.
XO Intensive Disinfection	For disinfection of alcohol-resistant surfaces.	Apply to a cloth and fully wet the surfaces and allow to dry. Exposure time = 1 minute. Do not use on: • Painted surfaces of the patient chair • XO Comfort fabric • The operating light protection screen	1 pcs	AP-831
XO Gentle Disinfection	For rapid disinfection and cleaning of sensitive surfaces such as plastics, XO Comfort fabric or other artificial leather surfaces, suction hose holders, cuspidors, etc.	Apply to a cloth and fully wet the surfaces and allow to dry. Exposure time = 1 minute.	1 pcs	AP-832
XO Fabric Makeup	Cleaning and care of XO Comfort and skai fabric.			AP-833
XO Water Disinfection	Disinfection of unit water and water lines.	Disinfection additive: Significantly reduces, but does not eliminate pathogens in unit water	6 * 0.6-liter cartridges	AO-980
XO Suction Disinfection	Disinfection of suction hoses and suction system.	Disinfection additive: Significantly reduces, but does not eliminate pathogens in suctions and suction lines	6 * 0.6-liter cartridges	AN-354
Suction filter	Collects particles larger than 0.75 * 0.6 mm.	-	1 pcs	MR-075
Suction filter holder	Holder for the suction filter.	-	1 pcs	AP-795
XO ODONTOCURE cross infection protection sleeves	Reduce risk of cross contamination.	-	100 pcs	AP-918
XO ODONTOCURE testing device	Measure curing effectiveness.	-	3 pcs	AP-920
Disposable irrigation kit - XO Peristaltic pump	Irrigation tubes for peristaltic pump.	-	50 pcs	XO-055
XO Silicone Grease	Greasing of O-rings	-	1 pcs	UG-928
Peroxide test strips	Control of water disinfection.	-	100 pcs	UH-238
XO FLEX Service Kit A	Parts used for preventive service and safety inspection A.			AP-655

Product	Purpose	Note	Supplied units	Ref.
XO FLEX Service Kit B	Parts used for preventive service and safety inspection B.			AP-656
XO FLEX Service Kit C	Parts used for preventive service year 6, 12 etc			AR-119
Infection Control Kit – XO FLEX	Parts that you should replace regularly – depending on how much the unit is used.	Contains: • 2 complete filters with holder and housing • 2 suction nozzles, big & small • 1 gold trap • 1 tip for syringe		XO-469
Large infection control kit – XO FLEX	Parts that you should replace regularly – depending on how much the unit is used.	Contains: • 2 complete filters with holder and housing • 2 suction nozzles, big & small • 22 suction filters • 1 gold trap • 1 tip for syringe • 6 handles • 1 instrument pad		XO-468
Two suction hoses for right-handed operator	Parts that you should replace regularly – depending on how much the unit is used.	Length of suction hoses 175 cm.		AR-124
Two suction hoses for right- and left-handed operator	Parts that you should replace regularly – depending on how much the unit is used.	Length of suction hoses 260 cm. Incl. Velcro tape		AR-127

10.4 SUGGESTED RETAIL PRICES

See suggested retail prices for parts/consumables at xo-care.com.

11 LEGAL

11.1 AUTHORIZED SERVICE PROVIDERS

Authorized service providers XO Partners and XO CARE A/S.

	***Please visit xo-care.com for a list of XO Partners.***

	***WARNING: No unauthorized installation, service or modification of this equipment is allowed!*** ***Unauthorized modification could result to malfunction or physical injury!***

11.2 XO CARE GENERAL CONDITIONS, WARRANTY AND SERVICE LIFE

	***All products manufactured by XO CARE A/S and described in these instruction for use are subject to "XO CARE General Conditions" valid at the date of delivery.*** ***Visit xo-care.com.***

	***Concerning XO CARE A/S' and the XO Partner's liability for defects and complaints please see "XO CARE General Conditions".*** ***XO CARE A/S' guarantees delivery of spare parts and consumables as well as technical support to the XO FLEX unit during the expected service life. See "XO CARE General Conditions".***

11.3 3RD PARTY INSTRUMENTS AND ACCESSORIES

Instruments or accessories manufactured by 3rd party manufacturers supplied with this product are supplied under the responsibility of mentioned 3rd party manufacturers.

11.4 PRODUCT UPDATES

XO CARE has no obligation to update this product if newer versions or updates are introduced after the time of delivery.

11.5 FIRMWARE VERSION

The products described in this manual are according to firmware version 4.02.

It is possible to update to newer firmware versions if available. Please contact your XO authorized service provider.

