Root ZX3 [HF Module] – Quick Guide

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* Be sure to read the accompanying Instructions for Use before using the Root ZX3.
* Always wear personal protective equipment (PPE), such as safety glasses, gloves, a mask, etc. when using this device.

MORITA

Precautions

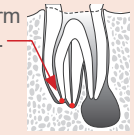
⚠WARNING **This device is a dental electrosurgical unit (electric scalpel). Be sure to read the Instructions for Use carefully before use.**

Do not use this device on patients with a pacemaker or cochlear implant.
Do not use this device on patients who have a pacemaker, ICD (Implantable Cardiac Defibrillator), or cochlear implant. Be sure to ask the patients about this before starting treatment.

Do not perform high-frequency conduction repeatedly to the same position.
(Limited to 3 times. If you wish to perform high-frequency conduction more than 3 times, wait a couple of minutes to allow the vicinity of the conduction target to cool down.)

Avoid performing high-frequency conduction repeatedly, taking particular care near the apex.

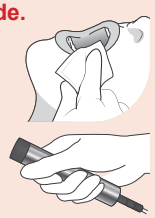
- To prevent damage to bones or the periodontal membrane.
- If there is no bony defect, do not perform high-frequency conduction at the apex. (For example, perform high-frequency conduction at least 1 mm above the apex.)



* Before performing high-frequency conduction, make sure that the mandibular canal or the mental foramen is not located in the vicinity of the electrode with X-ray or CT images. Otherwise, nerves or blood vessels may be damaged.

Prevention of temperature rise at the contact area of the contrary electrode.

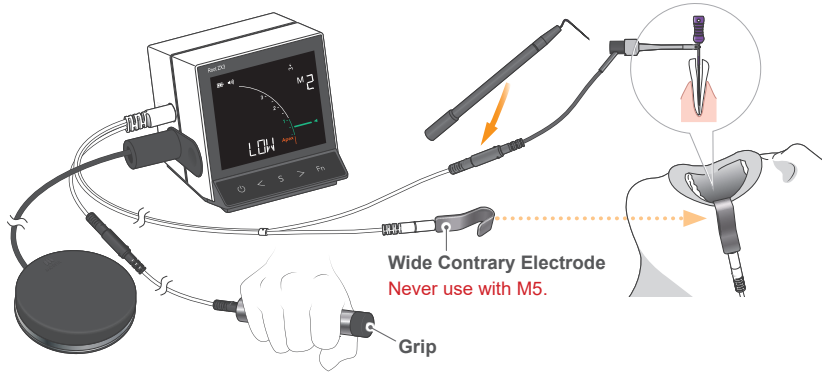
- Wide Contrary Electrode:
  If the corner of the patient's mouth is dry, try moistening it with a piece of gauze dampened with water. (Do not use ethanol [70 vol% to 80 vol%]; it will dehydrate.)
- Grip:
  Guide the patient to hold the grip securely with their palm. Partially holding the grip is not enough area for proper conduction and it could result in burns to the patient.



⚠CAUTION

Do not perform high-frequency conduction if the root canal has a chemical solution overflowing from the opening.
There is a risk of electrical leakage through the chemical solution to the gums.

Protect coated electrodes S and C.
Do not use electrodes S or C for apical patency or canal shaping. This will result in peeling off the coating. The high-frequency conduction can be made even though the coating has been peeled off, but depending on where it is applied, this may result in the current not being focused efficiently on the contaminants.



