关德荣 2026.09.16

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COXO®

User Manual

Built-in Dental Electric Motor

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Version:1.0 Revision Date:20260916 AE1648

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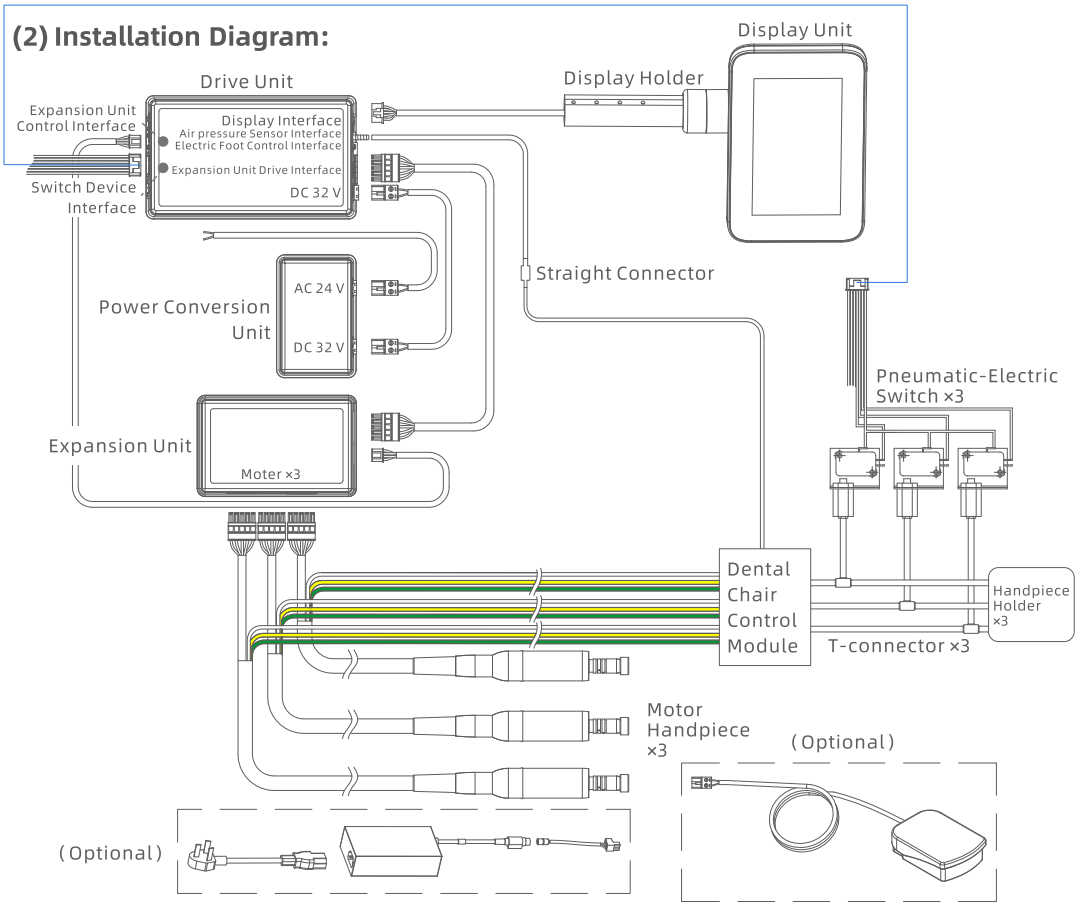
Appendix 4: X4 Installation Diagram and Packing List

(1) Packing List:

Item	Quantity
Drive Unit	1
Expansion Unit	1
Display Unit	1
Poneumatic-Electric Switch	3
Expansion Unit Drive & Control Cable	1
Straight Connector	1
Power Conversion Unit	1
Motor Handpiece	3
Display Holder	1
Switch Connection Cable	1
Power Cable	1
T-connector	3

(2) Installation Diagram:



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1. Preparation Before Use

1.1. Foot Pedal Air Pressure Settings

On the standby screen, tap the Settings button in the upper right corner to enter the Settings screen. Tap Foot Pedal Air Pressure Control button to enter the foot pedal and air pressure settings.

