

# XO® PERISTALTIC PUMP

## User Guide

YB-634  
Ver. 2.00

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## 1 INTRODUCTION

Your new XO Peristaltic Pump is an add-on peristaltic pump for XO 4 intended for use by dental professionals for supplying sterile irrigation (saline or antimicrobials) when using micro motors, XO Osseo or XO Odontogain.

In your own interest, we kindly ask and recommend that you take the time to study this manual in order to familiarize yourself with XO Peristaltic Pump and its operation.








We are confident that you will find that XO Peristaltic Pump will be a major adjunct to your daily practice.

We thank you for choosing XO Peristaltic Pump.

XO CARE A/S

## 2 SYMBOLS

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

	Warning / caution. Used to emphasize important safety related information about the use of the device.
	Do not reuse. For single use only.
	Sterilized by ethylene oxide.
	EU representative
	Manufacturer
	Date of manufacture
	Dispose in accordance with instructions provided in this manual.

### 3 PRINCIPLE OF OPERATION

XO Peristaltic Pump is an accessory peristaltic pump for XO 4 intended for supplying sterile irrigation to micro motors, XO Osseo and XO Odontogain.

Irrigation liquid is pumped from a reservoir or bag located at the back of the unit to an instrument of the operators choosing by means of the pump and an irrigation tube.

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 between multiple XO 4 units. The pump is automatically detected by the unit when attached. Note that in order for the pump to be used, the unit must be prepared for it (i.e. unit must be equipped with option XO-053).

XO Peristaltic Pump can be used with or without XO Smart Link. When used without XO Smart Link, it is necessary to first select and enable the pump for the chosen instrument using the built-in configuration menu of the unit.


### 4 CONTENT

XO Peristaltic Pump is delivered with the following:

 <p>XO Peristaltic Pump</p>	 <p>Disposable irrigation kit (2x)</p>
 <p>Guide for disposable irrigation tube</p>	 <p>Clips for holding (5x)</p>

#### 4.1 DISPOSABLE IRRIGATION KIT

The irrigation kit consists of 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 handpieces with a single inlet and one for connecting handpieces with two inlets.

	<p><b>RISK OF CONTAMINATION</b></p> <p>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) after the expiration date stamped on the package.</p> <p>Appropriate sterile handling procedures must be observed to ensure and maintain sterile conditions.</p> <p>The disposable irrigation kits are for one-time use only. Do not re-sterilize!</p>
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XO Peristaltic Pump is delivered with two sample disposable irrigation kits. Additional kits can be ordered from your dealer:

XO-055      Pre-sterilized, disposable irrigation kit, 50 pcs.

XO-056      Pre-sterilized, disposable irrigation kit, 10 pcs.


## 5 SETUP, PREPARATION & CONFIGURATION

### 5.1 ATTACHING THE PUMP

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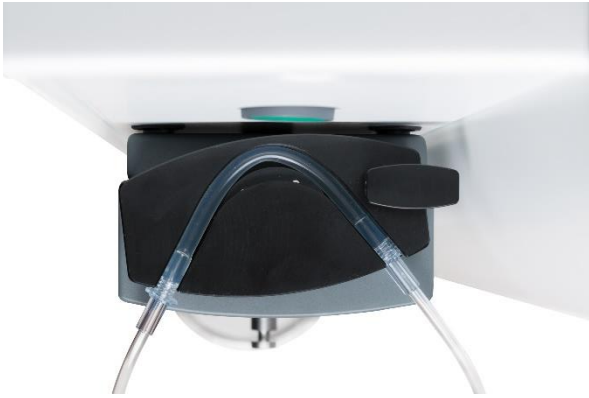
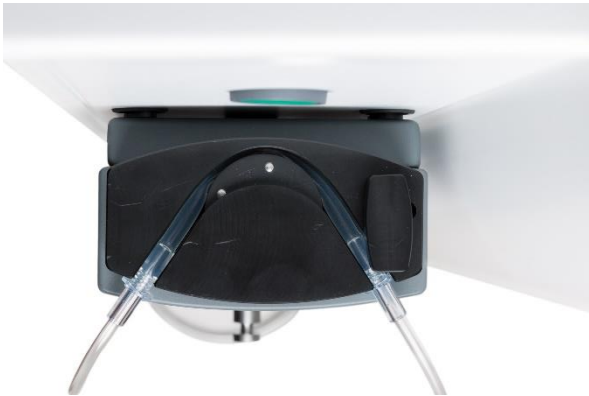
After use, the pump can be safely removed from the unit. It is not necessary to switch off the unit before detaching the pump.

