X0[®] 4/ X0 FLEX **REPLACEMENT OF BRIDGE PCB, AN-368**

YB-046 Version 1.00

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PREPARATION:

Spare part reference:

Tools :

AN-368 Bridge PCB

Screwdriver, TORX T20 Screwdriver, TORX T10

Cautions:

Always use an ESD wrist strap (UC-600) when handling the unit.





WARNING: IN ORDER TO AVOID ANY RISK OF ELECTRIC SHOCK, DO NOT FORGET TO TURN OFF THE UNIT AND DISCONNECT THE POWER CABLES.

BRIDGE POWER AND SIGNAL CABLE CONNECTIONS

To access the "Bridge PCB" Before removing the bridge top plate Remove all the instrument from the bridge.



Remove the caps MG-175 from both sides of the suspension holder on the instrument bridge



Remove the black protection pad and instrument pad to access the screws place on both sides. (red arrows) Remove the top by gently lifting and sliding it backward.

Beware: Do not pull off the top brutally. An Earth cable connects the top to the base.





The bridge once open



Connect the ESD wrist strap (UC-600) onto the terminal



WARNING: ALWAYS WEAR AN ESD WRIST STRAP WHEN HANDLING SENSITIVE COMPONENTS.

BRIDGE PCB REPLACEMENT

		J31 J21				J32 J22			J33 J23		J34 J24	J35 J25	J12 😯	J36	J26
F1		D19	91 24 VDC			D80)0 _ 24 VA	с			J15 Code c	; hip XO	D110 3.3 V	J14 BATT. CR2032	
\bigcirc	J1 5•••• 1••••	• • J102 • • • • •	wer driver	J4	Scaler J5	J6 • •	J7	J8 ••••	JS	BRID	IGE PCB AN-	-368	•	())11:)
J21	14	2	J22		15	16	J23		J24		-	J25	J2		

Procedure:

Before replacing the Bridge PCB please make a backup of the configuration with your XO Toolbox or XO Firmware updater. Use the SAVE DATA function to save the dentist/technician settings.

Note: If you have no access to these tools, please be aware that you must adjust cooling air, drive air and anti-retract air in technician menu.

Replacement procedure:

- Remove the "red code block" situated on the J15 and place it onto the new bridge PCB
- Remove carefully all the black connectors from the Jumper J31/J21, J22, J23, J24, J25 and J26
- Disconnect the signal cable from J14 RS232 / RS485 Interface
- When done remove the 6 Torx head screws



Lift carefully the Bridge PCB to have access to the connectors underneath Carefully remove the connectors:

- J1 Power cable / See note
- J2 / J3 Power Driver
 - J4 Proportional valve Spray air
 - J5 Scaler
 - J7 Flowmeter
 - J9 Loudspeaker
 - J11 P-button
 - J12 Display



Procedure: Placing the new BRIDGE PCB

Carefully place the following connector first (See the drawing above)

- J1 Main connector / See note
- J2 / J3 Power Driver
 - J4 Proportional valve Spray air
 - J5 Scaler
 - J7 Flowmeter
 - J9 loudspeaker
 - J11 Programming switch
 - J12 Display
- When done place the 6 Torx head screws back
- Reconnect the RS232 / RS485 signal cable to J14
- Reconnect carefully all the black connectors to the Jumper J31/J21, J22, J23, J24, J25 and J26
- Verify that the red code block is placed onto the new board.
- When everything is properly reconnected, execute a test
- Verify the parameter for every single instrument.
- Check and set date if necessary
- Check and set service date if necessary
- To properly set up the suspension PCB's, please see configuration list below

INSTRUCTIONS FOR SAVING/LOADING USER DATA WITH XO TOOLBOX

To save / load user data (configuration) with toolbox, follow these instructions:

- Connect the unit to a PC using an RS-232 serial cable. Make sure that the XO Toolbox software is already installed on the PC.
- 2. Turn on the unit.
- 3. Start the XO Toolbox program:

Locating XO Toolbox

C:\Program Files (x86)\XO CARE\XO Unit Toolbox Click on "XO4.ToolBox.exe"

Click the button (highlight in blue) "Save user data"



Successfully downloading the data. Toolbox will scan all the PC's serial ports to detect the connected XO 4 unit. When the correct port has been detected, the connection is established (automatically) and the user configuration will be downloaded.

🔕 XO Unit Toolbox ve	r. 4.02 >	<
XO Unit	t Toolbox	
Updating tools	_	1
Save user data	Download user data to file.	
Load user dat Dov	vnloading user data	
Upload firmwar)ownloading data	
	Connected to XO 4 on port COM3	
Other tools		
Configure	Start configuration program. Use with firmware 3.40 or later.	
Diagnose	Start diagnostics program. Use with XO 4 firmware 3.51 or later.	
	Close	

Once the data is downloaded, choose a place where to store the data. All file extension has to be *.xo4

Save user data	3 Open				>
	← → · ↑ 🗄 > T	his PC > Documents	✓ Ŏ Searc	th Documents	P
Load uper data	Organize 👻 New fol	ler		III - 🔲	0
Upload firmware	This PC	Name	Date modified 8/14/2019 3:41 Ph	Type VI File folder	Siz
thertools	Desktop	Free Serial Port Monitor	8/14/2019 2:57 PM 8/27/2019 10:46 4	M File folder	
Configure	Documents	dr.xo4	11/17/2020 11:10	XO4 File	
Diagnose	Music				

 image: dr.xo4
 11/17/2020 11:10 XO4 File

 v

 File name:
 dr.xo4

 V
 XO 4 user data files (*.xo4)

