

# XO<sup>®</sup> 4 Workstation

## User Guide

YB-253 Version 3.10

Valid from Firmware version 3.00





# 1 Preface

## 1.1 XO 4 documentation

This document describes how XO 4 functions in general.

If you own an XO 4-1 Unit please also see:

- XO 4-1 Quick Guide
- XO 4-1 Configuration Guide

If you own an XO 4-2 or XO 4-6 Unit please also see:

- XO 4-2 / XO 4-6 Quick Guide
- XO 4-2 / XO 4-6 Configuration Guide

## 1.2 Regulatory

XO 4 was designed for dentists and other dental professionals who diagnose, perform prophylactic treatment and/or treatment of diseases in the oral cavity of humans. Your XO 4:

- Has been developed, manufactured, sold and handled in accordance with the requirements of ISO 9001:2000 and ISO 13485:2001,
- has been tested and approved under EN 60601-1 concerning general requirements for safety of medical electrical equipment,
- has been tested and approved under EN 60601-1-2 concerning requirements and tests for electromagnetic compatibility of medical electrical equipment, and
- is in conformity with relevant requirements of Council Directive 93/42/EEC concerning medical devices.

Copying or other kinds of transfer of the content of this document is prohibited unless specific acceptance has been given by XO CARE A/S (hereinafter called XO).

## 1.3 Rights

Instruments and accessories built into XO 4 or used in combination with XO 4 by third party medical device manufacturers are supplied under the responsibility of said manufacturers.

XO is continuously developing its products. XO reserves the right to change and improve the product specifications described in this document without prior notice. XO is not required to make such changes and improvements to products previously manufactured or sold.

The information in this document is given "as is". XO reserves the right to change this document or recall it at any time and without any notice.

## 1.4 Warranty

XO warrants that your XO 4 is free from defects in materials and workmanship for a period of 12 months from the date of installation.

Parts subject to wear and tear such as O-rings, bulbs, membranes, suction tubes, and filters are not covered by the warranty.

### NOTE!!

XO CARE undertakes no responsibility for warranties, safety, reliability and function:

- a) If the equipment has not been used under normal conditions for its intended purpose and in strict accordance with this User Guide and/or
- b) If technical changes including repairs, adjustments/calibrations and reconstructions have been made by anyone other than XO or specialists approved by XO.

# List of contents

1	Preface . . . . .	iii
1.1	XO 4 documentation . . . . .	iii
1.2	Regulatory . . . . .	iii
1.3	Rights . . . . .	iii
1.4	Warranty . . . . .	iii
2	Introduction . . . . .	1
3	How to use XO 4 . . . . .	2
3.1	Overview . . . . .	2
3.1.1	Switch on XO 4 . . . . .	2
3.1.2	The display . . . . .	2
3.1.3	Sound generator . . . . .	2
3.2	Unit instrument control . . . . .	2
3.2.1	Instrument selection . . . . .	2
3.2.2	Unit instruments . . . . .	3
3.2.3	Multifunctional syringe . . . . .	3
3.2.4	Micro motor . . . . .	3
3.2.5	Turbine . . . . .	3
3.2.6	Ultrasonic scaler . . . . .	3
3.2.7	Light curing lamp (LC lamp) . . . . .	3
3.2.8	Intraoral video camera . . . . .	4
3.2.9	Placement of unit instruments and hand instruments . . . . .	4
3.3	How to operate auxiliary functions . . . . .	4
3.3.1	Patient chair . . . . .	4
3.3.2	Patient positioning . . . . .	5
3.3.3	XO 4 Lamp . . . . .	5
3.3.4	XO HD Display . . . . .	6
3.3.5	Suction . . . . .	6
3.3.6	Call assistant . . . . .	6
4	Infection control . . . . .	7
4.1	Disinfectants recommended for XO 4 . . . . .	7
4.2	Disinfecting unit water lines with XO Water Clean System (optional) . . . . .	7
4.2.1	Dual step water treatment . . . . .	7
4.2.2	Single step water treatment (heavy deposits) . . . . .	8
4.3	Disinfecting the suction system . . . . .	8
4.3.1	Flushing with XO Suction Disinfection (optional) . . . . .	8
4.3.2	Suction filters . . . . .	10
4.4	Disinfecting unit and chair surfaces . . . . .	11
4.4.1	Cleaning and disinfecting unit surfaces . . . . .	11
4.4.2	XO 4 Lamp . . . . .	11
4.4.3	Handles . . . . .	11
4.4.4	Cuspidor bowl . . . . .	11
4.4.5	Chair upholstery, standard . . . . .	12
4.4.6	Chair upholstery, XO SCUBA . . . . .	12
4.4.7	XO HD Display . . . . .	12
4.5	Sterilizing and disinfecting unit instruments and accessories . . . . .	12
4.5.1	Unit instrument pad . . . . .	12
4.5.2	Instrument hoses and suspension . . . . .	12
4.5.3	Multifunctional syringe . . . . .	13

---

## List of contents

---

4.5.4	Bien Air MC3 micro motor . . . . .	13
4.5.5	Other instruments . . . . .	13
5	How to maintain your XO 4 . . . . .	14
5.1	Preventive service . . . . .	14
5.2	Amalgam separator . . . . .	14
5.3	Instrument hoses . . . . .	14
5.4	Bien Air MC3 micro motor . . . . .	15
5.5	Ultrasonic scaler . . . . .	16
5.6	Light curing lamp . . . . .	16
5.7	XO 4 Lamp, halogen type . . . . .	16
5.8	XO 4 Foot Control . . . . .	16
5.9	Hand instrument table, adjustment . . . . .	16
6	Error messages . . . . .	17
7	Service messages . . . . .	18
8	Useful consumables, spare parts, and infection control parts . . . . .	19
9	Quality of dental air and water . . . . .	20
10	Symbols and glossary . . . . .	21

