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COXO®



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COXO®

USER MANUAL

PT EX

PT EX

Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T for 0.5 Period (>95% interruption) 40% U_T for 5 Period (>60% interruption) 70% U_T for 25 Period (>30% interruption) <5% U_T for 5s (95% interruption)	<5% U_T (>95% dip in U_T.) for 0.5 cycle <5% U_T (>95% dip in U_T.) for 1 cycle 70% U_T (30% dip in U_T.) for 25/30 cycles <5% U_T (>95% dip in U_T.) for 5/6 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the instrument requires continued operation during power mains interruptions, it is recommended that the instrument be powered from a uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: U_T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration - electromagnetic immunity			
The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted RF IEC 61000-4-6	3V rms 150kHz to 80MHz 6V rms in ISM bands and amateur radio bands	3V rms 150kHz to 80MHz 6V rms in ISM bands	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 device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result. If higher IMMUNITY TEST LEVELS than those specified in Table 9 are used, the minimum separation distance may be lowered. Minimum separation distances for higher IMMUNITY TEST LEVELS shall be calculated using the following equation:E=[6/d]×P½ Where P is the maximum power in W, d is the minimum separation distance in m, and E is the IMMUNITY TEST LEVEL in V/m.
Radiated RF IEC 61000-4-3	3V/m 80 MHz to 2.7 GHz 385 MHz-5785 MHz Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment (Refer to table 9 of IEC 60601-1-2: 2014+A1: 2020)	3V/m 80 MHz to 2.7 GHz 385 MHz-5785 MHz Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment (Refer to table 9 IEC 60601-1-2: 2014+A1: 2020)	

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This manual applies to the following models: PT EX A, PT EX B, and PT EX C.
System configurations vary by model, and some sections apply only to specific models.
Please refer to the table below to identify the sections relevant to the model you purchased and skip any content that does not apply.

Model	Included systems	Sections that can be skipped
PT EX A	Ultrasonic System + Air Polishing System (Prophy + Perio)	None (All sections apply)
PT EX B	Ultrasonic System + Air Polishing System (Prophy)	5.6 Subgingival Nozzle 6.4.3 Subgingival Air Polishing Procedure
PT EX C	Air Polishing System Only (Prophy + Perio)	6.3 Ultrasonic System

Number	Name	Length(m)	Shielding
1	Power cord	1.5	No
2	Adapter cable	1.5	No
3	Handpiece cord	1.8	No
4	Wired pedal cable	1.8	No

Guidance and manufacturer's declaration -electromagnetic emission

The device is intended for use in the electromagnetic environment specified below.
The customer or the user of the device should assure that it used in such an environment.

Emission test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The device use RF energy only for their internal function. Therefore, their RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The device is suitable for use in all establishments other than domestic and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration - electromagnetic immunity

The device is intended for use in the electromagnetic environment specified below.
The customer or the user the device should assure that they are used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge(ESD) IEC 61000-4-2	±8kV contact ±2kV, ±4kV, ±8kV, ±15kV air	±8kV contact ±2kV, ±4kV, ±8kV, ±15kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2kV for power supply lines ±1kV for Input/output lines	±2kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±0.5kV, ±1kV line-to-line ±0.5kV, ±1kV, ±2kV line to ground	±0.5kV, ±1kV line-to-line	Mains power quality should be that of a typical commercial or hospital environment.

13. After-sales service

1) The control unit and handpiece are guaranteed for 24 months from the date of purchase, and the accessories (adapter) are guaranteed for 6 months. The rest of wearing parts and accessories are not guaranteed.

2) The following conditions are not covered by the free warranty:
- Damage caused by human causes;
- Force majeure causes damage;
- User's unauthorized alteration, dismantling or maintenance;
- Any damage caused by not using and maintaining according to the instructions;
- Failure or damage caused by forced use of the product beyond the normal conditions of use.

3) The supplier can provide, upon request, circuit diagrams, component lists, notes, calibration specifications, or other information necessary to assist the user's qualified technicians in the repair of parts of the equipment which are designated as repairable by the manufacturer.

14. Recycling and disposal of waste



The device and its packaging are designed to be as environmentally friendly as possible.
In accordance with the principles, standards, and requirements of the country (region) in which you are located. When disposing of the old electrical instrument ensure that pollution is not produced in the process of waste disposal.

15. Guidance and manufacturer's declaration -- EMC

This instrument needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided, and this instrument can be affected by portable and mobile RF communications equipment.

⚠ Caution

- Do not use a mobile phone or other instruments that emit electromagnetic fields, near the instrument. This may result in incorrect operation of the instrument.
- This instrument has been thoroughly tested and inspected to assure proper performance and operation!
- This instrument should not be used adjacent to or stacked with other instrument and that if adjacent or stacked use is necessary, this instrument should be observed to verify normal operation in the configuration in which it will be used.

1. Safety

⚠ General warning

Carefully read this manual before installation, use, maintenance, or other operations on the device.Always keep this manual within reach.

In the event of a serious adverse event, please report to the manufacturer and the competent authority of the member state in which the user and/or patient is established immediately.

1) Do not handle the power cord with wet hands. Contacting electrical components with wet hands may result in electric shock.
2) Keep away from explosive substances and flammable materials.
3) If the product overheats or smells of burning, immediately turn off the power and disconnect the main power cord.
4) Be careful not to get water or liquid disinfectant in the Control Unit. This could cause short circuits and lead to fire and/or electric shock.
5) Always use the water supply. Insufficient water supply results in overheating, which may damage the surface of the patient's tooth.
6) During use, both the operator and the assistant should always wear protective glasses and protective face masks. Also , continuously vacuum and collect ejected powder during use. If any powder gets into the eyes, rinse the eyes immediately with copious amounts of water and consult an ophthalmologist.
7) Set the supply air pressure to 0.55-0.8 MPa and use clean, dry air. Using with the incorrect pressure may result in insufficient spray pressure (power), inoperability or malfunction.
8) Do not spray directly onto the cement in the root canal, decalcified enamel, filling, margin of a prosthesis or filling.
9) Make sure the compressed air supply is clean and dry. Water or oil content mixed in the air supply may cause solidification of the cleaning powder inside the product.
10) The device must be used within the scope mentioned in this manual. If the user fails to operate the device in accordance with the manual or uses the device for other purposes, the Company or the authorized Distributor shall not be liable.
11) The use of the device is restricted to qualified medical and technical personnel and trained professionals.
12) Do not make any modifications to this device.
13) Use the original parts and contact the manufacturer or authorized dealer for purchase and replacement if the parts are damaged.
14) Please check the integrity of the nozzle and the tightness of the package. Do not use it if it is damaged.
15) Keep the device clean before and after use.
16) Allow the device to run under water for 10 seconds before each operation to remove residual water in the pipe.
17) The scaler tips must be tightened during use. When the scaler tip is damaged or worn, the vibration intensity will decrease. The user should replace the scaler tips in time.
18) Do not bend or polish the scaler tips.
19) Be very careful to ensure cleaning powder does not enter the patient's mucosal areas (eyes, nose, etc.)other than the oral cavity. Also, protect the face with a towel or protective glasses, etc., to prevent the cleaning powder from getting into the patient's eyes.
20) Before connecting the handpiece cord, Chamber and handpiece, be sure to blow off all water from the connections with dry air. Failure to do so may result in moisture entering the air supply, causing solidification of the cleaning powder inside the product.