 Open
 Cancel

🤓 XO Unit Toolbox ver. 4.02

When the new Bridge PCB has been installed, click the button (highlight in blue) "Load user data"

Example "dr.xo4"

Save user data	Download user data to file.								
Load user data	Upload user data from file.								
Upload firmware	Start program for uploading firmware.								
her tools									
Configure	Start configuration program. Use with firmware 3.40 or later.								
Diagnose	Start diagnostics program. Use with XO 4 firmware 3.51 or later.								
	Close								
	11/17/2020 11:10 XO4 File								
dr.xo4									
dr.xo4									

Select the file and acknowledge by clicking "Open" Once the data has been successfully transferred, an acoustic signal is emitted. \times

"TECHNICIAN MENU"

		Cusp. Cl.	Disable / Enable cuspidor clean
Technicia	an Adjustments XO4 & XO FLEX	Pump	Ext. péristaltic pump (Susp. Select. (None or 2 to 6)
	Ver. 3.40	Flush S	Flushing cuspidor session in seconds
All in	struments in rest position /	Cup S	Filling cup session in seconds
	Press 2 x C-button	Flush Ch	Disable / Enable flush cuspidor (Rinse pos.)
		Flush CF	Disable / Enable Flush cup
L L	onfirm	Lamp Ch	Disable / Enable light on chair (Working position 1 or 2)
	Menu	Lamp Pd	Disable / Enable light on pedal
UNIT	General Adjustments control peda	Reset	Reset dentists data to default
	<	Light	Adjustment Display luminosity
Chair	Rinse = 0 (Zero position)	Sound	Adjustment Sound level (Loud Speaker)
	Pos 1 - 2 H/L (Working pos. Chair High/Lov Rinse H/L (Rinse Position chair)	v) Time	Change time
	Zero H/L(Out Position High/Low) Count H/L	Day	Change day
Ļ	AD-6xx firmware version for all PCBs	Month	Change month
Motor	Max Speed level 1-3 Max Water Level 1-3	Year	Change year
	Spray air adjustment in % Chip blow disable / enable	S Day	Change Service day.
	Sélection 4 states	S Month	Change Service month
Ļ	Fiber: Fibre optic intensity adjustment	S Year	Change Service year
Turbine	Max Air level 1-3	Resetall	YES / NO - Reset all data
	Spray air adjustment in % Chip blow disable / enable	Suc 1.01	AD-623 Vers 1.01 Disable / Enable (Always enable)
	Drive Air max Drive Air min	Susp 1-6	Suspension Configuration - Pos. 1 to 6)
	Anti Retract air Fiber: Fibre optic intensity adjustment	SPCB 1-6	Suspension PCB Selection - Pos. 1 to 6
Scaler	Max Amplitude 1-3	Savedata	Save all settings on dongle
I	Max Water level 1-3 Cool Air	Loaddata	Load old settings from dongle
Ļ	Fiber: Fibre optic intensity adjustment	Flow 2.0	Always "ENABLED", New "Flow control" version
LC Lamp	Activation time level 1-3 Changer chime Option	Scaler T	Scaler type Select (EMS, SATELEC, ODONTOSON)
	Soft start 1 - 300s	Water Cl.	Disable / Enable Water dean (Must be installed)
Osseo	Max Speed level 1-3 Max Water level 1-3	Suct Cl.	Disable / Enable Suction clean (Must be installed)
Enter	T	Cusp. Cl.	Disable / Enable cuspidor clean
	Control Pedal	3. Suct	Disable / Enable 3. suction (never used)
Confirm]	Restart	Only used by XO staff. Never use in general

"SUSPENSION CONFIGURATION"

Configuration & Adjustments

	Instrument																		
			Motor Scaler Oth								her	her							
Parts in configuration	To be selected in Technician menu "SPCB 1-6"	MX	MX2	MC3/MC3LED/M40LED	OSSEO	Odontoson	Satelec	Satelec w. light	EMS "No Pain" w.& wo. light	EMS Piezon w. light	EMS Piezon wo. light	Odontosurge	LC lamp Lysta	LC lamp Odontocure	Camera Vistacam HD Smart	Camera Vistacam iX HD	Camera Vistacam iX	Turbine	Syringe
Suspension PCBs																			
AN-510	AD-605				а	x			x	x	X		а						x
AN-511	AD-605				x								x						
AO-318	AD-654	x		а	а	а	а		а	а	а		а					а	а
AO-319	AD-655											x							
AO-328	AD-654		x	x	а	а	а		а	а	а		а					x	
AO-329	AD-655																x		
AO-347	AD-655															b			
AO-348	AD-655														x	с			
AO-988	AD-605						x	x											
AP-866	AD-605													x					
Valves																			
Spray air		х	X	X						X								X	*
Spray water		х	x	x		x	x		x	x	x							x	*
Drive/cooling air		x	x	x														x	*
Suspension cables																			
CA-100																			x
CA-101		x	x	x	x	x				x	x	x	x	x	x	x	x	x	
CA-109							x	x	x										
Instruments "SUSP 1-6"																			
Syringe																			x
Motor		x	x	x	x														
Turbine																		x	
OSU/Video												x			x	x	x		
LC Lamp													x	x					
Scaler						x	x		x	x	x								
"SCALER T"					•	•				•		•	•	•	•		•	·	
OSO 7						x													
EMS C51									X		x								
EMS C51L										X									
SATELEC							x	x											

x: factory mounted a: also OK for spare part

b: version wo. USB connector in bayonet

*: start block, always configured with four valves c: version with USB connector in bayonet