## List of Figures

Figure 1: On/Off switch .....	2
Figure 2: Numbering of unit instruments – anterior view .....	3
Figure 3: Multi-functional syringe.....	3
Figure 4: Pedal position and speed reaction .....	3
Figure 5: Placement of instrument bridge.....	4
Figure 6: Hand instrument table .....	4
Figure 7: Seize the headrest .....	5
Figure 8: Locking of headrest .....	5
Figure 9: Activating operation lamp .....	5
Figure 10: Correct distance for XO Lamp .....	5
Figure 11: XO HD Display .....	6
Figure 12: Suction, model 2005. Working DUO .....	6
Figure 13: Suction, model 2005. Working SOLO .....	6
Figure 14: Unit instruments in the instrument holder on the cus-pidor .....	7
Figure 15: XO Water Clean cartridge .....	8
Figure 16: Removal of suction nipple covers.....	9
Figure 17: Flushing of suction system .....	9
Figure 18: Removal of suction hoses and filters.....	10
Figure 19: Press the button to eject filter.....	10
Figure 20: O-rings on filter cartridge .....	10
Figure 21: Removal of splash screen .....	11
Figure 22: Removing handle .....	11
Figure 23: Lifting the cuspidor bowl.....	11
Figure 24: Wiping direction, instrument hose cleaning.....	12
Figure 25: Removal of syringe cover .....	13
Figure 26: Removal of micro motor cover .....	13
Figure 27: Access to amalgam-separator.....	14
Figure 28: Dürr CAS 1 COMBI-SEPARATOR.....	14
Figure 29: Removing instrument tube .....	15
Figure 30: Check for identical numbers.....	15
Figure 31: Replacement of bulb in micro motor.....	16
Figure 32: Replacement of lamp bulb.....	16
Figure 33: Cleaning of rubber feet.....	16
Figure 34: Adjustment of hand instrument table.....	16

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## List of tables

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Table 1:	Sounds. . . . .	2
Table 2:	Error messages . . . . .	17
Table 3:	Service messages . . . . .	18
Table 4:	Consumables. . . . .	19
Table 5:	Useful spareparts. . . . .	19
Table 6:	Useful infection control parts . . . . .	19
Table 7:	Symbols and glossary . . . . .	21

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## 2 Introduction

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Dear dentist,

Congratulations on your new equipment and thank you for choosing an XO product.

In order for you to obtain maximum benefit from the equipment, please read the delivered guides carefully.

It contains information about how to operate the equipment and its many functions. It is important that you become familiar with these functions in order to carry out easy and quicker treatment with optimum patient comfort.

The infection control section describes how you maintain the highest level of infection control – while treating the equipment as carefully as possible.

In order to secure long-term durability of the equipment and maximum up-times, it is also important that you study the section on maintenance and service carefully. The fact is that if you take good care of your new equipment from the start, you will derive maximum benefit from it – in addition to reducing service and maintenance costs.

Sincerely

XO CARE A/S

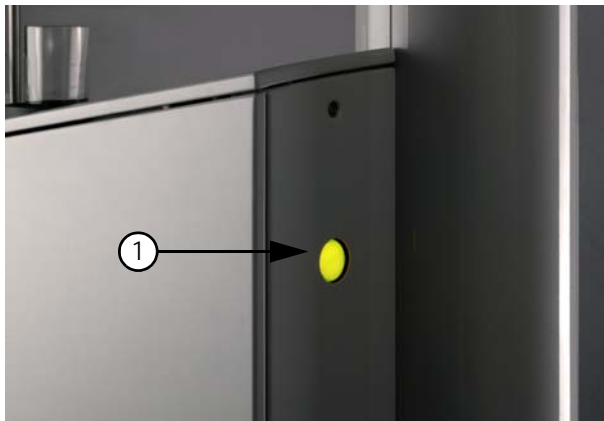


## 3 How to use XO 4

### 3.1 Overview

**Note!!** When reading this User Guide we recommend to have XO 4 Quick Guide in front of you.

#### 3.1.1 Switch on XO 4



**Figure 1** On/Off switch

Switch XO 4 on with (1).

#### 3.1.2 The display

The 8 characters of the display keep you informed about relevant data concerning the unit and the unit instruments – e.g. service and error messages. See Table 2 and Table 3.

When the unit is switched on, information concerning unit type, software version and serial number appears on the display.

Please refer to XO 4 Quick Guide for more details.

#### 3.1.3 Sound generator

In order to optimize the ease-of-use, a built in audio system will guide you:

Sound	Interpretation
Click	Each activation of the XO Foot Control, XO Joystick and other switches triggers a "click" sound
OK	When, for instance a new parameter is stored, this is indicated with an "OK" sound
Wrong	If you try to do something "wrong" – e.g. increase selection of maximum speed beyond the maximum limit
Warning	Something is wrong – check the display
Attention	In example when the micro motor starts rotating counterclockwise

**Table 1:** Sounds

## 3.2 Unit instrument control

### 3.2.1 Instrument selection

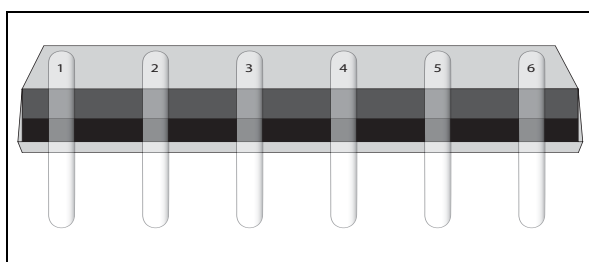
The first instrument lifted forward is the selected instrument. The selected instrument is activated using the XO Foot Control.

If more than one (the first) instrument is lifted forward, the other instruments are blocked. If a second instrument is lifted forward while the first instrument is still lifted forward, and the first instrument laid back, the second instrument is the selected instrument – but only after the pedal on the main XO Foot Control has been de-activated.

**Note!!** An intraoral video camera may be used simultaneously with another selected instrument – but control of camera functions via the main XO Foot Control is only possible when the video camera is the selected instrument.