21) Do not use unclean water sources.
22) Do not pull hard on the handpiece cord to avoid damage.
23) Do not knock or scratch the handpiece.
24) The device has electromagnetic interference and should not be used in the vicinity of a pacemaker or electronic surgery.
25) Both electromagnetic fields and unstable voltages can interfere with the normal operation of the device.
26) In order to avoid electric shock injury, the device must be connected to the power supply network with protective ground.
27) The device isn't intended for use in areas such as operating theatre emergency rooms.
28) Time to contact unit enclosure, power supply cord, power switch, rotary knob, screen, adapter and applied part is less than 1min.
29) Control unit and power cord shall not be serviced or maintenance during normal treatment.
30) The device is not provided sterile and must be cleaned, disinfected, and sterilized in strict accordance with Chapter 10.
31) The device has a service life of 15 years and the date of manufacture is detailed on the label.

2. Intended use

This product is intended only for use in the field of dentistry, for surgery to tooth surface cleaning, removal of foreign substances;

The device is only used in dental clinics or hospitals.

3. Contraindications

Do not use on the following patients:

- Patients with pacemakers or other implanted electronic devices who are advised not to use small electrical appliances(such as electric razors, hair dryers, etc.)
- Hemophilia patients;
- Pregnant women, children, photo allergies and patients with a history of retinal disease;
- Patients with respiratory diseases such as asthma and chronic bronchitis;
- Those who have preexisting conditions(E.g. Cardiac, Pulmonary, Renal disturbance or High blood pressure).

12. Symbols

	Caution		General warning
	NOTE		Refer to instruction manual/ booklet
	Type B applied part		Thermo disinfectable
	Keep dry		Fragile, handle with care
	This way up		Sterilizable in a steam sterilizer at 134℃
	Direct current		Indoor use only
	Do not dispose of the product into the ordinary municipal waste or garbage system		Serial number
	Foot switch		Alternating current
	Batch code		Catalogue number
	Manufacturer		Date of manufacture
	General symbol for recovery / recyclable		Medical device
	Importer		Stacking limit by number

10. Operating, transport and storage environment

Operation environment	
Ambient temperature	+5℃ - +30℃
Relative humidity	20%RH - 80%RH
Air pressure	80kPa - 106kPa
ALT	≤ 2000m
Transport and storage environment	
Ambient temperature	-10℃ - +55℃
Relative humidity	≤ 93%RH
Air pressure	50kPa - 106kPa

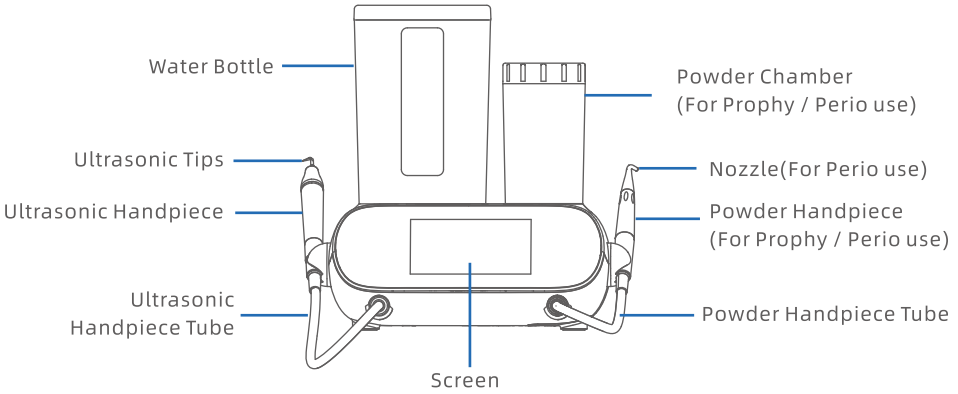
11. Technical specifications

Adapter	Input: AC 100-240V 50/60Hz
	Output: DC30V, 2.4A
Input power	150VA
Operating mode	Continuous operation
Degree of Protection (IEC 60529)	Control unit (IPX0)
	Foot pedal (IPX4)
Classified by how safe it is to use in the case of flammable anesthetic gas mixed with air or nitrous oxide	Non-AP/APG type
Application part	Handpiece, Scaler tip
Protection against electric shock	Type B
Classification of protection against electric shock	Class I (Adapter)
Scaler tips vibration offset	<150μm
Scaler tips vibration frequency	24-36kHz
Output power of tip	3-20W
Half offset force	≥0.5N
Input pressure	0.55-0.8 MPa
Over voltage category	Class II
Pollution Degree	Degree 2

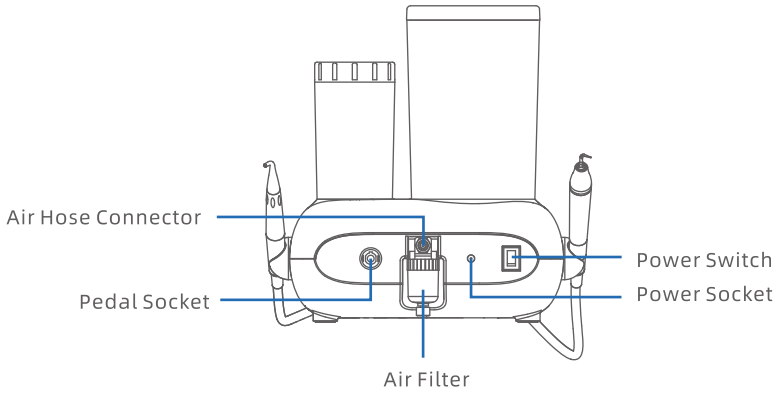
4. Description

(This section is described based on the PT EX A full-configuration model.)