### 5.2 ATTACHING THE IRRIGATION TUBE

	<p><b>RISK OF CONTAMINATION</b></p> <p>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) after the expiration date stamped on the package.</p>
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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!


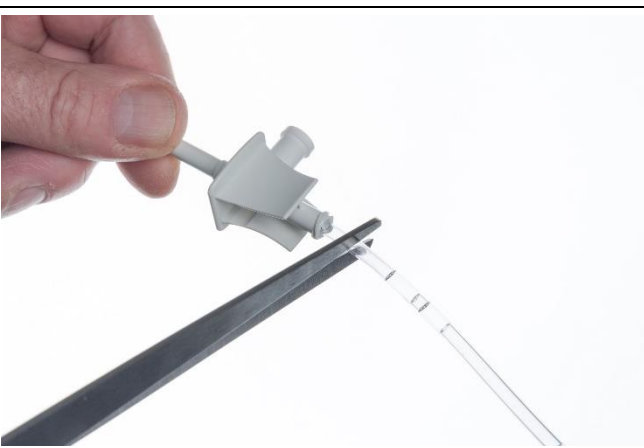
1	Release the pump head by turning the handle counter-clockwise.	
2	Attach the irrigation tubing to the pump head as shown. Make sure the tube is held in place by the two plastic connectors.	
3	Lock the pump head by turning the handle clockwise.	

4	Place the irrigation tube into the tube guide and attach it to the instrument bridge arm, as shown.	
5	Attach the irrigation tube to the hose of the instrument to be used using the stainless steel clips.	


### 5.2.1 IRRIGATION BAG

1	Insert the bag inlet cannula into the irrigation bag and hang the bag containing the irrigation liquid in the knob at the bottom of the pump.	
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**5.2.2 IRRIGATION RESERVOIR**



1	Place the reservoir containing the irrigation liquid in the holder below the pump.	
2	Using an appropriate sterile cutting tool (e.g. a pair of scissors), cut off the irrigation tubing bag inlet cannula. Attach the cut end for the irrigation tubing to the spear and place the spear in the reservoir.	

**5.2.3 MICRO MOTOR OR XO OSSEO**

1	Attach the irrigation tube to the handpiece using one of the two supplied outlets. Choice of outlet depends on handpiece.	
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### 5.2.4 XO ODONTOGAIN


1	Insert the connector piece between the hose and the handpiece (as shown).	
2	Attach the irrigation tube to the connector piece using the appropriate outlet.	

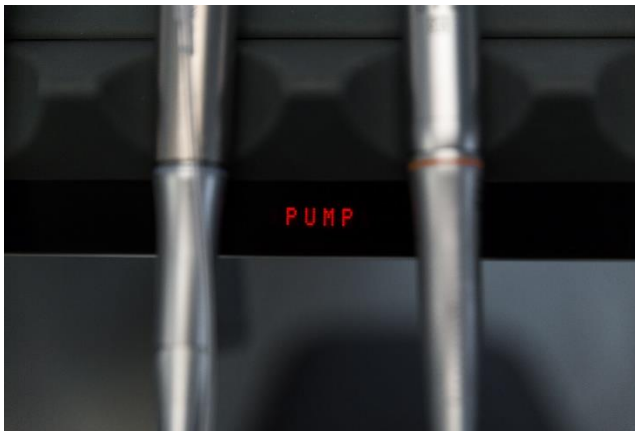
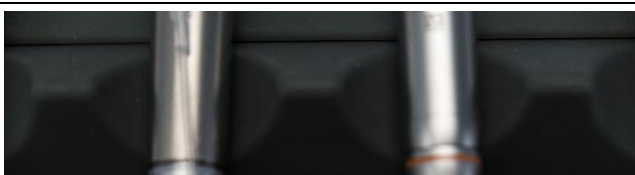


## 5.3 CONFIGURATION

Before the pump can be used, the instrument that is used must be selected.

### 5.3.1 WITHOUT XO SMART LINK

To configure the pump without XO Smart Link, do the following:

1	<p>With all instruments resting, press the button below the instrument bridge once.</p> <p>The unit will enter configuration mode and a menu will be shown on the display.</p>	
2	Use the north and south activations of the foot control joystick to navigate to the menu item labelled "PUMP".	