### 3.2.2 Unit instruments

A maximum of 6 instruments can be attached to the instrument bridge. The instruments are numbered 1 – 6, starting from the left.



**Figure 2** Numbering of unit instruments – anterior view

All positions are configurable.

The multi functional syringe shall be placed either in pos. 1 or 6.

All unit instruments are attached to the instrument bridge via a plug. Each instrument plug has a number identical to the number of the place to which the instrument must be reattached.

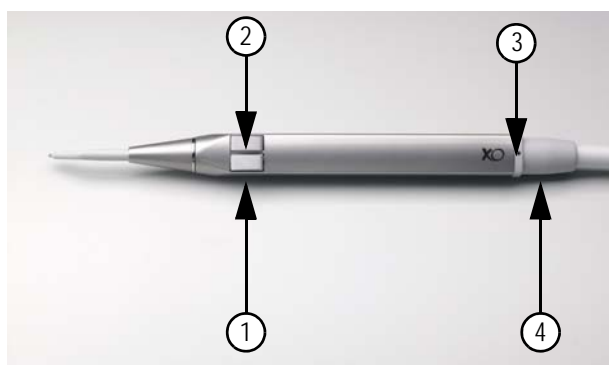
If you need to change the order of the instruments, please call your XO 4 service provider.

### 3.2.3 Multifunctional syringe

3-functional / 6-functional syringe: Press (1) for air and (2) for water.

6-functional syringe: A green LED (3) signals that the heating element is on.

Use the rotating switch (4) to select heated / non-heated water.

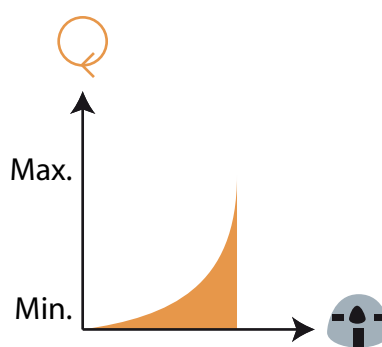


**Figure 3** Multi-functional syringe

### 3.2.4 Micro motor

The micro motor is operated as described in XO 4 Quick Guide.

The speed adjusts exponentially in relation to pedal movements. This ensures more accurate control of the micro motor at low speeds.



**Figure 4** Pedal position and speed reaction

For user-specific needs – please refer to XO 4 Configuration Guide.

### 3.2.5 Turbine

The turbine is operated as described in XO 4 Quick Guide.

For user-specific needs – please refer to XO 4 Configuration Guide.

### 3.2.6 Ultrasonic scaler

The scaler is operated as described in XO 4 Quick Guide.

The amplitude is not affected by pedal position.

For user-specific needs – please refer to XO 4 Configuration Guide.

### 3.2.7 Light curing lamp (LC lamp)

The default exposure time for the LC lamp is 20 seconds.

The lamp stops after set exposure time or when the instrument is put back on the instrument bridge, whatever comes first.

After each 10 seconds of exposure time, you will hear an “OK” sound.

The "sound" can be configured according to user-specific needs – please refer to XO 4 Configuration Guide.

For further instructions, please refer to the User Manual for the LC lamp.

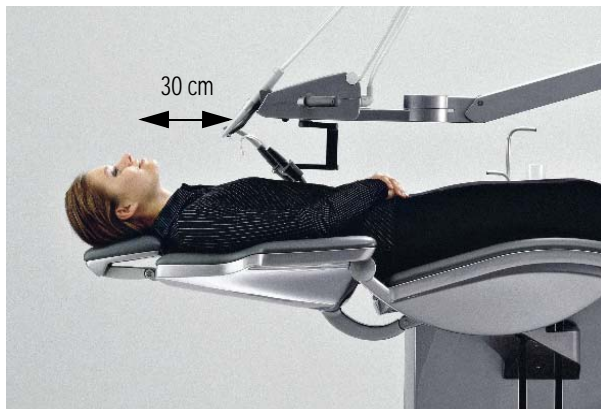
### 3.2.8 Intraoral video camera

When the video camera is lifted forward (independent of the other unit instruments), the fibre light switches on and the video signal appears on the computer screen for this purpose.

**Note!!** Requires installation of appropriate software on connected PC.

### 3.2.9 Placement of unit instruments and hand instruments

When positioning the instrument bridge, allow for an approximate distance of 30 cm from the patient's mouth to the unit instruments.



**Figure 5** Placement of instrument bridge

Optimum placement of hand instruments is on the hand instrument table of XO MIO cabinet arrangement. You as well your assistant will be able to reach out for the hand instruments.

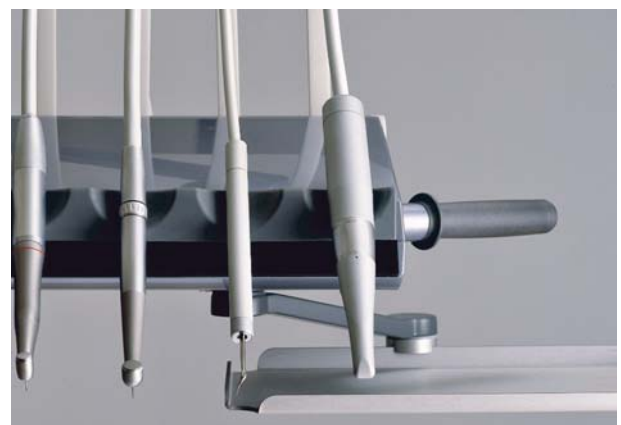
A hand instrument table mounted under the unit instrument bridge is included in XO 4's range of accessories. This is particularly suitable for dentists working solo.

The hand instrument table is available in 2 sizes. A standard size for 1 cassette and a double size for 2 cassettes.

The inclination of the hand instrument table can be adjusted according to the instruction shown in section 5 "How to maintain your XO 4"



**Maximum allowable weight at both types of instrument table is 4 kg.**



**Figure 6** Hand instrument table

## 3.3 How to operate auxiliary functions

### 3.3.1 Patient chair

The height and the backrest inclination are adjusted with the joystick on XO Foot Control as described in XO 4 Quick Guide. You can choose between 4 pre-configured positions with the XO Joystick:

- "Rinse Position" is the chair position, at which the patient obtains optimum rinse of mouth.
- "1" – Position 1.
- "2" – Position 2.
- "Zero Position" is the position where the patient enters/exits the chair.