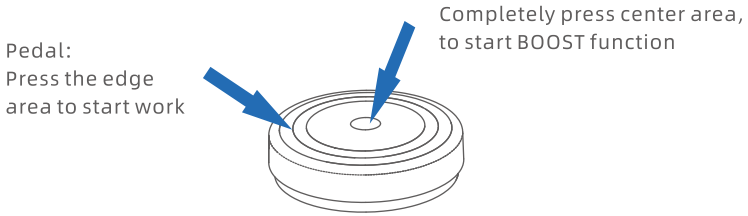
Front



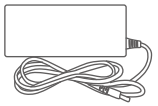
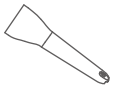
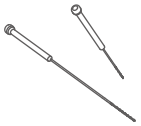
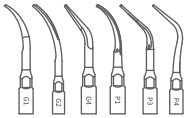
Rear



Foot Pedal



Other accessories

			
Power Cord	Adapter	Powder Tube	Nozzle (For Perio Use)
			
Flat Needle	Three-way Connector	Air Filter	Air Hose
			
Powder Handpiece Tube	Unlocking Tool	Spanner Wrench (For Nozzle)	Spanner Wrench (For Air Filter)
			
Torque Wrench	Tip Holder	Silicone Plug	Scaler Tips
			

Spare O-Rings
Water Bottle: Φ12 × 1
Powder Handpiece: Φ3.5 × 1.5 / Φ8 × 1.5 / Φ0.8 × 0.4
Ultrasonic Handpiece: Φ1.35 × 1

Low air polishing efficiency	Powder handpiece is blocked	Use a needle to clean the passage and blow it clean with compressed air (Detail in “unclogging guide”)
	Powder chamber is blocked	Use a needle to clear the outlet and intake of the powder chamber, blow it clean with compressed air (Detail in “unclogging guide”)
	Control unit internal pipeline is blocked	Use a needle to clear the outlet and intake of the powder chamber (Detail in “unclogging guide”)
	Powder handpiece tube is blocked	Use a needle to clear the outlet and intake of the powder chamber (Detail in “unclogging guide”)
	Solenoid valve failure	Contact your local distributor
	No air supply	Check the air source connection

9.2. Error code

Error description	Possible causes	Solution
E1: Screen communication interrupted	• Main control circuit failure • Abnormal connection between the screen and main board	Turn off the power and restart the device.
E2: Ultrasonic communication failure	Abnormal connection between the ultrasonic module and main board	Turn off the power and restart the device.
E4: Handpiece detection error	• Handpiece not removed • Holder detection failure	Take either handpiece before operation.
E5: Handpiece detection error	• Both handpieces removed simultaneously • Holder detection failure	Return either handpiece to the holder before operation.
E6: Air supply not detected	• Air pressure detection failure • Compressed air not connected	Check the air supply.
E7: Ultrasonic handpiece not detected	• Ultrasonic handpiece damaged • Ultrasonic handpiece not connected	Reconnect the ultrasonic handpiece.
E8: Bluetooth pairing timeout	• Weak Bluetooth signal from the foot pedal • Low foot pedal battery	Re-pair the foot pedal (Details in section 5.6.2). Replace the foot pedal batteries.
E9: Bluetooth error	Bluetooth module failure	Turn off the power and restart the device.
E0: Low battery of wireless pedal	Foot pedal batteries depleted	Replace the foot pedal batteries.

After following the steps above, if the problem persists, please contact your dealer or our company for repairs.

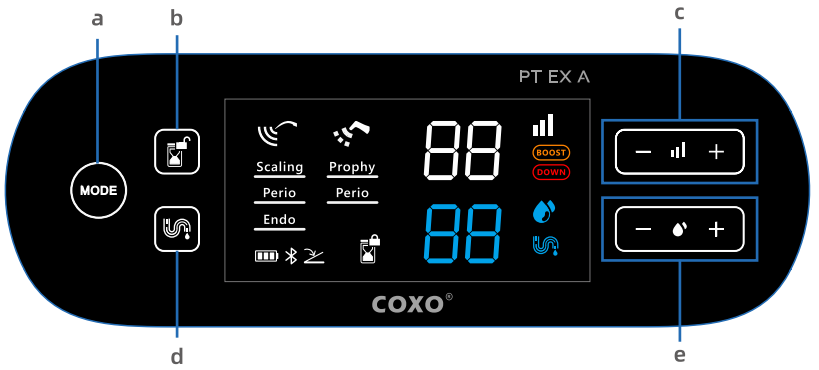
9. Troubleshooting

9.1. Troubleshooting

Malfunction	Possible causes	Solution
Non-functional device	Power cord not plugged in properly	Check the power plug
	The power switch is not turned on	Turn on the power
The pedal doesn't work when press it	The battery has run down	Replace the battery
	Wireless pedal failure	Re-pair
	Bad contact of wired pedal	Reconnect
Air/water leakage of handpiece	The spare O-ring is damaged	Replace the O-rings
Ultrasonic handpiece overheating	Insufficient coolant	Increase the water flow
The ultrasonic handpiece LED light is not on	LED light damage	Replace the LED light
Abnormal working of the scaler tips (such as reduced vibration, no water coming out, etc.)	The scaler tip is loose	Tighten it with torque wrench
	The scaler tips is damaged	Replace with a new one
	Blocked waterways cause tips not to come out of the water	Unblocking with three-way syringe
Air polisher does not dispense powder	Insufficient powder	Increase the powder flow
	Residue of powder in the powder handpiece	Use a needle to clean the passage and blow it clean with compressed air
	Powder absorbs moisture and clumps	Replace with a new powder
	Air source pressure is too low	Ensure that the pressure meets the requirements of the machine
Air leakage of powder chamber	There is powder residue at the mouth or cap thread or the thread is not screwed in place	Clean the remaining powder and blow dry with compressed air
Water bottle leaks	The spare O-ring is damaged	Replace O-ring
The control unit bottom leaks powder	powder tube of the control unit bottom is broken	Contact your local distributor to replace the powder tube (Details in section 8.2)

