Dentalzone

Operation Manual

YS-RZ-C Apex Locator



FOR DENTAL USE ONLY

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Thank you for purchasing the YS-RZ-C. Please read this **Operation Manual** carefully before use for Operation instructions, care and maintenance. It is recommended to keep this **Operation Manual** for future reference.

⚠ Cautions for handling and operation

- "YS-RZ-C" is not recommended for use in patients that have a pacemaker or other implanted electrical devices.
- Read these cautions carefully and use only as intended or instructed.
- Safety instructions are intended to avoid potential hazards that could result in personal injury or damage to the device. Safety instructions are classified as follows in accordance with the seriousness of the risk.

⚠ DANGER

This product is powered by battery only. Never use batteries other than batteries designated in this manual.
This product is not recommended for use in patients that have a pacemaker or other implanted electrical devices.
Do not use in the presence of flammable anesthetic mixtures with air, oxygen or nitrous oxide. Explosive conditions may exist.
Do not disassemble or alter the device.
Use the original charger only. Other chargers may damage the device.

⚠ WARNING

In order to prevent infectious agent transmission it is highly recommended to use a rubber dam system during the endodontic procedure.
Do not use this product near devices emitting electromagnetic noise such as fluorescent lamps, film viewers, ultrasonic devices, etc. Cellular phones, remote controls or other devices generating

electromagnetic waves may cause abnormal operation of this product. Such devices should be turned off.
This product is not built as waterproof. Do not spill water or a chemical solution onto or into the unit. Failure to do so may result in fire or electric shock due to a short-circuit or rusting.
If you will not use the product for a long period of time, remove the battery from the unit to avoid fluid leak.

⚠ CAUTION

Exercise sufficient care in using the product by giving patient safety first priority.
The product is to be used only for dental treatment by qualified personnel.
Do not use or leave the product in a high-temperature environment such as under strong direct sunlight, in a car under a blazing sun, by a fire, or near a stove.
Make sure if the product works properly by using "Tester" attached, prior to use.
Do not allow any impact on the unit. Do not drop the unit.
The system functions normally in the environment where the temperature is at 5~40℃, humidity at 10~80% RH, atmospheric pressure at 50~106kPa and no moisture condensation in the Control Unit. Use at outside of these limits may cause malfunction.

⚠ NOTICE

Make sure that the canal is wet enough to ensure reliability of the measurement.
Ensure that the file does not touch another instrument.
Avoid excessive liquids inside the tooth cavity to prevent overflow and incorrect measurements.
If the battery mark flashes, recharge the battery as soon as possible.

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When the power is on, do not leave the measuring terminals short-circuited. The automatic shutdown function will not work while recognizing that it is measuring, and the battery is consumed.
Keep endo file and file clip away from any other metal or instruments.
Users are responsible for operational control, maintenance and inspection.
Store the system in the place where the temperature is at -10~60℃, humidity at 10~85%RH, atmospheric pressure at 50~106kpa and the system is not subject to air with dust, sulfur, or salinity.
When trouble is found, send to dealer.

1.Features

●Light weight and compact device.

●A large and eye friendly LCD panel has been adopted on the unit.

● Energy saving feature. The power of the unit automatically turns off when there are no operations for 3 minutes. (Automatic Shutdown function)

● High precision measurements guaranteed by advanced multi-frequency network impedance measurement technique and automatic calibrating.

●The accessories of the "YS-RZ-C" can be subjected to high temperature and pressure autoclave sterilization.

●Better performances supported by rechargeable battery.

2.Specifications

<Main Unit>

Model	YS-RZ-C	Battery	3.7V/750mAh
Power source	5V DC	Charger	~100-240V 50/60Hz
Operating Hours	About 8 Hours	Power consumption	≤0.5W
Dimensions	W84×D88×H112mm	Screen	4.5″ LCD
Weight	360g	External charger	Input: 110V/50-60Hz or 220V/50-60Hz Output: 5V DC

<Operation Conditions>

Environment temperature	+5℃~+40℃
Relative humidity	10%~80%RH
Atmospheric pressure	50~106kPa

3.Component Names

Check the content of the equipment before use:



Fig.1

①Main Unit
②Measurement Cable
③File Clip……2pcs.
④Tester……2pcs.
⑤Lip Hook……5pcs.
⑥Label
⑦Charger

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Operation Key and LCD Panel

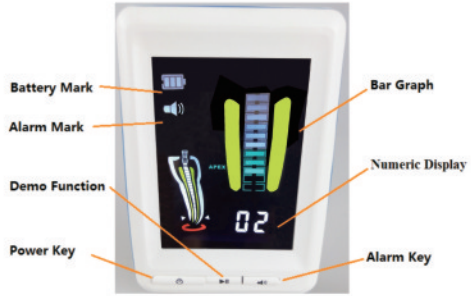


Fig.2

Power Key

When this is pressed for about one second or longer, the alarm sounds and the power is turned ON, and then the LCD lights up.