"Last Position" returns the chair to the position prior to the present position.

The working positions 1 and 2, the Rinse and Zero positions can be configured according to user-specific requirements. Please refer to XO 4 Configuration Guide.

### 3.3.2 Patient positioning

#### Head rest

The patient chair is equipped with an articulating headrest, supporting the patient's head and neck. We recommend that the headrest be adjusted before the chair reaches its treatment position:

- 1 Activate a pre-configured treatment position of your choice
- 2 Seize the headrest cushion with your right hand
- 3 Release the lock switch, see Figure 7
- 4 Now adjust the headrest to support the patient's neck and head
- 5 When the backrest passes approx. 45 degrees, lock the headrest again, see Figure 8
- 6 Now, only minor adjustments need to be made to adjust the headrest optimally to the patient



Figure 7 Seize the headrest



Figure 8 Locking of headrest

### 3.3.3 XO 4 Lamp



Figure 9 Activating operation lamp

If manual lamp control is required, hold your hand near to (1) for less than one second, and the lamp turns on/off.

Change the light intensity (3 levels) by holding your hand near to (1) for more than one second.

Please note, that the correct distance from XO 4 Lamp to patient is 700mm, measured from front of the fan to patients mouth.

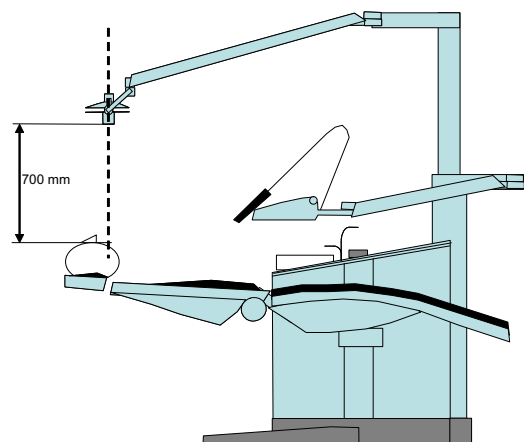


Figure 10 Correct distance for XO Lamp

### 3.3.4 XO HD Display



Figure 11 XO HD Display

Please refer to the separate User guide for XO HD Display.

### 3.3.5 Suction

Each of the suction hoses are activated individually when lifted from the holder.

Both suction hoses may be relieved by pressing them into their slots.

When working solo, move the suction hose holder forward to facilitate easy access to the suction hoses.



Figure 12 Suction, model 2005. Working DUO



Figure 13 Suction, model 2005. Working SOLO

### 3.3.6 Call assistant

Please note that a bell or other external signalling devices must be connected to XO 4 before call assistant can be heard. Please agree with your service provider how you would like the call assistant feature to work.

## 4 Infection control

The following procedures are recommended to ensure aseptic working environment.

Please refer to XO 4 Quick Guides for daily infection control routines.

### 4.1 Disinfectants recommended for XO 4

Always use the disinfection products described in this User Guide. Please read paragraph 8.



Do not use any other disinfectants or cleaning products!



Do not soak any unit instruments or ultrasonic cleaner accessories in ultrasonic cleaning solutions, nor place them in soaking basins with liquid chemicals.



Please note that failure to comply with these precautions will affect XO's warranty liability.


### 4.2 Disinfecting unit water lines with XO Water Clean System (optional)

#### 4.2.1 Dual step water treatment

The water to the unit instruments and cup filler are constantly disinfected when a water treatment system has been installed.

We recommend a "Dual step" water treatment (normally step 1 – evening, and step 2 – morning) to keep the water system clean and free from deposits:

##### Step 1 (evening)

- 1 Place all water-bearing unit instruments in the instrument holder on the cuspidor. Place the tubing with the "T-piece" on the cup filler outlet.
- 2 Activate  (the expansion container is now emptied).
- 3 Wait for 3 minutes. The display will show the remaining time of the process.
- 4 Switch off the unit and leave the unit instruments in the instrument holder on the cuspidor.

##### Step 2 (morning)

- 1 Check that the unit instruments are still in the instrument holder on the cuspidor.
- 2 Turn on the unit.
- 3 The unit water lines are automatically flushed with disinfection liquid for as long as required in order to maintain a low bacterial load (6 minutes).

The display will show 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 the flushing and expansion container water discharge process is not possible.



Do not keep the XO Water Clean cartridge's in direct light. Should be kept in the packing or in a closet.



**Figure 14** Unit instruments in the instrument holder on the cuspidor

XO Water Clean cartridge (1) must be replaced at specific intervals (ref. no. AN-355). When the contents in the cartridge are under a certain level, you will hear a "warning-sound" and the message "CHECK WHITE BOTTLE " appears in the unit display.



Be careful not to spill the fluid. Any spills must be wiped up at once. Then clean the surface with a damp cloth.



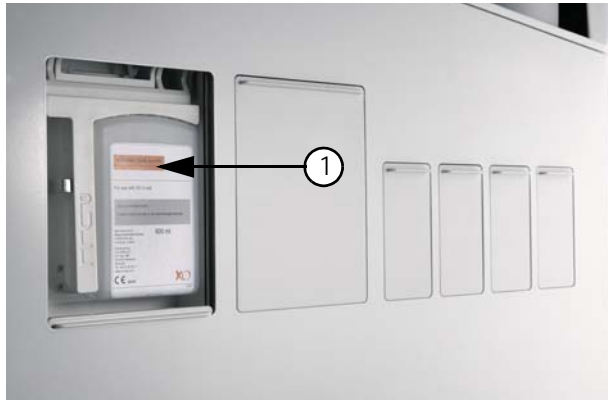


Figure 15 XO Water Clean cartridge

#### 4.2.2 Single step water treatment (heavy deposits)

The "single step" water treatment should be used when the bacterial load of the unit water lines is considered to be too high, for instance, after vacation or other longer periods without usage.