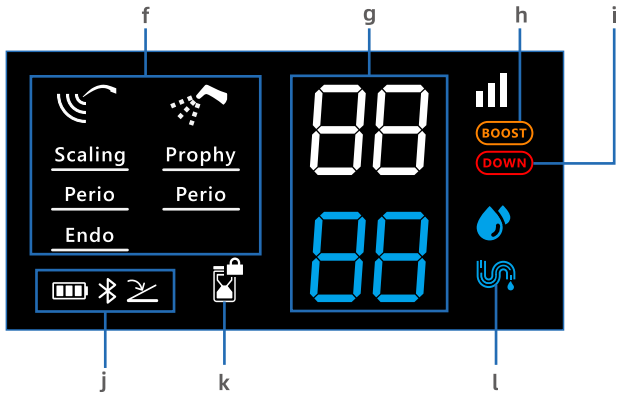
Control Panel

Button Functions



	Button Name	Short Press	Long Press
a	MODE Mode Button	Switch current mode	Switch between ultrasonic and air polishing systems
b	Pressure Release Button	Release powder bottle pressure	/
c	Power / Powder Adjustment Button	Adjust power or powder level	Bluetooth foot pedal pairing (press "+" and "–" simultaneously and step on the center of the foot pedal)
d	Cleaning Button	Start tubing cleaning	Air output only, used for powder blockage clearing
e	Water Adjustment Button	Adjust water level	/

Note: "/" indicates that the button has no long press function.



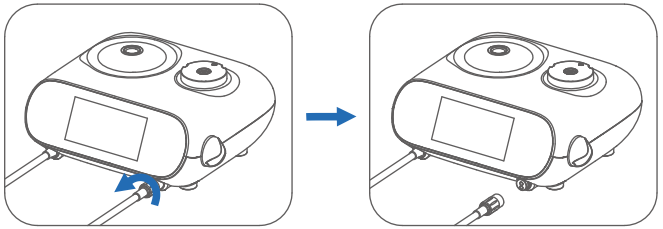
	Display Content	Description
f	System and Mode	Ultrasonic system: Scaling (Supragingival Scaling), Perio (Periodontal Treatment), Endo (Root Canal Treatment)
		Air polishing system: Prophy (Supragingival Polishing), Perio (Subgingival Polishing)
g	Level	White values indicate the power or powder level; blue values indicate the water level.
h	BOOST	Pressing the center of the foot pedal temporarily increases the power or powder level by one step. Release the pedal to return to the previous setting.
i	DOWN	The input air pressure is lower than the required setting value.
j	Foot Pedal Connection	No icon displayed: No foot pedal connected : Wired foot pedal connected : Wireless foot pedal connected : Wired and wireless foot pedals are connected simultaneously. The wired foot pedal has priority.
k	Powder Bottle Lock	When the icon is displayed, the powder bottle is under pressure. Release the pressure before removing the powder bottle.
l	Tubing Cleaning	When the cleaning icon and countdown are displayed, the device is performing tubing cleaning.

8.3. Replace the powder handpiece tube

If the powder handpiece tube is damaged, powder will leak out, and the tube must be replaced.

Removal: Unscrew the handpiece tube connector counterclockwise to remove it.

Installation: Align the handpiece tube connector with the control unit connector, then screw the handpiece tube connector clockwise to secure it in place.

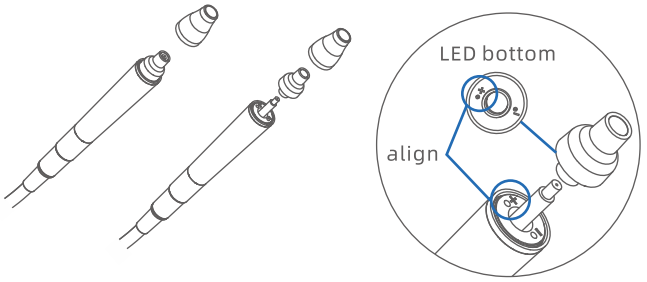


Note

- The powder handpiece tube is a consumable component. Prolonged use may cause damage to the internal powder delivery hose, requiring replacement of the tubing.
- Each powder handpiece tube assembly is expected to support more than 400 air polishing procedures.
- To prevent blockage of the powder handpiece tube, press the button to flush the tubing after use. (Details in section 6.5).

8.4. Replace the LED light

Unscrew the top cover of the handpiece, remove the LED light, and align the "+" on the LED light with the "+" on the handpiece before inserting it.



8.5. Replace spare O-ring

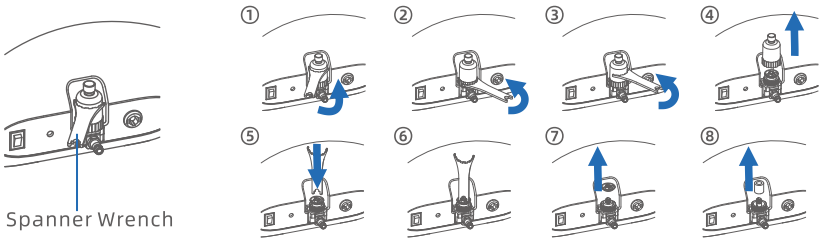
This product comes with handpiece O-rings and water bottle O-rings. When there is water leakage in the handpiece, check the O-ring in time. If damaged, replace it in time.

8. Maintenance

The following maintenance of this product may be performed by a qualified doctor or nurse practitioner.

8.1. Replace the air filter

Air filters are primarily used to remove dirt, rust particles, dust, oil, and moisture from the air. It is recommended to replace them every 24 months. Follow these steps:
Use the spanner wrench to remove the filter, then unscrew the filter housing cap with the wrench to replace the filter.

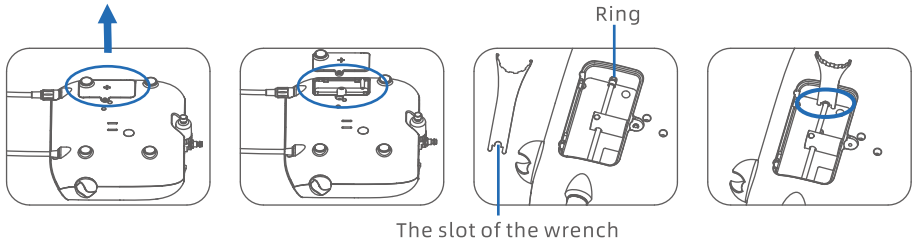


8.2. Replace the powder tube

The powder stop valve compartment at the bottom of the control unit contains the powder stop valve and the powder tube. The powder tube is a consumable component. After prolonged use, operation of the powder stop valve may cause wear or damage to the tube. Replace the tube if damaged.