11.6 APPLICABLE STANDARDS

XO FLEX fulfills requirements of:

- EN 60601-1 – Part 1
- EN 60601-1-2 – Part 1-2
- EN 1640

11.7 ELECTROMAGNETIC EMISSION

XO FLEX is intended for operation in the electromagnetic environment specified below. Please make sure that the unit is used in such an environment.

Table 15 – EMC information

Emission measurement	Conformity	Electromagnetic environment - guidelines
RF emissions according to CISPR 11 36.201.1 Conducted emission, IEC 61000-4-6	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, and it is improbable that neighboring electronic devices will be disturbed.
RF emissions according to CISPR 11 36.201.1 Radiated emission, IEC 61000-4-3	Class B	The unit is intended for use in all facilities, including domestic 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	

WARNING: Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

WARNING: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the unit, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

11.8 INTERFERENCE IMMUNITY

Table 16 – Interference immunity

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%.

Interference immunity tests	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidelines
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 residential or hospital environment.
Surge voltages according to IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	± 1 kV differential mode ± 2 kV common mode	The quality of the line power supply should be that of a typical residential or hospital environment.
Voltage dips, short interruptions and variations of the power supply according to IEC 61000-4-11	< 5% U_T[4] (> 95% interruption) for 1/2 period 40% U_T (60% interruption) for 5 periods 70% U_T (30% interruption) for 25 periods < 5% UT (> 95% interruption) for 5 s (250 periods)	< 5% U_T (> 95% interruption) for 1/2 period 40% U_T (60% interruption) for 5 periods 70% U_T (30% interruption) for 25 periods < 5% UT (> 95% interruption) for 5 s (250 periods)	The quality of the supply voltage should correspond to that of a typical domestic or hospital environment. If the user of the unit needs continued operation even when the power supply is interrupted, it is recommended to supply the unit from an uninterruptible power supply or a battery.
Magnetic field of power frequencies (50 Hz) according to IEC 61000-4-8	30 A/m	30 A/m	Mains frequency magnetic fields should be at levels characteristic of a typical location in a typical residential or hospital environment.
Conducted RF disturbance IEC 61000-4-6	3 V_{eff} 150 kHz to 80 MHz	3 V_{eff}	Portable and mobile radio devices, including the wires, should not be used closer to the unit than the recommended safe distance, calculated using the equation for the transmission frequency. Recommended safe distance: d = 1.17 √P for 80 MHz to 800 MHz d = 2.33 √P for 800 MHz to 2.7 GHz with P as the maximum rated power of the transmitter in watts according to the transmitter manufacturer, and d as the recommended safe distance in meters. The field strength of stationary radio transmitters should be less than the conformance level at all frequencies in an on-site check. Disturbances are possible close to devices that have the following symbol
Radiated RF interference IEC 61000-4-3	10 V/m 80 MHz - 2700 MHz		

[4] Note: UT is the AC supply voltage prior to application of the test level.

11.9 CLASSIFICATION

Classification according to M.D.D. 93/42/EEC: Class IIa
Classification according to EN 60601-1: Class I, TYPE B applied parts.
IP classification of the Foot Control: IP21 (Protected against solid foreign objects of 12,5 mm and greater, and Protection against vertically falling water drops).

11.10 APPLIED PARTS

In relation to EN 60601-1 the following parts of XO FLEX are applied parts – that the patient can get in contact with:

- Instruments
- Suction system
- Patient chair

11.11 MARKING PLATE

Please see the XO FLEX marking plate at the base of the unit stand at 6 o'clock.

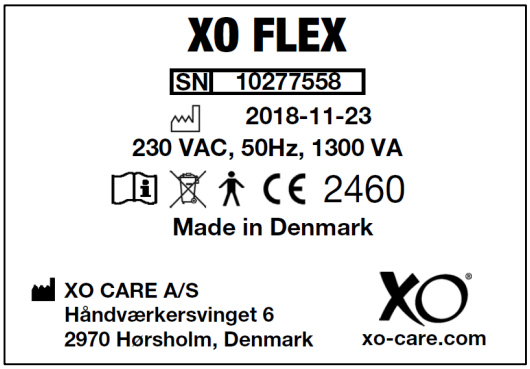


Figure 84 – Marking plate XO FLEX

11.12 OTHER LABELS

Please see other silver labels with serial numbers, color codes etc. for specific parts of the unit as follows:

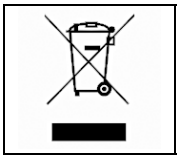
- **Unit**: Under rear panel
- **Patient chair:** Under the seat cushion
- **Patient chair cushions:** On the rear side of the cushions
- **XO SEAT and XO STOOL:** Under the seat

11.13 PRODUCT DISPOSAL INFORMATION

Within the European Union this product must not be disposed of with household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the

environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, or your supplier's office.

