

MARUCHI
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ENDOSONIC[®] Blue

Wireless Ultrasonic Handpiece



ENDOSONIC BLUE KIT User's Manual

Rx only

Warnings

- For dentists use only.
- Patients with cardiac disease, pacemakers, pregnant women and children require caution in use.

Prohibitions

- If the patient or medical staff has a pacemaker, do not use it.

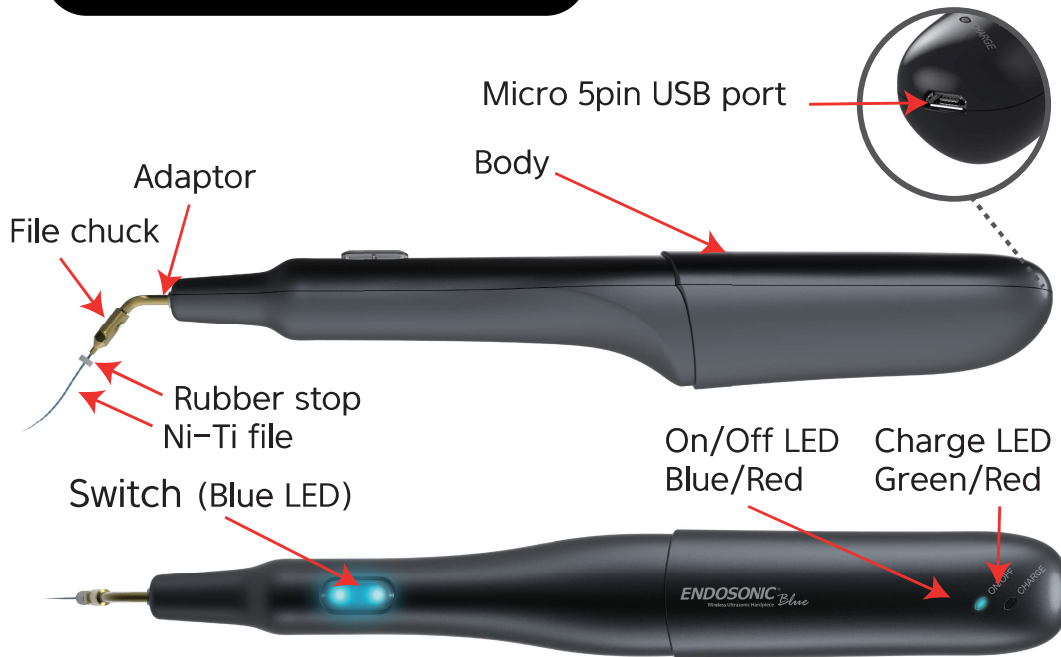
Precautions prior to use

- Before use, check the product and packaging for abnormal condition and damage.
- Do not use for other purposes.
- Store the product at room temperature avoiding direct sunlight, high temperature and high humidity.

Components



Product Information



- **Adaptor:** This is the part to fix ENDOSONIC Ni-Ti File and it is tightened by the exclusive torque wrench.
- **Switch:** It is for turning on/off the handpiece and operating ultrasonic wave. (Blue LED turns on when ultrasonic wave is working, LED blinks when the device is in abnormal condition.)
- **Charging port:** Connect the charging cable to use it for charging.
- **ON/OFF LED :** LED indicates the status of the product operation. Press once to turn on the power and the blue LED is on.
- **Charge LED :** This is the LED that indicates the status of the battery charging. Red indicates charging, and green indicates charging completed.

Preparations prior to use

- Check the product for damage.
- Check the charging status of the product.
If the On/Off LED is blinking blue or red, charging is required.
- When charging, the device connects with Micro USB Cable and charges.
It can be confirmed by Charge LED.
- Patients with cardiac disease, pacemakers, pregnant women and children require caution in use.

Application Notes

- If NaOCl filled in the root canal rises above 50°C or scatters, the file becomes superelastic and stiff. In this case, press the operation switch once more to stop its operation.
- Operating in the air can lead to the surface temperature of the file rising rapidly, causing the user to get burned or the file broken.
- If the ultrasonic vibration occurs by inserting a file up to the root apex, negative pressure may be generated and cause sudden bleeding. If it is difficult to control the bleeding, apply CleaniCal® to the root apex with the master cone and wait for 3 minutes for hemostasis.
- With autoclave, the R-phase disappears and changes like normal CM wire, it can easily break. So never autoclave the file.

How to charge



- Connect the charging cable (Micro 5pin USB) to the universal USB charger.



- Connect the charging cable (Micro 5pin USB) to the charging port.