Removal: Unscrew the screws to remove the bottom cover of the control unit, pry open the powder tube ring, use the slot of the wrench to grip the ring, pry the ring off, and then remove the damaged powder tube.

Installation: Thread the powder tube through the powder trap valve, attach the tube ring, align it with the powder tube fitting, and slide the ring onto the fitting.



Note

- If powder leakage is observed at the bottom of the device, replace the powder tube.
- Expected service life of the powder tube: more than 5 years when used once per day; more than 1 year when used 5 times per day.

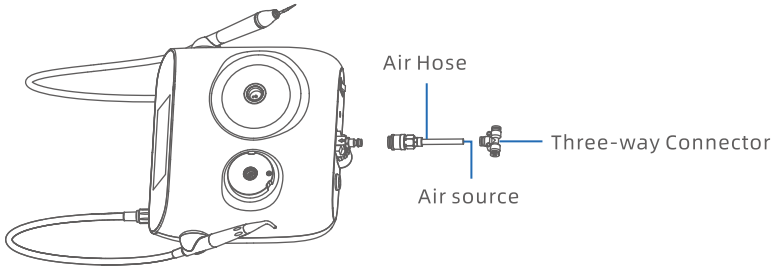
5. Installation

Caution

- If any parts are damaged, it is recommended to buy the original parts.
- Please do not position the device to make it difficult to operate the disconnection device.

5.1. Air hose

1) Insert the end of the air hose with the connector into the compressed air port on the rear of the control unit;
2) Connect the other end of the air hose to the air source;
3) If you need to share the air source with other device, use an adapter (such as a three-way connector.) for connection.



Note

- Input pressure range is required to be 5.5 bar-8.0 bar(0.55 MPa-0.8 MPa).
- Connect the air hose before turning on the air source to avoid improper connection or difficulty in insertion due to air pressure.

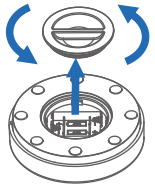
5.2. Pedal

This device is compatible with both wireless and wired pedals (sold separately).

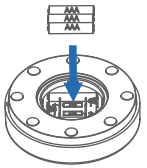
5.2.1. Wireless pedal

Before first use, install the batteries as follows:

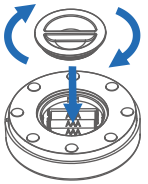
Unscrew the cover clockwish



Put into the battery



Tighten the cover clockwish

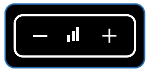


Note

- The wireless pedal requires 3 AAA batteries. Ensure correct polarity during installation.
- When using the wireless pedal, the foot pedal cable must be disconnected.

5.2.2. Re-pairing the wireless pedal

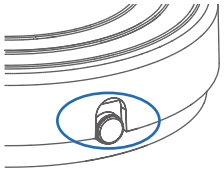
Press "+" and "-" on the  simultaneously, then press the center of the foot pedal.  flashes to indicate that pairing is in progress;  indicates that the wireless pedal is connected.

To cancel pairing, press "+" and "-" on the  again.

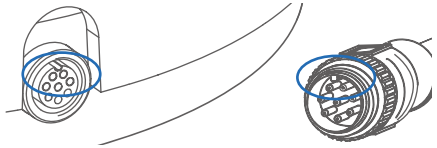
5.2.3. Wired pedals (sold separately)

Installation:

1) Take off the rubber plug on the rear.



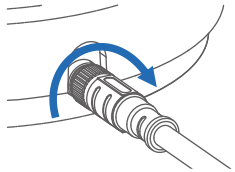
2) Align the protrusion on the foot pedal cable with the notch above the connector port, then insert the cable into the foot pedal.



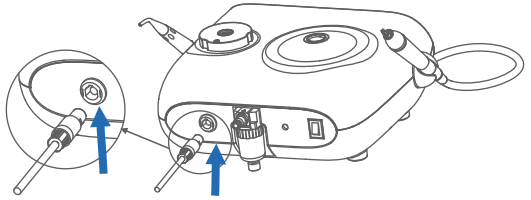
Drying:	Automated Drying: Drying the products through drying cycle of washer/disinfector. If needed, additional manual drying can be performed through lint free towel. Insufflate cavities of products by using sterile compressed air.
Functional Testing, Maintenance:	Visual inspection for cleanliness of the products and reassembling, if required. All products should be checked again for dryness. After cleaning and disinfection, a thorough inspection and maintenance ensures that the products are fit for use. -Check that the product has no dents, cracks, deformations, scratches, etc.; -Check all markings on the product for clear visibility. Discard and replace any components as necessary. Do not use the device with following defects: material deformation, cracks on the product, brittle or other change in the material, etc.
Packaging:	Pack the products in an appropriate packaging material for sterilization. The packaging material and system refer to EN ISO 11607.
Sterilization:	Sterilization of products by applying a fractionated pre-vacuum steam sterilization process (according to EN 285/EN ISO 17665) under consideration of the respective country requirements. Following sterilization parameters are commonly used: 134℃, 5 min (standard program in EU) Drying time: For steam sterilization,we recommend a drying time of 20 to 40 minutes. Choose a suitable drying time, depending on the autoclave and load. Refer to the autoclave's instructions for use. After sterilization: Remove the product from the autoclave. Let the product cool down at room temperature for at least 30 minutes. Do not use additional cooling. Check that the sterilization wraps or pouches are not damaged.
Storage:	Storage of sterilized instruments in a dry, clean and dust free environment at modest temperatures, refer to label and instructions for use.
Reprocessing validation study information:	-Foshan COXO_Cleaning Disinfection Validation Report, Report No.:MDS-RECD-230809-222 -Foshan COXO_Sterilization Validation Report, Report No.:MDS-RES-230809-223 -Foshan COXO_Sterilization Validation Report, Report No.:MDS-RES-230809-224