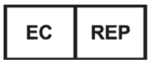
Disposal of electrical products in countries outside the European Union should be done in line with local regulations.

	***This product is to be disposed of as required by local ordinances or regulations***!

12 SYMBOLS

List of symbols used on the product and in this manual.

Table 17 – List of symbols

	***Warning*** ***Used to emphasize important safety related information about the use of the device***
	***Warning: dangerous voltage***
	***Follow instructions for use***
	***Mandatory action***
	***Information*** ***Other important messages not related to safety***
	***Do not reuse. For single use only.***
	***Serial Number*** ***This information is found on the marking plate on the unit.***
	***Sterilized by ethylene oxide***
	***EU representative***
	***Manufacturer*** ***This information is found on the marking plate on the unit.***
	***Date of manufacture*** ***This information is found on the marking plate on the unit.***

	***Dispose in accordance with instructions provided in this manual***
	***Type B applied part (degree of protection against electrical shock)***
	***Type BF applied part (degree of protection against electrical shock)*** ***Intraoral camera***
→	***Foot control pedal right***
←	***Foot control pedal left***
↓	***Foot control pedal down***
X	***X button on foot control***
O	***O button on foot control***
▲	***Foot control joystick north***
◀	***Foot control joystick west***
▼	***Foot control joystick south***
▶	***Foot control east***
△	***Chair base joystick north***