3	Use the east activation of the foot control joystick to access the configuration of the pump.	
4	Use the north and south activations of the foot control joystick to select the suspension carrying the instrument that should be used with the pump.	
5	Use the west activation of the foot control joystick to confirm the choice of suspension.	
6	Press the button below the instrument bridge once to exit configuration mode.	

Once the instrument has been selected, the green LED will blink at that position.

If you want to use the instrument without the XO Pump again, select “NONE” in the PUMP menu.

### 5.3.2 WITH XO SMART LINK


When using XO Smart Link, the pump is automatically used if specified by the active instrument program. No additional configuration is needed.

Please refer to the XO Smart Link user guide for additional information related to the use and configuration of instrument programs.

## 5.4 ADJUSTING THE FLOW LEVEL

XO Peristaltic Pump uses the normal flow settings for the selected instrument. The flow can be adjusted in three levels using the north and south activations of the foot control joystick.

## 6 CLEANING AND STERILIZATION

	<p><b>RISK OF CONTAMINATION</b></p> <p>The pre-sterilized disposable irrigation kits are for single-use only and must be discarded after use. The tubing must not be re-sterilized.</p>
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<b>XO Peristaltic Pump</b>	Clean and disinfect the surfaces of the pump unit using a cloth with Dürr FD-322. Use a clean piece of cloth.
<b>Tubing clips</b>	Steam sterilization, 134°C/273°F with a hold time of at least 3 min
<b>Spear</b>	Steam sterilization, 134°C/273°F with a hold time of at least 3 min
<b>Tube guide</b>	Thermo-disinfection, 90°C/194°F
<b>XO Odontogain connection piece</b>	Steam sterilization, 134°C/273°F with a hold time of at least 3 min
<b>Irrigation tube</b>	Cannot be re-sterilized!

For all other parts – please refer to XO 4 User Guide.

## 7 SERVICE MESSAGES

Overview of the service messages that may appear on the display, while using XO Peristaltic Pump:

<b>Display showing:</b>	PUMP NOT READY
<b>Reason:</b>	Pump detached or no connection to unit.
<b>Remedial action:</b>	Attach pump correctly.
<b>Display showing:</b>	NO PUMP
<b>Reason:</b>	Pump not connected to the selected suspension/instrument
<b>Remedial action:</b>	Attach pump correctly. Check configuration of the pump.

## 8 MAINTENANCE AND SAFETY

Please observe the following instructions at all times:

1. XO Peristaltic Pump must be operated in accordance with this Manual.
2. XO Peristaltic Pump must only be used by dental professionals. No special training is required.
3. XO Peristaltic Pump and its accessories must not be taken into use, if signs of operational, electrical or mechanical defects are found.
4. XO Peristaltic Pump is engineered to meet the general safety requirements of IEC 60601-1.
5. XO Peristaltic Pump contains no field-serviceable parts. Repairs must only be made by XO CARE A/S or specialists approved by XO CARE A/S.



**WARNING: No modification of this equipment is allowed!**

## 9 ENVIRONMENTAL CONDITIONS

There are no special considerations related to environmental conditions.

Transport and storage conditions:

Temperature: -5 C – 60 C

Relative humidity:

Air pressure:

Operating conditions:

Temperature: -5 C – 60 C

## 10 DISPOSAL

### 10.1 FOR COUNTRIES IN THE EUROPEAN UNION

This product (including the cables, plugs and accessory) must not be disposed of with the other 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.

### 10.2 FOR COUNTRIES OUTSIDE THE EUROPEAN UNION

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

## 11 TECHNICAL SPECIFICATIONS

### Product name:

XO Peristaltic Pump

### Irrigation flow rate:

10 – 90 ml/min.

### Classification:

Class IIa (M.D.D. 93/42/EEC)

### Environmental characteristics:

Transport and storage conditions:

Temperature: -5°C – 60°C  
Relative humidity: 10% - 100%  
Air pressure: 800 hPa – 1060 hPa

Operating conditions:

Temperature: 15°C – 35°C  
Relative humidity: 10% - 100%  
Air pressure: 800 hPa – 1060 hPa

### Manufacturer:

XO CARE A/S

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