	Do not sterilize the control unit. The control unit cannot be cleaned and disinfected in a washer/disinfector. For these parts, only a general wipe decontamination is possible!
Decontamination of other parts than Powder Handpiece, Ultrasonic handpiece, Scaler tips, Spanner wrench, and Torque wrench:	After operation, take out the control unit on the workbench. Soak a soft cloth completely with distilled water or deionized water, and wipe all the surfaces of these components, until the surface of the components is visually clean. For decontamination,soak a dry soft cloth with 75% alcohol or other disinfectants which are approved for its efficacy by VAH/DGHM-listing, CE marking, FDA and Health Canada Approval. Wipe all surfaces of control unit and other components with the wet soft cloth for about 3 minutes. Please follow the instructions of manufacturer of disinfectants. Wipe the surface of the component with a dry soft lint-free cloth.
Pre-Cleaning of Powder Handpiece, Ultrasonic handpiece, Scaler tips, Spanner wrench, and Torque wrench:	Following instructions are only relevant for powder handpiece, ultrasonic handpiece, scaler tips, spanner wrench, and torque wrench! Do not use automated cleaning, disinfection and sterilization for other parts than powder handpiece, ultrasonic handpiece, scaler tips, spanner wrench, and torque wrench in this system! Do a manual pre-cleaning, until the instruments are visually clean. Submerge the instruments in a cleaning solution and flush the lumens with a water jet pistol with cold tap water for at least 10 seconds. Clean the surfaces with a soft bristle brush.
Cleaning:	Regarding cleaning/disinfection, rinsing and drying, it is to distinguish between manual and automated reprocessing methods. Preference is to be given to automated reprocessing methods, especially due to the better standardizing potential and industrial safety. Automated Cleaning: Use a washer-disinfector meeting the requirements of the ISO 15883 series. Put the instrument into the machine on a tray. Connect the instrument with the WD by using suitable adapter and start the program; • 4 min pre-washing with cold water (<40°C); • Emptying • 5 min washing with a mild alkaline cleaner at 55°C • Emptying • 3 min neutralising with warm water (>40°C); • Emptying • 5 min intermediate rinsing with warm water (>40°C); • Emptying The automated cleaning processes have been validated by using 0.5% neodisher MediClean forte (Dr. Weigert). Note: according to EN ISO 17664, no manual reprocessing methods are required for these devices. If a manual reprocessing method has to be used, please validate it prior to use.
Disinfection:	Automated Thermal Disinfection in washer/disinfector under consideration of national requirements in regards to A0 value (see EN 15883); A disinfection cycle of 5 min at 90°C has been validated for the device to achieve an AO value of >3000. Here we suggest a disinfection cycle of 5min disinfection time at 93°C.

3) Tighten the screw on the foot pedal cable clockwise to secure it.



4) Align the plug with the foot pedal port on the rear of the control unit and insert it. A "click" indicates successful connection.

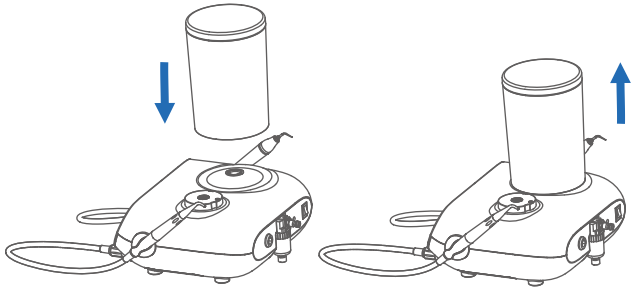


Removal: Disconnect the foot pedal cable from the control unit.

5.3. Water bottle

Installation: Insert the filled water bottle vertically into the water bottle port.

Removal: Pull the water bottle straight up to remove it.



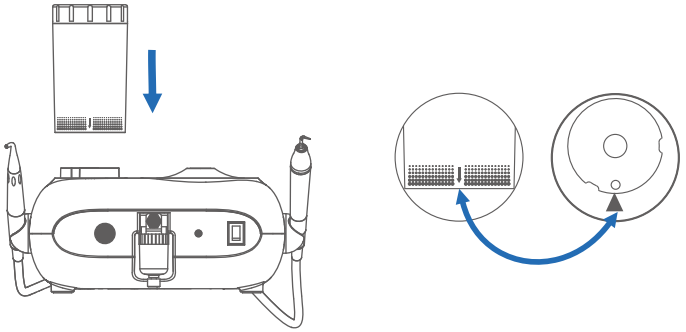
Note

Do not exceed the maximum scale of water bottle.

5.4. Powder chamber

Installation: Insert the filled powder chamber into the control unit, aligning the arrow on the base with the triangle mark on the unit.

Removal: Press the button to release pressure , then pull it straight up.



Note

- The amount of powder should be controlled between MIN and MAX;
- Please keep the powder chamber and powder dry;
- It is easy to be damp if powder exposed to the air for a long time, and using damp powder is easy to cause blocking;
- The powder chamber should be kept dry, otherwise the powder is easy to be damp and caked.

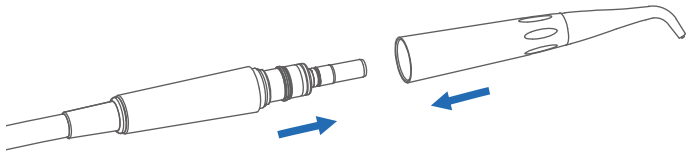
Caution

Do not remove the powder chamber without releasing the internal pressure. The chamber lid cannot be opened while pressurized. Forcing removal may cause powder to be ejected, resulting in injury.

5.5. Powder handpiece

5.5.1. Powder handpiece

Installation: Insert the handpiece directly into the handpiece tube.
Removal: Pull in the opposite direction to remove it.



7. Cleaning, disinfection and sterilization

Device:	Control unit and foot pedal.
Warning:	Do not use automatic methods to clean and disinfect the control unit and foot pedal. Do not sterilize the control unit and foot pedal.
Surface cleaning and disinfection:	It is recommended to clean and disinfect the control unit and foot pedal surfaces with 75% alcohol at least once a month; • Soak the cloth in a 75% alcohol container and wring it out to remove excess water. • Wipe the surface of the Control unit and Foot pedal at least 3 times with a wet rag, paying special attention to gaps and hidden areas of activity, wipe until it is visually clean.