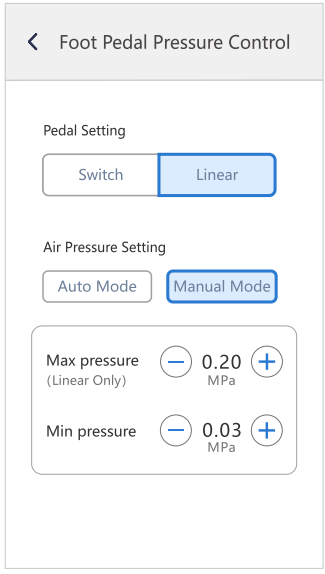
1) Foot Pedal Settings

- **Switch Mode:**

  Depress the foot pedal to run the motor at the preset speed.

- **Linear Mode:**

  The motor speed is controlled Proportionally according to how far the foot pedal is depressed.



2) Air Pressure Settings

- **Auto Adjustment**

  Tap Auto Mode. A prompt window appears. Pick up the corresponding Motor Handpiece, keep the foot pedal depressed, and follow the instructions in the prompt window.

  After calibration is completed, the system automatically switches to Manual Mode.

> **Note:**
>
> - Do not release the foot pedal during calibration. Calibration is completed when the progress bar finishes.
> - If calibration fails, check the tubing connections for abnormalities. After adjustment, retry the calibration. If the problem persists, contact your distributor or the manufacturer for service.

- **Manual Adjustment**

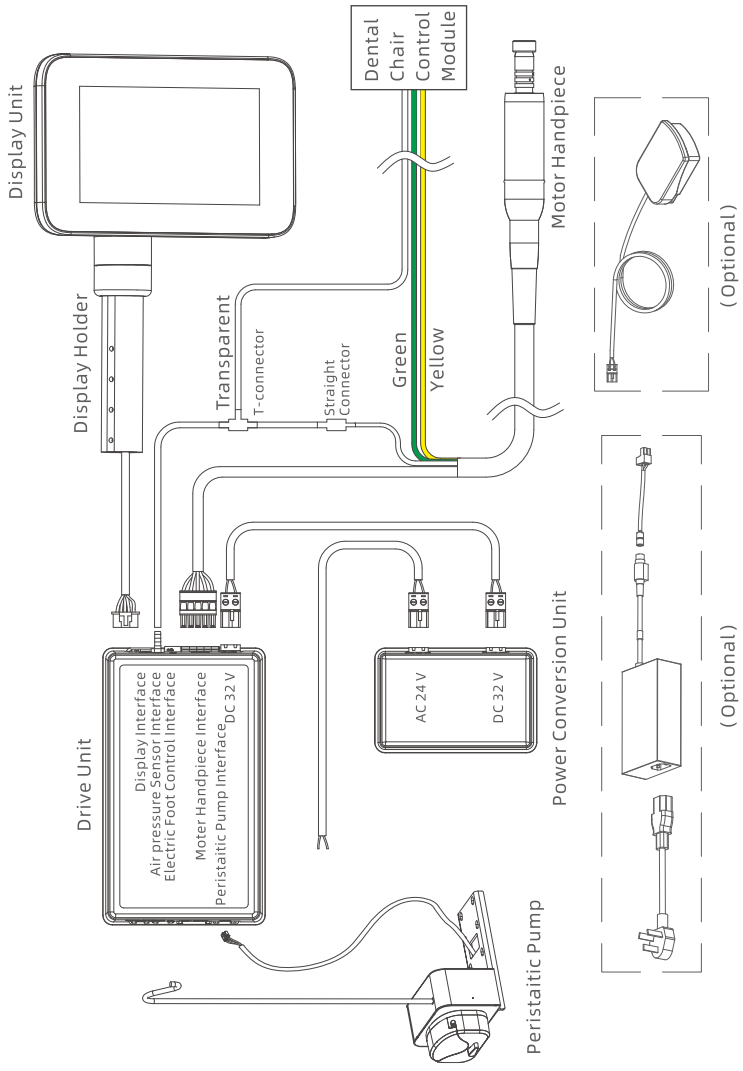
  When Manual Adjustment is displayed, tap the "+/-" buttons to adjust the maximum and minimum air pressure values.