We recommend that the single step water treatment be performed 3 consecutive times after such periods.

- 1 Place all water-bearing unit instruments in the instrument holder on the cuspidor. Place the tube with the "T-piece" on the cup filler outlet.

- 2 Activate  (not ). The expansion container is emptied and the water lines are flushed.

The display will show 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 the flushing and expansion container water discharge process is not possible.**

### 4.3 Disinfecting the suction system

The suction valves and tubes inside the unit are constantly flushed with clean water while suction is activated. However, in order to maintain an aseptic working environment, the suction system needs to be cleaned and disinfected daily.

Disinfection and cleaning of the suction system is also important to ensure problem-free operation of the equipment. Otherwise, the suction system may clog up, and break down as a result.

If you have chosen to equip XO 4 with XO Suction Disinfection, please proceed to section 4.3.1.

If your XO 4 does not have XO Suction Disinfection, the system must be cleaned manually.

We recommend the use of the Dürr OroCup system with Dürr Orotol Plus suction rinse.

If the suction tubes or drain contains heavy deposits, we recommend the use of Dürr MD 555 Orotol® special cleaner combined with the Dürr OroCup.

In either case, please be sure to follow the instructions given by Dürr.



**Do not use any other disinfectants or cleaning products! Please note that failure to comply with this will affect XO's warranty liability.**

#### 4.3.1 Flushing with XO Suction Disinfection (optional)

Every day the suction system (valves and tubes) must be disinfected by flushing with XO Suction Disinfection (ref.no. AN-354).

- Disconnect the suction tubes and press the button (2) (Figure 17) once to deactivate suction.
- Remove covers from suction nipples.
- Place the two suction nipples on the disinfection nozzles (3) and reactivate the push button (2), following which flushing starts.

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

The suction nipple covers can be autoclaved at max. 134 °C.


 If much blood has been suctioned through the system, we recommend that the system be flushed with at least 1 litre of cold water. After this procedure, the system can be disinfected with XO Suction Disinfection.



Figure 16 Removal of suction nipple covers

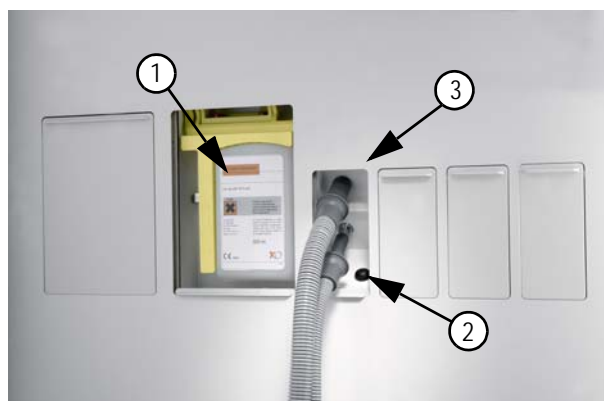




Figure 17 Flushing of suction system


- 1 Container with XO Suction Disinfection
- 2 Push button, start Suction Disinfection
- 3 Suction nipples

The display shows the progress of the disinfection process. When "SUCTION OK" appears in the display, the process has been carried out successfully.

 Please note that manual cancellation of flushing is not possible.

XO Suction Disinfection container (1) must be replaced at specific intervals. When the contents in the container are under a certain level, a "warning" will be activated and the message "CHECK YELLOW BOTTLE" appears in the unit display.

 XO Suction Disinfection is a corrosive liquid. Read the safety data sheet supplied with the product.

 Be careful not to spill the fluid. Any spills must be wiped up at once. Then clean the surface with a damp cloth.



### 4.3.2 Suction filters

Disconnect the suction hoses from the unit and eject the filters by pressing the button.



Figure 18 Removal of suction hoses and filters.



Figure 19 Press the button to eject filter.

Wash the filters in a thermodisinfectant (90 °C).

Lubricate the O-rings on the filters with XO silicone grease (ref. no. YR-002) before inserting clean filters (ref. no. MR-075). If air starts to leak from the suction tubes, try to replace the O-rings of the filter cartridge (UC-063 and UC-064).



Figure 20 O-rings on filter cartridge



Suction filters and tubes may contain mercury and therefore should be handled in accordance with national or local requirements!

## 4.4 Disinfecting unit and chair surfaces

Use soap and disinfectants to disinfect surfaces. Please read below.

### 4.4.1 Cleaning and disinfecting unit surfaces

Clean and disinfect the surfaces of the unit using a cloth with Dürr FD-322. Use a clean cloth.



Look out for disinfection liquid dripping from the cloth.



After disinfection of the instrument bridge's surfaces, the disinfection fluid must completely evaporate before the rubber device is replaced.

### 4.4.2 XO 4 Lamp

The splash screen may be removed for cleaning by the two screws. Clean and disinfect with soap. Use a clean cloth.

The reflector can be cleaned carefully using tap water and a mild soap.



Figure 21 Removal of splash screen

### 4.4.3 Handles



Figure 22 Removing handle

The instrument bridge, lamp and screen handles are removed by pressing the knob (1) at the end of the handle.

The handles can be autoclaved at max. 134°C.

### 4.4.4 Cuspidor bowl

Before removing the cuspidor bowl, turn the cuspidor rinse pipe away.

The cuspidor bowl, cuff and cupholder can be cleaned and disinfected in a thermodisinfectant (90°C).



Figure 23 Lifting the cuspidor bowl

#### 4.4.5 Chair upholstery, standard

Chair upholstery is disinfected by using a cloth with Dürre FD-360 or soap water.



Cleaning the upholstery in methylated spirits dries out the surface and causes the upholstery to crack.

#### 4.4.6 Chair upholstery, XO SCUBA

The XO SCUBA cover can be dried with a dry or damp cloth. If necessary, water based cleaning agents can be used. Vacuum with a soft brush.