Device:	Dental Scaler and Air Polisher The procedure for cleaning, disinfection and sterilization applies only to the accessories powder handpiece, ultrasonic handpiece, scaler tips, spanner wrench, and torque wrench.
Advice:	Reprocessing procedures have only limited implications to this dental instrument. The limitation of the numbers of reprocessing procedures is therefore determined by the function/wear of the device. From the processing side there is no maximum number of allowed reprocessing. The device should no longer be reused in case of signs of material degradation. In case of damage the device should be reprocessed before sending back to the manufacturer for repair. The following are the manufacturer's recommended processing times:

Part name	Number of times
Powder Handpiece	250
Ultrasonic Handpiece	250
Spanner Wrench	250
Torque Wrench	250
Ultrasonic tips	250

Reprocessing Instructions	
Preparation at the Point of Use:	Disconnect the handpiece and scaler tips. Remove gross soiling from the device with cold water (<40°C) immediately after use, if applicable. Don't use a fixating detergent or hot water (>40°C) as this can cause the fixation of residuals which may influence the result of the reprocessing process.
Transportation:	Safely store the device in a humid surrounding and transport it to the reprocessing area to avoid any damage and contamination to the environment.
Preparation Decontamination:	The devices must be reprocessed in a disassembled state, as far as possible. Only powder handpiece, ultrasonic handpiece, scaler tips, spanner wrench, and torque wrench can be cleaned and disinfected with automated methods and sterilized with steam sterilization process.

Releasing residual pressure

During operation, the air pressure inside the powder chamber increases. The powder chamber cap cannot be opened, and the powder chamber cannot be removed. If it is necessary to open or remove the powder chamber during operation or after treatment, Press the  button to release pressure , then pull it straight up.

Note

During pressure release, it is recommended to keep the handpiece nozzle pointing downward to prevent discharged air or residual powder from causing injury.

6.5. Auto-cleaning (Before and after each operation)

Note

- Auto-Cleaning is essential to prevent powder blockage and corrosion of metal components. It should be performed before and after each operation.
- Do not use water containing cleaning solutions to clean the tubing.

1) Ultrasonic tubing cleaning: Install the water bottle and fill it with water. Take the ultrasonic handpiece and point it toward the sink. Press the  button on the screen, cleaning stops automatically after 30 seconds.

2) Powder tubing cleaning: Connect the air supply and ensure that the water bottle contains water. Take the powder handpiece and point it toward the sink. Press the  button on the screen, cleaning stops automatically after 30 seconds.

3) To stop cleaning during the cycle, Press the  button again.

Note

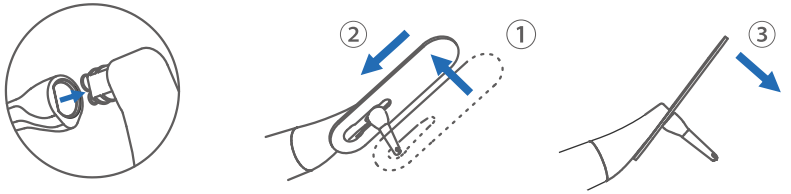
The cleaning cycle lasts 30 seconds and stops automatically.

5.5.2. Nozzle(For Perio use)

(Applicable to PT EX A/C only)

Installation: Insert handpiece head in the direction of nozzle "D" head;

Removal: Use the spanner wrench to pry it out.



Caution

- This product is non-sterile and needs to be disinfected with medical alcohol for 5 minutes before use;
- The nozzle is disposable and prohibited from secondary use.

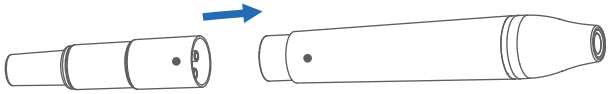
5.6. Ultrasonic handpiece

(Applicable to PT EX A/B only)

5.6.1. Ultrasonic handpiece

Installation: Align the marks on the ultrasonic handpiece and handpiece tube, then push the handpiece into the connector.

Removal: Hold the ultrasonic handpiece and handpiece tube, then pull the handpiece out.



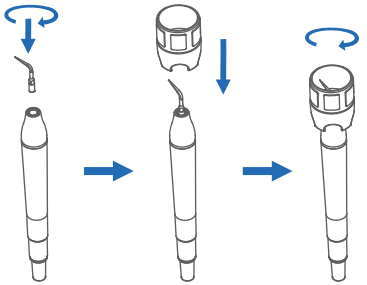
Caution

Do not rotate the ultrasonic handpiece during insertion or removal, as this may cause damage.

5.6.2. Scaler tips

Installation: Hold the handpiece and screw in the scaler tips, and then insert it into the torque wrench, finally rotate clockwise.

Removal: Hold the handpiece tightly, insert the scaler tips into the torque wrench, and then rotate counterclockwise.



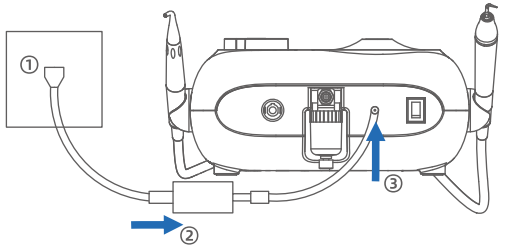
Caution

- The supplied torque wrench must be used to install the tip. Insufficient tightening may result in loosening and reduced vibration; excessive force may damage the threads.
- Remove the tip before each sterilization cycle. Do not autoclave the tip together with the handpiece. (Details in section 7)

5.7. Adapter

Connect power: ③→②→①
Connect the adapter to the device, then connect it to the net power.

Disconnect Power: ①→②→③
Disconnect the net power supply, then disconnect the adapter from the device.



Note

Please be careful not to touch the appliance with wet hands.

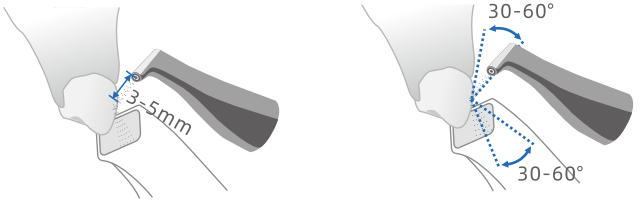
Note

- For air polishing, settings 5-7 are recommended;
- If the screen displays the 

icon, it indicates insufficient air pressure, which may affect air polishing performance. Please check the air pressure.

Prophy mode

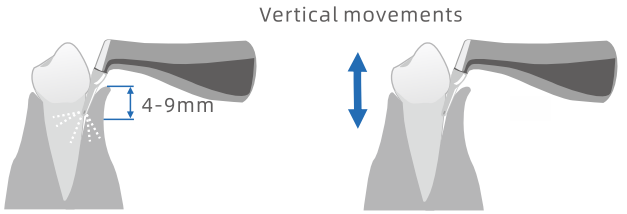
1) Before treatment, adjust the powder and water flow level before using on the patient;
2) Keep the nozzle outlet at a distance of 3-5mm from the tooth surface and at an angle of 30-60 degrees.