Appendix 3: X3 Installation Diagram and Packing List

(1) Packing List:

Item	Quantity
Drive Unit	1
Peristaltic Pump	1
Display Unit	1
Pump Connection Cable	1
Straight Connector	1
Power Conversion Unit	1
Motor Handpiece	1
Display Holder	1
Power Cable	1
T-connector	1

(2) Installation Diagram:

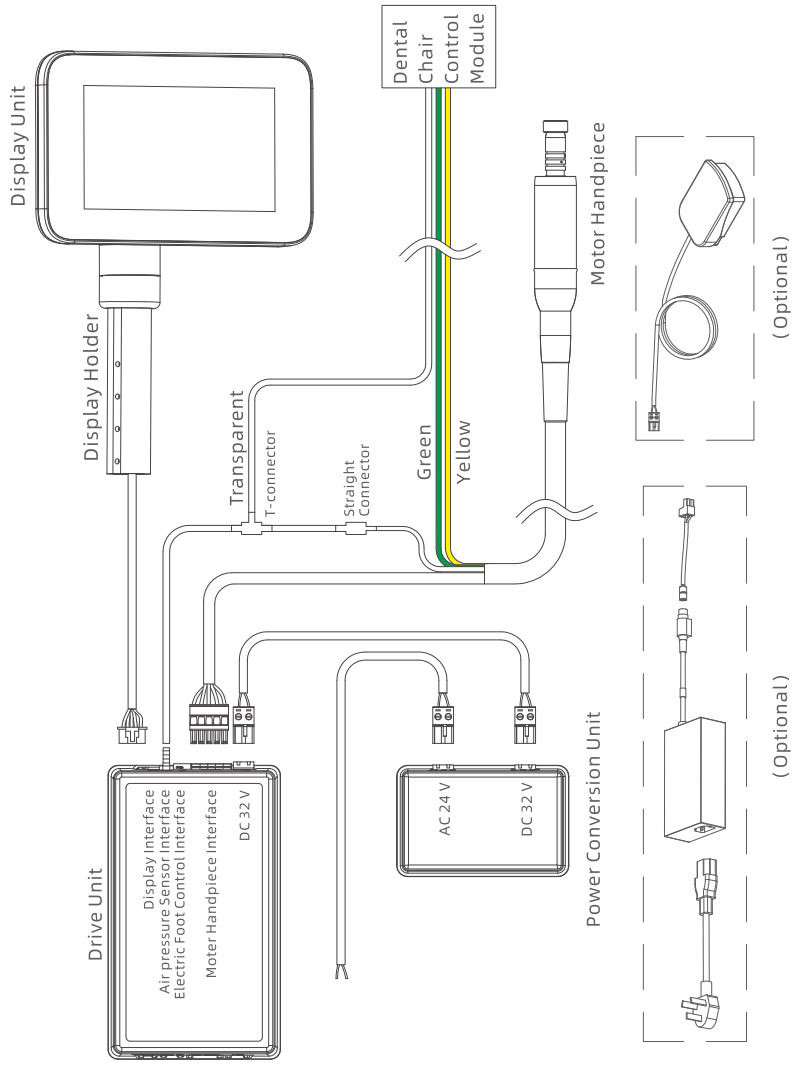


Appendix 2: X2 Installation Diagram and Packing List

(1) Packing List:

Item	Quantity
Drive Unit	1
Power Cable	1
Display Unit	1
Straight Connector	1
Power Conversion Unit	1
Motor Handpiece	1
Display Holder	1
T-connector	1

(2) Installation Diagram:

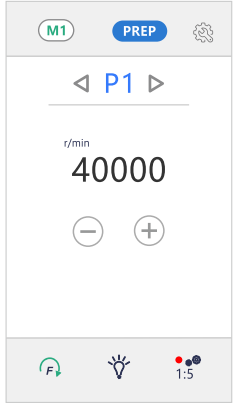
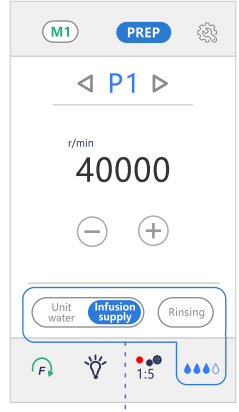


Note:

- Maximum air pressure: The air pressure required for the motor to reach its maximum speed. Above this pressure, the motor speed will not increase further.
- Minimum air pressure: The minimum air pressure required to start the motor. Below this pressure, the motor will not start.