Remove stains with a slightly damp cloth. Coloured fluids will penetrate into the upholstery and leave permanent stains.



Only use non-alcohol based and oil free disinfection agents. At [www.xo-care.com](http://www.xo-care.com) you will find an updated list of approved disinfection agents.



Dürre FD-340 and FD-360 CANNOT be used on XO SCUBA. These products contain silicone composite materials and avocado oil and will leave stains.

#### 4.4.7 XO HD Display

Please refer to the separate User Guide.

### 4.5 Sterilizing and disinfecting unit instruments and accessories

When autoclaving is mentioned in the following, the following autoclaves may in principle be applied under the following guidelines, cf. EN 13060:

Type N (gravitation autoclave): Massive, unpacked material

Type B (vacuum autoclave): Non-massive, packed material and fabrics

Since a Type B autoclave can also be applied for massive, unpacked material, it is recommended that you always use a type B autoclave. Since these autoclaves have better temperature control throughout the autoclave process, they also process the material more gently.

Please note that some instruments and accessories are not designed for thermo disinfectors or autoclaves.



The autoclaving and thermo disinfection processes wear down the materials and may cause them to lose their colours or shorten their lifetime.

#### 4.5.1 Unit instrument pad

The unit instruments pad can be cleaned in a thermo disinfectant (90 °C) and autoclaved at max. 134 °C.

Remove grease residues etc using benzine.

#### 4.5.2 Instrument hoses and suspension

Disinfect unit instrument hoses with Dürre FD-322.

Wipe the cloth from the instrument coupling towards the plug to avoid disinfection liquid from leaking into the instrument coupling!



Figure 24 Wiping direction, instrument hose cleaning

Instrument suspensions can be washed in a thermo disinfectant (90 °C).



Do not wash unit instrument hoses in a thermo disinfectant!



In the event that the instrument hoses have been removed, one must ensure that the plugs and sockets are completely dry before the hoses are re-mounted on the instrument bridge again!

#### 4.5.3 Multifunctional syringe

The syringe cover and the tip can be autoclaved at max. 134°C. Press the button at the back (1) and slide off the cover. Remove the tip by loosening the joint (2).

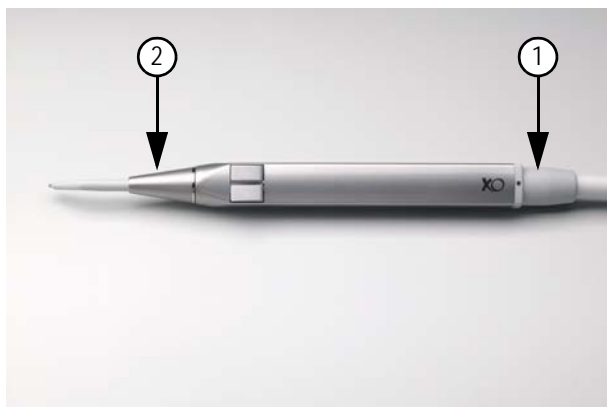


Figure 25 Removal of syringe cover



Do not wash the multifunctional syringe in a thermo disinfectant and do not autoclave!

#### 4.5.4 Bien Air MC3 micro motor

The micro motor cover (1) can easily be removed for autoclaving at max. 134°.



Do not pull the tube!

Disinfect the micro motor with Dürr FD-322.

Lubricate the o-rings (2) with XO silicone grease (ref. no. YR-002)



Figure 26 Removal of micro motor cover

Do not wash the micro motor in a thermo disinfectant and do not autoclave!

#### 4.5.5 Other instruments

For turbines, ultrasonic scalars, LC lamps, intraoral video cameras and other instruments:

Please refer to the user manual supplied with the instrument.

## 5 How to maintain your XO 4

### 5.1 Preventive service

Like all products used every day XO 4 needs preventive service checks to prevent emergency repairs and other unplanned downtime.

Approximately 30 days before the next preventive service, a message appears on the unit display when XO 4 is switched on.

In case the visit becomes overdue, a warning message will appear on the unit display as well.

When the preventive service has been performed, the XO service provider will set the date for the next preventive service (normally at 12 month intervals, in some cases less).

### 5.2 Amalgam separator

Access to the combi-separator is gained through the cover (1) of XO 4.



**Figure 27** Access to amalgam-separator

Every 6-9 months, the amalgam container must be replaced. A warning signal activates when the container is 95% full.



**Figure 28** Dürr CAS 1 COMBI-SEPARATOR.

When the warning signal sounds from the separator, press the button "40" (see user instruction for Dürr CAS 1) behind the cover, and the warning signal stops.

If the warning signal does not stop when button "40" is pressed, the amalgam container is 100% full and must be replaced immediately.

More elaborate instructions on the replacement of the container are provided in the user manual for Dürr CAS 1 COMBI-SEPARATOR.