Perio mode

(Applicable to PT EX A/C only)

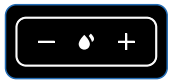
1) Insert the nozzle tip deeper than 3mm into the periodontal pocket;
2) Keep the nozzle 4-9 mm from the tooth surface and move it vertically;



Note

- Powder may not be sprayed efficiently into the periodontal pocket if the depth is less than 3mm.
- Never point the nozzle directly toward the oral mucous membrane or in periodontal pockets.
- Users should wear a protective mask.

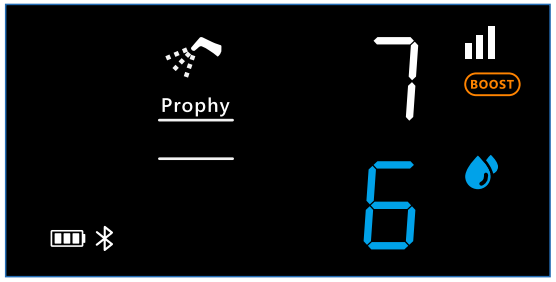
6.4.2. Powder and Water Flow Adjustment

- Press "+" or "-" on the  to adjust the powder flow level; the higher the number, the higher the powder flow. The adjustment range is 0–10.
- Press "+" or "-" on the  to adjust the water flow level; the adjustment range is 0–10.

> **Note**
>
> The powder and water flow settings must not both be set to 0.

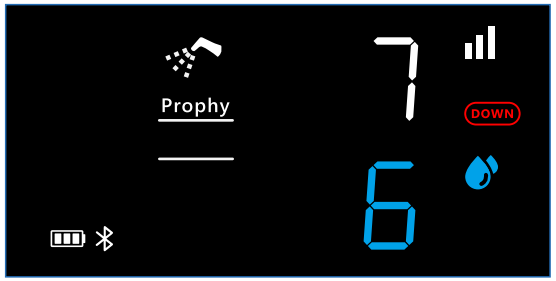
6.4.3. Working

1) Press the pedal to start working, and release to stop;
2) Press the center of the foot pedal to increase one level of powder flow, The  icon appears on the screen. Release to return to original settings.



(Air Polishing System – BOOST)

3) If the input air pressure is lower than the current setting requirement, the system automatically detects this condition and the  icon appears on the screen.



(Air Polishing System – DOWN)

6. Operation

6.1. Differences in features among models

Model / System/Mode	PT EX A	PT EX B	PT EX C
Ultrasonic system	Scaling	Scaling	/
	Perio	Perio	/
	Endo	Endo	/
Air polishing system	Prophy	Prophy	Prophy
	Perio	/	Perio

"/" indicates that this model does not include this feature.

6.2. Power on and system selection

- Press the power button to turn on the screen.
- **There are two ways to enter the system:**
  Automatic selection: Pick up the ultrasonic handpiece to automatically enter the Ultrasonic System; pick up the air polishing handpiece to automatically enter the Air Polishing System.

  Manual entry: When no handpiece is picked up, long press the  button to switch between the Ultrasonic System and the Air Polishing System.

6.3. Ultrasonic system

(Applicable to PT EX A/B only)

- The Ultrasonic System uses the ultrasonic handpiece with different tips to perform procedures such as supragingival scaling, periodontal treatment, and endodontic treatment.
- Ultrasonic power and water flow can be adjusted as needed.

6.3.1. Mode selection

The system contains three modes: Scaling, Perio and Endo. Press the  button to switch modes.



(Ultrasonic System – Scaling)

6.3.2. Power and Water Flow Adjustment

- Press "+" or "-" on the  to adjust the power level; the higher the number, the higher the power. The adjustment range is 0–10.
- Press "+" or "-" on the  to adjust the water flow level; the adjustment range is 1–10.

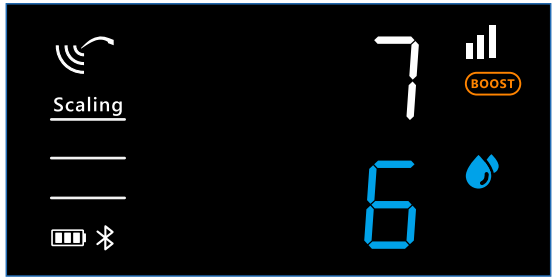
Note

- Insufficient water flow during operation may cause overheating of the tip, potentially damaging the tooth structure and periodontal tissue. Always ensure that a water spray is emitted from the tip.
- Start with a low power level and increase gradually according to the hardness of the calculus to avoid patient discomfort.

6.3.3. Working

1) Press the pedal to start working, and release to stop;
2) Press the center of the foot pedal to increase one level of power, The 

icon appears on the screen. Release to return to original settings.



(Ultrasonic System – BOOST)

3) After operation, keep the device running with water for 30 seconds to flush the handpiece and tip. Then remove the tip for cleaning and sterilization.

Note

- Hold the handpiece in a pen grasp.
- During clinical scaling, keep the side of the tip parallel to the tooth surface without applying pressure. Allow the tip to vibrate freely.
- When the device is used for the first time after power-on, water discharge may be delayed for a few seconds after pressing the foot pedal. This is normal.

Caution

During normal operation, the device vibrates at a very high frequency. When the tip is vibrating normally and the water is properly atomized, use only the side of the tip to lightly contact the tooth surface and move it back and forth continuously to remove calculus. No obvious heat should be generated at the tip. Avoid excessive pressure or prolonged contact at one location during scaling.

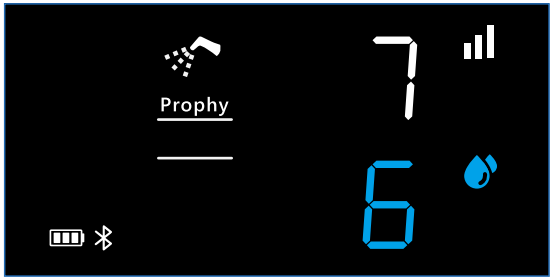
6.4. Air polishing system

- The Air Polishing System uses an air-water-powder mixture to clean tooth surfaces and is intended for the removal of supragingival and subgingival biofilm and stains.
- The powder flow and water flow can be adjusted as needed.

6.4.1. Mode selection

The system contains two modes: Prophy and Perio. Press the 

button to switch modes.



(Air Polishing System – Prophy)