- Check the red signal indicating that the Charge LED is charging.



- When charging is completed, the Charge LED will light green.



- After charging is completed, disconnect the charging cable from the charging port and press the switch to confirm normal operation.

How to use

- Attach the rubber stop to the ultrasonic file, and connect it to the adaptor.
- Place the rubber dam in close contact with the tooth to be treated.
- Fill NaOCl up to 2mm above the root canal orifice.
- Pressing the switch button on the device will blink three times and the device is ready.
- After the booting is completed, place a file in the root canal and press the switch button once to activate.
If it is active, the switch button will light blue.
- Place 2mm short from the end of root canal apex and apply.
- If NaOCl filled in the root canal rises above 50°C or scatters, the file becomes super elastic and stiff. In this case, press the operation switch once more to stop its operation.
- Ultrasonic operation is applied for 15 seconds at a time. Replace NaOCl after one application, and repeat cleaning more than 3 times.
- Press and hold the switch button until switch button starts to blink. When it blinks once, it is in Step 1 mode, when it blinks twice, it is in Step 2 mode, and when it blinks 3 times, it is in Step 3 mode. Step 1 → Step 2 → Step 3 sequence and If you press and hold the button in Step 3, it switches to Step 1 mode by flashing once.
- Use only in Step 1 or 2 mode until you are familiar with the file.
- If you do not press the switch for 5 minutes, it automatically enters Sleep mode.

General Specifications

- Ultrasonic canal cleaning device connected with Super-elastic Ni-Ti File
- Cavitation · micro stream · apical vapor lock removal effect by high power ultrasound
- Self-matching resonance method using BTL Piezo transducer
- Resonant frequency: 30,000 Hz (29 kHz to 31 kHz)
- Improved fatigue fracture resistance through automatic output management system (impedance self-matching)
- Power supply : 3.6V 3480mAh Li-Ion battery
- Charging voltage: 5V, 0.5A
- Ultrasonic output: 1.0 ~ 2.5 W

FAQ

- **When do I use it?**
 - It is used when you want to clean the root canal in the situation where the ultrasonic file enters the inside of the root canal smoothly.
- **How long does it apply in the root canal?**
 - It varies with the case, three times and each operation is 15 seconds. Once applied, it is recommended that the cleaning solution be replaced and applied again.
- **How deep is it located in the root canal?**
 - Place 2mm short from the apex and apply.

- **How much root canal should be removed for application in the root canal?**
 - When the root canal is narrow, it enters smoothly by applying it after enlarging it with # 20, 06 taper file. If the root canal appears clearly in the radiograph and the ultrasound file smoothly enters the root canal, there is no need to enlarge it.
- **When Ultrasound is activated, is the root canal transformed ?**
 - In normal cases, It doesn't make the root canal damage.
- **Is there any risk that the cleaning solution (ex. NaOCl) will cross the Apex when using Endosonic Blue?**
 - Because ultrasound forms a negative pressure at the apical third of the root canal, there is minimal risk that the cleaning solution will cross the apical root.
- **Can I use it for other purposes than ultrasonic irrigation?**
 - Endosonic Blue is specially designed for ultrasonic irrigation applications. Use for other purposes is not recommended.
- **What should I do if the file is broken in the root canal during ultrasound operation?**
 - Because it is not used in the tightened state in the root canal , it easily comes out simply by exchanging the root canal irrigant again. If it does not come out during the exchanging process, put a new file into the root canal and give vibration, the separated one will come out.

- **Is it possible to combine the handpiece and the file using a hand or other tool?**

- It is possible to assemble using a universal wrench for scaler, but it is recommended to use the exclusive torque wrench because the fastening part is easily worn or the fastening is weak and the ultrasonic wave may not be transmitted properly depending on the force to be fastened by each user.

- **Can I use other irrigation agents in addition to NaOCl?**

- With EDTA, it could be more effective.

- **Why do i keep breaking a file while others use it without problem?**

- Ultrasonic files become super-elastic at over 50 degrees and change their properties and work roughly. You should stop using them immediately if the files is stiff. From Step 2 mode, depending on the patient, the temperature inside the root canal may rise suddenly before 15 seconds operation ends require caution in use.

- **I can't make micro-bubbles like a video!**

- Micro-bubbles occur simultaneously on the file surface and root canal wall. So the wider the canal, the greater the flow of the cleaning solution affecting bubbles to occur well. And the higher the temperature in the root canal goes up, the better the bubbles form. The video was taken under this environment. In general, bubbles form actively at the apex although it may seem like there is not much bubbles on the top.

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