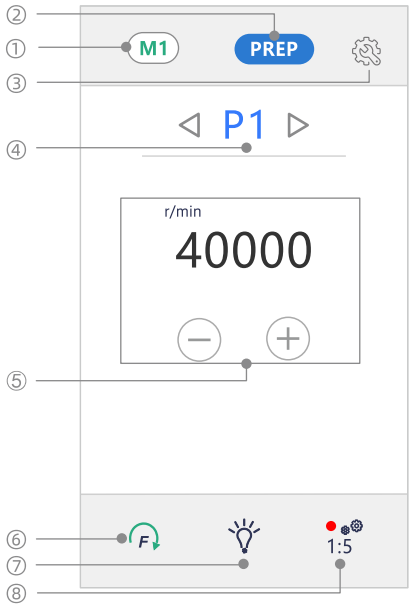
2. Operating Instructions

Differences Between Versions

Item	X2	X3	X4
System type:	Single-motor system	Single-motor system+ Peristaltic Pump	Multi-motor system
System type:	PREP、ENDO	PREP、ENDO	PREP、ENDO
Interface Differences:		 Adds a sterile irrigation control area and water flow adjustment	 Adds M1 / M2 / M3 Motor Handpiece switch buttons

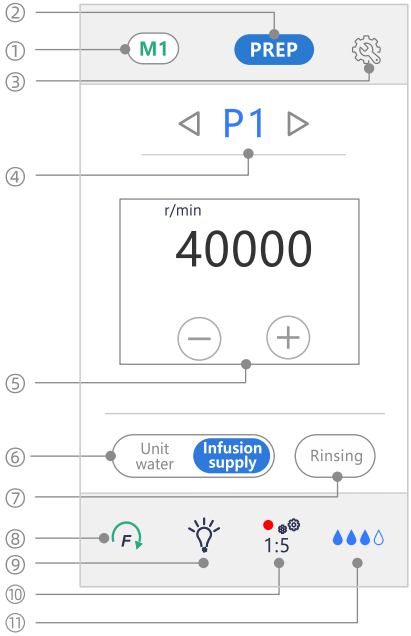
2.1. PREP Mode (X2/X4)

① Switch Motor Handpiece (X4 only)
② Switch mode
③ Enter Settings
④ Select program P1-P5
⑤ Adjust speed
⑥ Switch forward/reverse rotation
⑦ Adjust LED brightness
⑧ Select gear ratio



2.2. PREP Mode (X3)

① Switch Motor Handpiece (X4 only)
② Switch mode
③ Enter Settings
④ Select program P1-P5
⑤ Adjust speed
⑥ Select water supply
⑦ Rinsing on/off
⑧ Switch forward/reverse rotation
⑨ Adjust LED brightness
⑩ Select gear ratio
⑪ Water flow level: 0-4