	***Chair base joystick west***
	***Chair base joystick south***
	***Chair base joystick east***

13 DIMENSIONS AND TECHNICAL DATA

13.1 DIMENSIONS AND RANGE OF MOTION

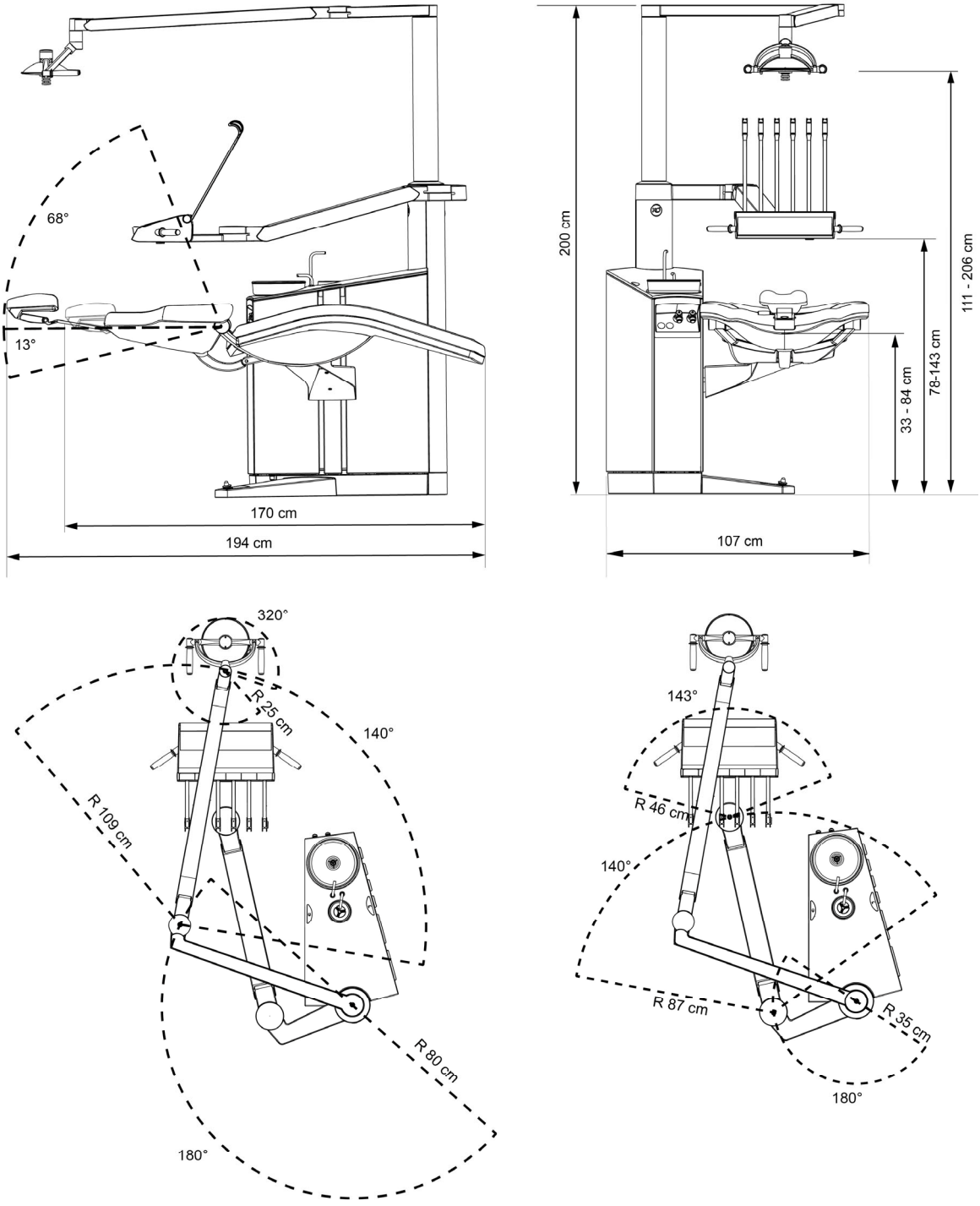


Figure 85 – XO FLEX dimensions and range of motion

13.2 TECHNICAL SPECIFICATIONS

Table 18 – Technical specifications

Part	Specification
Instrument bridge	
Number of instruments	≤ 6
Force to move the instrument bridge corresponding to	400 g – 1,500 g
Luzzani syringe	
Water	20 – 100 ml/min ± 20%
Air	10 – 100 %
Other	See luzzani.com
Heating element, maximum power loading	100 W
Bien-Air MC3 micromotor	
Rotational speed	Variable in the range 100 – 40,000 RPM ± 10%
Torque (contra-angle gear ratio 1:1)	2.5 Ncm
Spray water (without contra-angle)	20 – 70 ml/min ± 20%
Spray air (without contra-angle)	10 – 100 %
Cooling air	10 l/min
Contra angles according to	ISO 3964, type 2 or type 3
Other	See bienair.com
Bien-Air MX2 micromotor	
Rotational speed	Variable in the range 100 – 40,000 RPM ± 10%
Torque (contra-angle gear ratio 1:1)	2.5 Ncm
Spray water (without contra-angle)	20 – 70 ml/min ± 20%
Spray air (without contra-angle)	10 – 100 %
Cooling air	10 l/min
Contra angles according to	ISO 3964, type 2 or type 3
Other	See bienair.com
Air instrument	
Drive air flow	55 Nl/min; 3.2 bar
Drive air adjustment	One step in the range 50 – 100 %
Spray water (without contra-angle)	20 – 70 ml/min ± 20%
Spray air (without contra-angle)	10 – 100 %
Turbine hand-pieces and other air instruments according to	ISO 9168:2009, type 3
XO ODONTOSON	
Type	Magnetostrictive with ferrite rod
Amplitude of instrument movement	10 – 20 µm

Part	Specification	
Instrument movement pattern	Circular	
Instrument frequency	42 kHz	
Instrument material	Titanium	
Power setting	One step in the range 10 – 100 %	
Irrigation	10 – 90 ml/min ± 20%	
XO ODONTOCURE		
Light source	LED	
Wave lengths	385 – 515 nm (peaks at 400 nm ±10 nm and at 460 ± 3 nm).	
Power output – Normal mode	1650 mW/cm^2	
Power output – Soft Start	375 mW/cm^2	
Fiber glass rod outer diameter	8 mm	
Cross-sectional area of optics (effective)	0,44 cm^2 (44,2 mm^2)	
Hand piece temperature during use	46°C	
Curing activator classification	Class 2, Type 1	
Intraoral Camera		
Connection	USB 2.0 (USB 3.0 compatible)	
Activation	Via switch on the handpiece top or bottom, or via footcontrol (requires software and a serial connection between com and unit	
Handpiece weight	70g	
Handpiece length	200mm	
Driver	Uses standard windows drivers, no additional drivers required	
Resolution	1280x1024 pixel	
Lighting (depending on head type)	CAM 2 LED's 400-780 nm Proof 405 nm ultraviolet Proxi 850 nm infrared	
Ambient Operating Temperature	10-35°c	
Patient chair		
Height above floor	51 – 105 cm – measured from floor level to the top of the seat	
Maximum load	150 kg	
Drive motors for chair and backrest	25 seconds ON – 400 seconds OFF	
Operating light		
Light intensity	3,000 – 30,000 lux	
Color rendering index (CRI)	> 95	
Color temperature	5,500 K	
Illuminance pattern	In accordance with ISO 9680 - see Figure 86 below	
Suction		
The unit shall be connected to a suction machine with	High flow rate	
Type of suction	Wet or dry	
Inner diameter of high volume suction nozzle	16 mm	
Inner diameter of saliva suction nozzle	7 mm	
	Flow [l/min]	Head loss [mbar]