Memory

*** Use M3 or M4 during treatment under anesthesia.**

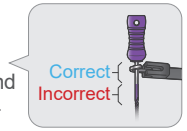
Memory	Display	Conducting Time	Example	
M1	EMR		1. Apex location 2. Working length determination	
M2	LOW	0.2 sec. × 5 times	1. Cauterization of contaminants or infected tissues inside the canal for patients who cannot be anesthetized. 2. Cauterization of contaminants or infected tissues for patients at levels not high enough to require anesthesia. 3. Without anesthetizing the patient, cauterization of remaining contaminants or infected tissues prior to root canal filling.	
M3	MID	1 sec.	Retreatment	1. After the irrigation protocol, cauterization of contaminants and infected tissues. 2. Before root canal filling, cauterization of contaminants and infected tissues. 3. Cauterization of contaminants and infected tissue within the pathological lesion.
M4	HIGH	1 sec.	Initial Treatment	1. Cauterization of dental pulp and residual pulp, and hemostasis. 2. Cauterization of infected granuloma, and hemostasis. 3. Cauterization of contaminants and infected tissues when unable to achieve apical patency.
M5	CUT.x	Max. 10 sec.	1. Gingivectomy for gingival retraction 2. Gingivectomy for gingival polyp 3. Common gingivectomy	

High-Frequency Conduction Result Screen

After a high-frequency conduction, a message may be displayed in the message indicator for 5 seconds. When the message turns off, you can perform high-frequency conduction again.

UNDR High-frequency conduction has been completed, but the electric current was small; perform high-frequency conduction again.
*Clean the electrode before performing high-frequency conduction.
The UNDR message may come up again after re-conduction.

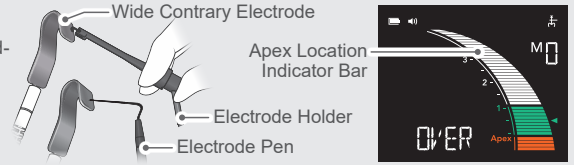
- **The conducted current was below the predetermined value.**
  ▶Perform high-frequency conduction again.
- **The battery pack is under-charged.**
  ▶Perform high-frequency conduction again. After that, if the battery indicator shows only one bar, charge the battery pack.
- **The electrode holder is clipping the coated part of the electrode S.**
  ▶Clip the electrode holder onto the metal upper part of the electrode S (close to the handle), and then perform high-frequency conduction again.



- **Protein substances adhering to the surface of the electrode S.**
  ▶Clean the electrode S or replace it with a new one, and then perform high-frequency conduction again.
- **The wiring inside the HF probe cord is damaged.**
  ▶Check the following points:

1. Set the memory to M1.
2. Touch the wide contrary electrode with the electrode holder's contact or electrode C.
3. Check if all the apex location indicator bars are lit up.

* If all the apex location indicator bars do not light up, have the device professionally inspected and repaired.



OVER **The conducted current was above the predetermined value.**
▶Overcurrent has been detected and conduction is stopped.

- M2/M3/M4:
  Move the conduction position towards the crown side and try again. Vacuum up any blood and chemical solution inside the canal.
- M5:
  Adjust the conduction position and try again.

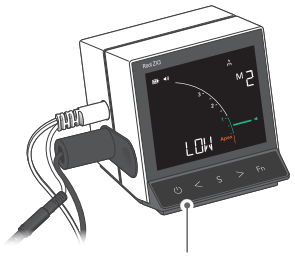
FAIL **Stepping on the foot switch too briefly.**
▶Keep stepping on the foot switch until the beep stops. Perform high-frequency conduction again.

LOB **The battery pack is under-charged or worn out.**
▶Charge the battery pack or replace it with a new one.

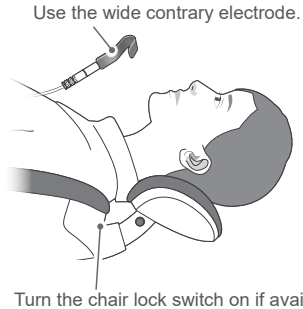
Operation

As an example, procedures for dental pulp cauterization (from the apex to 3 mm crown side) and cauterization of contaminants or infected tissues will be shown.
Since the effective range of cauterization is limited, move the treatment position appropriately. Treatment procedures and orders may need to change depending on each case.

For more information, scan the QR code. ▶



Press either < or > to select the memory number.