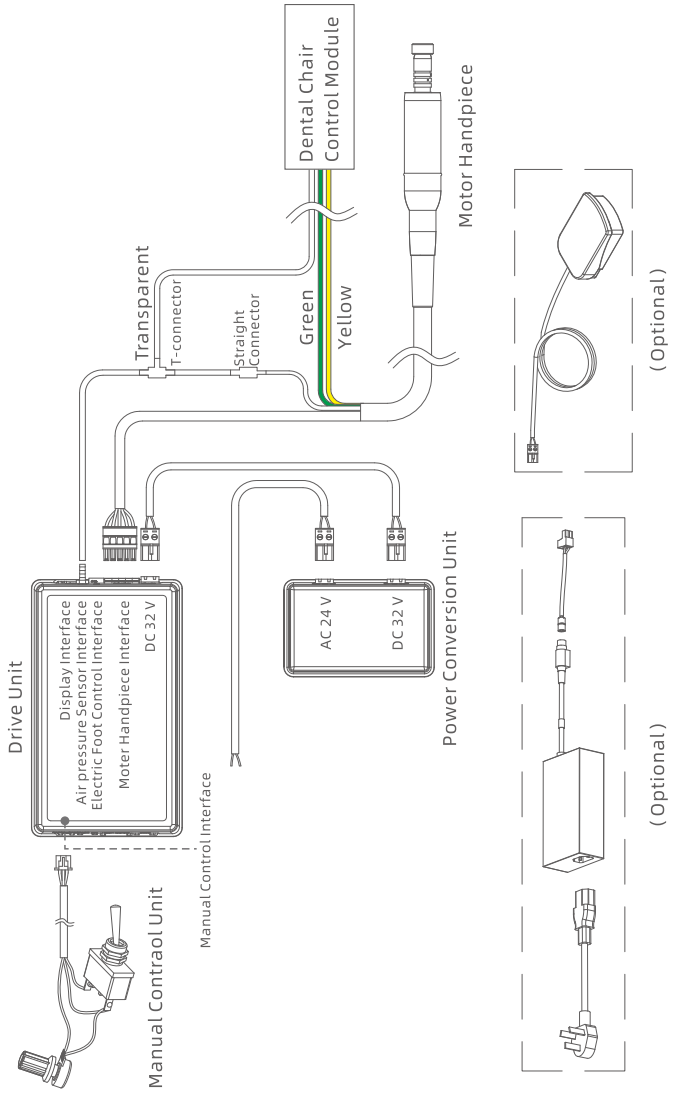


Appendix 1: X1 Installation Diagram and Packing List

(1) Packing List:

Item	Quantity
Drive Unit	1
Manual Control Unit	1
Power Cable	1
Straight Connector	1
Power Conversion Unit	1
Motor Handpiece	1
T-connector	1

(2) Installation Diagram:



4. Technical Specifications

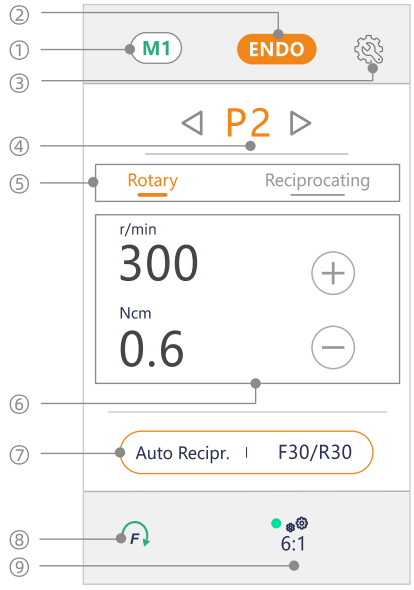
Power Conversion Unit	
Power	100 VA
Input	AC 24 V
Output	DC 32 V
Motor Handpiece	
Speed Range	No load: 2000-40000 r/min (1:1)
Max. Torque	≥ 2 N·cm
Endodontic Torque	0.6-6 N·cm (6:1)
Water Spray	> 50 mL/min (200 kPa)
Air Spray	> 1.5 L/min (200 kPa)
Cooling Air	< 40 L/min (250-500 kPa)
Cable Length	1.6 m
Light Source	LED
Illuminance	> 10000 lx
Dimensions	
Control Unit	154 × 95 × 28 mm
Drive Unit	145 × 85 × 40 mm
Power Unit	85 × 55 × 35 mm
Expansion Unit	110 × 70 × 40 mm
Peristaltic Pump	111 × 93 × 200 mm
Power Adapter (Optional)	
Input	100-240 V~ 50/60 Hz
Output	30 V ⎓ 2.4 A

2.3. ENDO Mode (X2/X3/X4)

① Switch Motor Handpiece (X4 only)
② Switch mode
③ Enter Settings
④ Select program P1–P5
⑤ Select file type
⑥ Adjust parameters:
- For continuous rotary files, adjust the speed and torque.
- For reciprocating files, adjust the speed and angle.