Part	Specification	
Head loss between the suction installation and the atmospheric end of the high-volume suction cannula	250	33,9
	300	59,3
	350	84,7
	450	110,1
Head loss between the suction installation and the atmospheric end of the saliva suction cannula	Flow [l/min]	Head Loss [mbar]
	250	33,9
	300	42,3
	350	67,7
	450	84,7
Mesh size suction filters	< 1 mm	
Weighted noise level from the suction system through the connected cannulas at a distance of 0.5 m from the cannula connect	<65 dB (A)	
Water and air supply		
Mesh size air filter	5 µm	
Mesh size water filter	50 µm	
Maximum inlet water conductivity	850 µS/m	
Water disinfection (XO Water Disinfection)		
Continuously dispersion of a solution of non-toxic disinfectant to the procedural water.	0.0235% hydrogen peroxide	

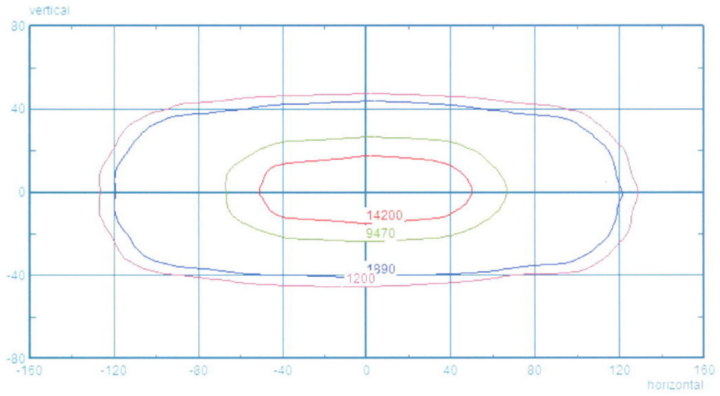


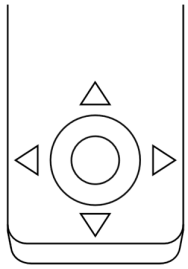
Figure 86 – XO Light – Illuminance pattern contour lines corresponding to 10%, 50% and 75% of the maximum illuminance

Table 19 – Boxes dimensions and weight

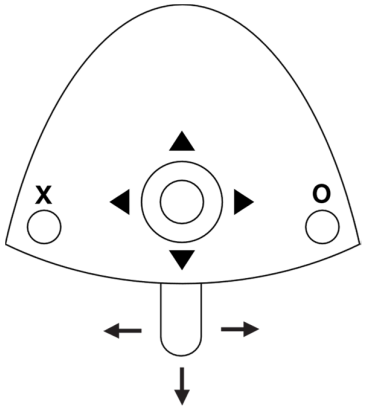
Box	Dimensions (cm) L x W x H	Gross weight (kg)
Unit stand	120 x 72.1 x 140	150 – 170
Arm and instrument bridge	134.4 x 72.4 x 44	35
Operating light	118 x 53 x 40	15
Patient chair	165 x 80 x 56	65
XO SEAT	60 x 60 x 37	10.3
XO STOOL	60 x 60 x 37	14.6
XO HD display incl. arm	93 x 63.8 x 43	19
Steel installation plate	120 x 93 x 18	54 incl. pallet

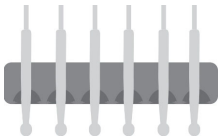
14 XO FLEX QUICK GUIDE

Table 20 – XO FLEX Quick Guide

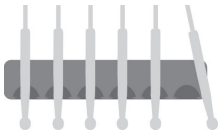


▷	Working position 1
◁	Working position 2
△	Previous position
▽	Once: Rinse position Twice: Entry position





▲	Lift chair
▼	Lower chair
►	Increase backrest inclination
◄	Decrease backrest inclination
X	Start/stop cup filler
O	Call chairside assistant
🡓	Short: Operating light on/off
🡓	Long: Change operating light intensity



▲	Increase (maximum) speed / power / time
▼	Decrease (maximum) speed / power / time
►	Increase amount of spray water
◄	Decrease amount of spray water
X	Enable/disable automatic chip blow Video: Save active video image
O	Change spray selection Video: Toggle between “still” and “live”
➞	Activate instrument
←	Activate instrument (counter-clockwise) – if possible

XO FLEX
REF XO-102

Instructions for use
Ref. YB-660
Ver. 4.03
2021-12-14

Subject to change

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