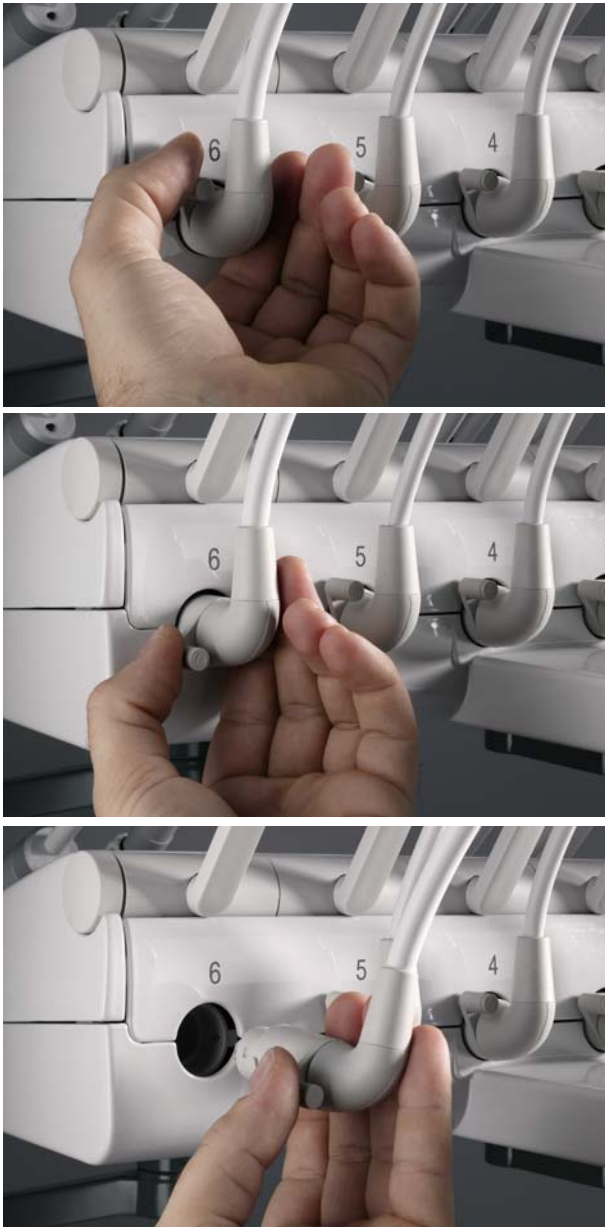


Amalgam waste is considered hazardous to the environment and should therefore be disposed of safely and in accordance with regulatory requirements. Remember to use safety gloves.

### 5.3 Instrument hoses

Remove instrument hoses by turning the knob handles (1) counter clockwise and pulling out the plug.

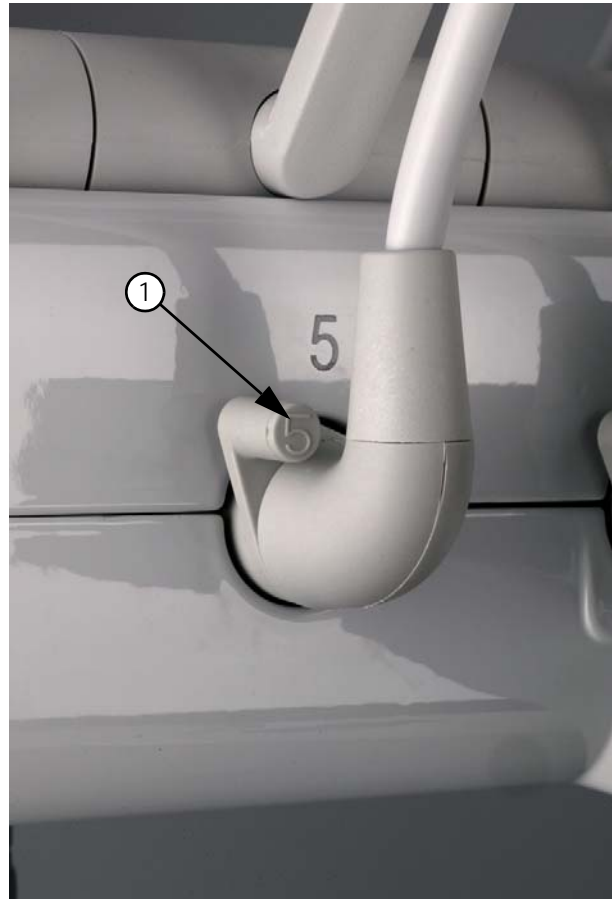




**Figure 29** Removing instrument tube

When refitting the instrument hoses, please check that instrument tube number and the number marked on the instrument bridge are identical.

In case you replace an instrument tube, please be sure to affix the correct identification number to the new tube.



**Figure 30** Check for identical numbers



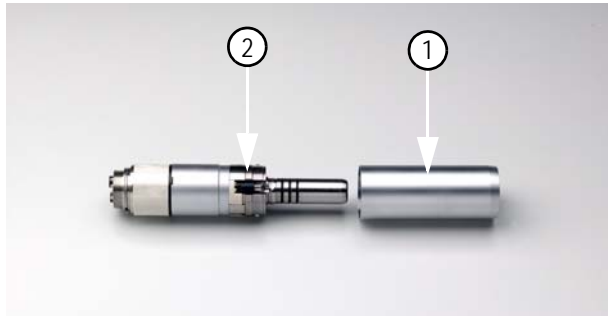
In the event that the instrument hoses have been removed, one must ensure that the plugs and sockets are completely dry before the hoses are re-mounted on the instrument bridge again!

## 5.4 Bien Air MC3 micro motor

XO recommends annual control and servicing of micro motors and contra-angles.

Replace the bulb as follows:

- 1 Pull the motor cover (1) off.
- 2 Change the bulb (2) (ref.no. HE-005).
- 3 Avoid touching the bulb with your fingers. Use clean gloves or a clean piece of cloth.



**Figure 31** Replacement of bulb in micro motor

Please refer to the user guide for the micro motor.

## 5.5 Ultrasonic scaler

Please refer to manufacturer's documentation.

## 5.6 Light curing lamp

Please refer to manufacturer's documentation.

## 5.7 XO 4 Lamp, halogen type

Replace the bulb (ref.no. WH-007) as follows:

- 1 Switch off XO 4 unit.
- 2 Remove the splash screen by means of the 2 screws.
- 3 Push and turn the shade counter-clockwise and remove it.
- 4 Avoid touching the bulb with your fingers. Use clean gloves or a clean piece of cloth when handling the bulb.
- 5 Use the plastic tool to carefully mount the bulb in the socket.
- 6 Mount the shade and the splash screen again.
- 7 Switch on XO 4 and activate XO 4 Lamp.



**Figure 32** Replacement of lamp bulb

## 5.8 XO 4 Foot Control

If XO Foot Control slides on the floor when activated: Clean rubber feet under foot control with benzene.



**Figure 33** Cleaning of rubber feet



Clean rubber feet under XO Foot Control regularly with benzene.