⑦ Adjust Torque Reached Action:
- Auto Reverse, Auto Stop,
- Auto Reciprocate F30/R30, F60/R60, F90/R90

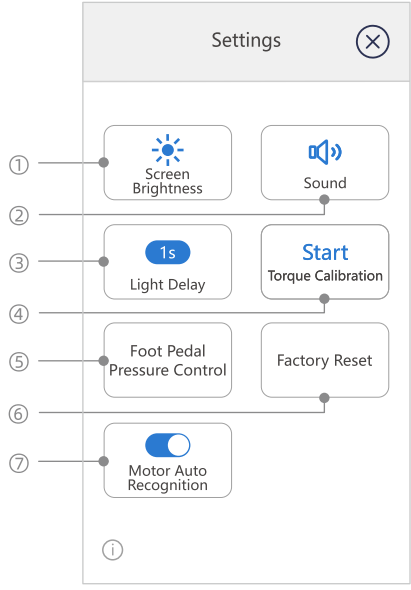
⑧ Switch forward/reverse rotation
⑨ Select gear ratio



2.4. Settings

The system supports the following settings:

① Screen brightness: Low / Medium / High
② Sound: On / Off
③ Light-off delay: 0 s / 1 s / 3 s / 5 s
④ Torque calibration
⑤ Foot Pedal Air Pressure Settings
⑥ Restore Factory Settings
⑦ Motor auto-detection (X4 only)



Warnings:

- Perform torque calibration before each endodontic treatment. Before calibration, pick up the Motor Handpiece and connect a 6:1 contra-angle.
- Before using Endodontic Mode, make sure the dental chair water and spray air are completely turned off.
- Do not start the motor while installing or removing an endodontic file.
- Restoring factory settings deletes all personal settings.
- The gear ratio set in the system must match the gear ratio of the contra-angle actually connected.

3. Cleaning, Disinfection and Sterilization

Before first use and after each use, process reusable components according to the cleaning, disinfection and sterilization steps below.

3.1. Cleaning

1) Wipe visible contamination from the Device surface with a soft cloth.
2) Wipe the surfaces of the Motor Handpiece and tubing with a soft cloth.

3.2. Disinfection

Wipe the Motor Handpiece with a soft cloth containing disinfectant alcohol.

Warnings:

- Do not use chlorine-containing disinfectants.
- Do not immerse the Motor Handpiece in a container of disinfectant solution. Inadequate removal of contamination or incomplete drying may corrode internal components.
- After manual cleaning and disinfection, perform one thermal disinfection cycle or one sterilization cycle in accordance with ISO EN 13060.

3.3. Drying

Dry the components after cleaning and disinfection. Drying with compressed air is recommended.

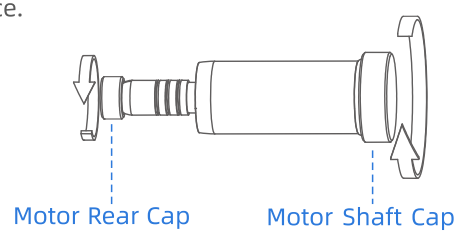
3.4. Sterilization

Use a legally marketed high-pressure steam sterilizer approved or registered by the local regulatory authority.

1) Sterilizable component: Motor Handpiece.

2) Before sterilization, place the Motor Handpiece in a sterilization pouch that complies with applicable local regulatory requirements.

3) Before sterilization, install the Motor Shaft Cap and Motor Rear Cap securely, as shown in the figure.



4) Sterilization method: High-pressure steam sterilization.

5) Sterilization conditions: 210 kPa, 134 °C, for at least 5 min.

Warnings:

- Disconnect the motor connection tubing before sterilizing the Motor Handpiece.
- Do not sterilize any parts other than those suitable for high-pressure steam sterilization, including the Device and power cord.
- If the sterilization pouch is found damaged before use, clean, disinfect and sterilize the Motor Handpiece again according to the procedures above.
- Do not lubricate the Motor Handpiece.
- Only the Motor Handpiece can be sterilized. Maximum validated number of sterilization cycles: 250.