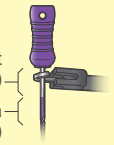
Use the wide contrary electrode.

Turn the chair lock switch on if available. (This is to prevent unintended movement during the procedure.)

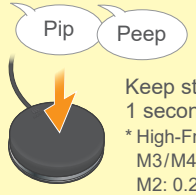
• High-Frequency Conduction

Electrode S

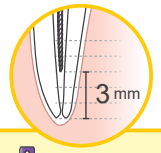
Correct: Metal Part (just below the handle)
Incorrect: Coated Area (The coated area is insulated.)



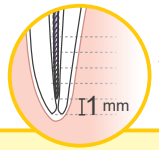
Have the patient securely hold the grip, and tell the patient to prepare before high-frequency conduction.



Keep stepping on the foot switch (for 1 second or more) until the beep stops.
* High-Frequency Conduction Time
M3/M4: 1 sec.
M2: 0.2 seconds x 5 times



Use X-ray images as a reference, perform high-frequency conduction for 1 second at approx. 3 mm above the apex.



Perform high-frequency conduction for 1 second at least 1 mm above the apex.
* For symptoms without a bony defect, never perform high-frequency conduction at the apex. (For example, perform high-frequency conduction at least 1 mm towards the crown side.)

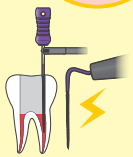
Initial Treatment

Dental pulp cauterization

Memory: **M4**

Anesthesia

Open the pulp chamber, and perform coronal flaring.



Perform high-frequency conduction approx. 3 mm towards the crown side from the apex. Hemostasis occurs.

Determine the canal's working length.

Perform high-frequency conduction approx. 1 mm towards the crown side from the apex.

Remove pulp, Perform canal shaping ▶ Irrigate the canal

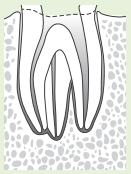
Apply pastes and perform canal filling.

Retreatment

Cauterization of contaminants or infected tissues at the apex.

Without a bony defect

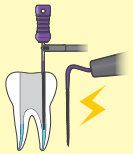
Memory: **M3**



Anesthesia (If necessary.)

Remove fillings (ex., gutta-percha, calcium hydroxide paste) ▶ Irrigate the canal

Leave the chemical solution up to the conduction position (approx. 3 to 5 mm from the apex).



Perform high-frequency conduction approx. 3 mm towards the crown side from the apex.

Apex location can be performed without changing memory numbers.

Determine the canal's working length.

Canal shaping ▶ Irrigate the canal

Perform high-frequency conduction approx. 1 mm towards the crown side from the apex.

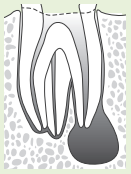
Apply pastes and perform canal filling.

Retreatment

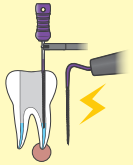
Cauterization of contaminants or infected tissues at the apex.

With a bony defect

Memory: **M3**



Anesthesia (If necessary.)

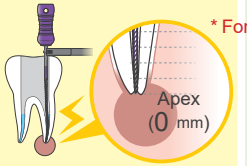


Perform high-frequency conduction approx. 3 mm towards the crown side from the apex.

Determine the canal's working length.

Leave the chemical solution approx. 3 to 5 mm from the apex.

Irrigate the canal



Perform high-frequency conduction at the apex.

* For symptoms with a bony defect
Perform high-frequency conduction for 1 second at the apex.

Apply pastes and perform canal filling.

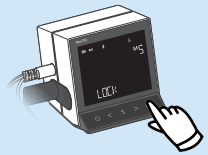
Incision and Excision

Memory: **M5**

Anesthesia

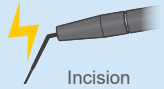
Never use the wide contrary electrode.

Never use M5 inside the canal.



Press Fn to unlock the function.

Have the patient securely hold the grip.



Incision or Excision (Max. 10 sec.)

PDF documents ▶

EO Endo. Optimized.