## 5.9 Hand instrument table, adjustment

The inclination of hand instrument table can be adjusted with a 4 mm Allen key. The inclination of the hand instrument table can be adjusted by means of a 4 mm Allen key:



**Figure 34** Adjustment of hand instrument table

## 6 Error messages

Certain functional errors can be detected by XO 4 and written to the display. Please refer to Table 2 for interpretation of error codes and remedial action.

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 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 service provider.
NO WATER FLOW	Displayed when unit detects that it takes more than 90 sec. to fill the mixing cup.	Check the water supply to the unit or call your XO service provider.
POWER DRIVER FAIL!! CALL SERVICE	Displayed after start-up of unit, if no communication with Power Driver is detected.	Call your XO service provider.
STAND CONTROL FAIL!! CALL SERVICE	Displayed after start-up of unit, if no communication with Stand Controller is detected.	Call your service provider.
SUCTION CLEAN FAIL!! CALL SERVICE	No Suction Disinfection liquid is supplied from the container.	Call your XO service provider.
UNIT NOT READY	Displayed if unit detects that foot pedal is activated during start-up.	Call your XO 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 service provider.
WATER LEAK CALL SERVICE (except XO 4-1)	Water leakage.	Switch off water supply and try to localize leakage. If necessary contact your XO service provider.
WRONG INSTRUMENT	Unit instruments are not fitted correctly.	Check that numbers on instrument hoses and instrument bridge are identical and connect correctly.

**Table 2:** Error messages



## 7 Service messages

Table 3 provides an overview of the service messages that may appear on the display.

Service Message	Reason for message	Remedial action
CHECK YELLOW BOTTLE	The unit will soon run out of XO Suction Disinfection.	Make sure you have a XO Suction Disinfection container in stock.
CHECK WHITE BOTTLE	The unit will soon run out of XO Water Clean.	Make sure you have a XO Water Clean cartridge in stock.
FLUSH MM MIN	Water lines are being flushed. MM = remaining min. 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 recommended preventive service.	Call your service provider and arrange service visit date.
SERVICE OVERDUE YYYY-MM-DD	Date for recommended preventive service is overdue.	Call your service provider and arrange service visit date.
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	Expansion tank discharging water. MM = remaining min. to completion of process.	Please wait – do not shut off power or activate any buttons.

**Table 3:** Service messages

## 8 Useful consumables, spare parts, and infection control parts

Table 4 provides a list of the most commonly used consumables. For a full list, please contact your service provider.

Consumables	Purpose	Ref. no.
XO Silicone grease	Lubrication of O-rings	YR-002
XO Suction Disinfection	Disinfection agent for suction system	AN-354
XO Water Clean	Cleaning agent for water treatment system	AO-980
Dürr Orotol® Plus	Disinfection of unit suction system	n/a
Dürr MD-555 Orotol®	Removal of heavy deposits from unit suction system	n/a
Dürr FD-322 (surface disinfection)	Surface disinfection	n/a
Dürr FD-360 (skai disinfection)	Upholstery cleaning/disinfection	n/a

**Table 4:** Consumables

Table 5 provides a list of the most commonly used spare parts. For a full list, please contact your service provider.

Useful spareparts	Reference Number
XO Lamp bulb	WH-007
Suction filters	MR-075
O-ring for filterhousing	UC-064
O-ring for filterhousing	UC-063
Suction hose Ø11, 1,65m	AN-068
Suction hose Ø16, 1,65m	AN-067
Bien Air MC3 Motor bulb	HE-005
O-ring for Bien Air MC3 Motor	SA-024
Amalgam separator container	n/a

**Table 5:** Useful spareparts

Table 6 provides a list of the most commonly used infection control parts.

Useful infection control parts	Reference Number
Handles	AN-110
Instrument pad	MG-239
Cover, suction tube nipple Ø11	MG-476
Cover, suction tube nipple Ø16	MG-475
Gold trap	MG-150
Tip for syringe S	SD-214
Cover for syringe S	SD-510
Mini infection control kit	XO-460
Infection control kit, complete	XO-461

**Table 6:** Useful infection control parts

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## 9 Quality of dental air and water

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Please note that the quality of dental air and water might be subject to special regulations set out in national laws.

The effective filter size on XO 4 is 5 µm for air and 50 µm for water.

In order to ensure proper operational conditions for XO 4 we recommend the use of (an) oil-free compressor(s) equipped with a dry air aggregate.

XO 4 fulfils the requirements in EN 1717 concerning the backflow of water if it is configured with XO-305 or XO-306. These backflow protections are designed with an air gap > 20 mm and prevent water from XO 4 from flowing back into the public supply line. If the above named backflow protection is not mounted, then the water supply to XO 4 must be secured against backflow in another way.

## 10 Symbols and glossary

Text / Symbol	Definition	See section
Selected unit instrument	The first instrument which is lifted forward	3.2.1
Active unit instrument	A selected unit instrument is activated by XO Foot Control	3.2.1
XO Joystick	A joystick on the unit/chair base	3.1.3
XO Chip Blow	Compressed air with high pressure being emitted from the instrument spray tubes	See XO 4 Configuration Guide
Configuration switch	A switch under the instrument table used for configuring XO 4	See XO 4 Configuration Guide
Factory default configuration (of unit)	The configuration of the unit when supplied from the factory	See XO 4 Configuration Guide
XO Foot Control	The XO Foot Control is placed on the floor and consists of a pedal and a joystick as well as 2 switches (only XO 4-2 and XO 4-6)	3.1.3
Joystick on XO Foot Control	The joystick on XO Foot Control	3.3.1
Last Position	The chair position prior to the present position	3.3.1
Pedal	The pedal of XO Foot Control	3.2.1
Rinse Position	Chair position, which gives the patient optimal access to rinse	3.3.1
Spray selection	Combination (not amount) of spray water and spray air	See XO 4 Quick Guide
Unit configuration	The basic configuration of the unit	See XO 4 Configuration Guide
Zero Position of chair	Chair position where the patient enters/exits the chair	3.3.1

**Table 7:** Symbols and glossary



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