When this is pressed for about one second or longer with the power being ON, the alarm sounds and the power is turned OFF, and then the LCD lights off.

●Bar Graph

Displays the present position of the top of the file.

●Numeric Display

Displays the present position of the top of the file by number.

●Alarm Key

●The alarm sound volume can be adjusted. (See 6.Alarm Sound Volume Control)

The present alarm mark is displayed.

- High sound volume
- Normal sound volume
- Low sound Volume
- Mute sound Volume

●Battery Mark

The mark of the present remaining amount of the battery is displayed.

- More than 80% remains.
- About 30-80% remains.
- Less than about 30% remains.
- (Slowly flashing)
  Extremely low voltage. Need to be charged soon!

4. Installation and Assembly

(1)Setting of Battery

①Open the battery compartment cover. Set the attached battery according to the polarity indication (positive(+),negative(-))in the battery box.

②Close the battery compartment cover.



Fig.3

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⚠Caution

●Do not reverse positive(+) and negative(-).

●When it is hard to insert, the battery direction may be wrong. Do not insert forcibly.

●The battery should be charged before the first use or after a period of prolonged storage. Refer to the section 8 for battery charging instructions.

(2)Measurement Cable Connection

Insert the measurement cable into the probe connector at the right side of the unit.

(3)File Clip Connection

Connect the connector of the file clip to the plug of the measurement cable.

(4)Lip Hook Connection

Connect the lip hook to the connector of the measurement cable.

(5)Demo Mode

The built-in Demo mode is available to demonstrate operation of the device and to improve the learning curve of the operator.

①Disconnect the measuring cable or the charger from the device if connected and turn the device off.

②To start Demo Mode, press and hold the On/Off button for about 1 second until the second beep sounds.

③ During Demo cycle the operating sequence of the device is shown on the screen. Press the ON/Off button to pause the simulation; press the On/Off button again to resume.

④When Demo cycle is completed, it is repeated automatically until interrupted by the operator.

⑤To exit Demo mode press button and hold it for about 1 second until a beep sounds.

If measurement cable is connected during Demo cycle, the device switches automatically to

normal operation mode.

5 .Testing the device by tester

Users can use the tester to check if the device work properly, specific operation are as follows"

1)Pulling out the measuring wire and turn off the device.

2)Insert the tester.

3)Turn on the device, it is works fine when green area ofthe display light.

⚠Caution

●Prevent the tester and file clip from being moistened or prevent the electrode on the tester from touching skin. Otherwise, correct measurement cannot be made.

● If the number display is still out of "3 to 10" or not properly displayed, check whether the measurement cable and the file clip are securely connected.

●If there is no problem with connection of the respective cords, connect the plug and connector of the measurement cable directly.

①If the number display is "-3" at this time, a cord(s) may be broken. Contact the dealer.

② If the number display is not "-3" or not properly displayed at this time, there may be an abnormality in the main body or measurement cable. Contact the dealer.

(2)Use

①Hang the lip hook on the corner of the mouth of the patient

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Fig.5

②Check that the power is ON.

③Pinch the metallic shaft of the file inside the root canal with a file clip.



Fig.6

④Carry out root canal end measuring.

⚠ Caution

Set the target value of the bar graph to 3.

⑤When work is completed, press the power key for about one second or longer to turn OFF the power.(LCD lights off)

⚠ Notice

The unit automatically shuts down after 5 minutes without use. In order to prolong the battery life, it is recommended to manually switch off the device after measuring by simply pressing the key(On/Off).(Automatic Shutdown function)

⑥Remove the probes etc.

⚠ Caution

When removing the probe, be sure to grab the connector, and make sure to never grab the cord.

6.Alarm Sound Volume Control

The alarm sound volume can be controlled at the three steps of “High Volume, Normal Volume and Low Volume.”

① Lightly push the alarm key for one second or longer.

② The alarm mark on the LCD panel changes and the sound volume changes.

③ The sound volume is adjusted each time the alarm key is pressed.

⚠ Caution

●Do not push the alarm key strongly. Otherwise, it may be broken.

⚠ Notice

●The sound level is retained, even if the power is turned off.

7.Celeaing/Sterilization

(1)Cleaning

If dirt sticks on the unit, probe, file clip, lip hook, or extension cord. Then, soak a clean cloth in water and squeeze cloth tightly to drain water. Use the cloth to wipe away dirt. After that, wipe off with an alcohol soaked clean cloth.

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⚠Caution

To clean the product, do not use any solvent such as benzine and, thinner.

(2)Sterilization

●Autoclave sterilization is recommended.

●Sterilization required after each patient as noted below.

●Can be autoclaved: File clip, lip hook, extension cord.

⚠Caution

Do not autoclave any parts(the unit, and probe) other than those that can be subjected to autoclave sterilization.

n Autoclave Procedure

①Wipe away dirt on the surface of the file clip and lip clip with a clean cloth dipped in water and sufficiently squeezed. And then, wipe with a clean cloth dipped with disinfecting alcohol.(Refer to 7.(1) Cleaning)

②Insert into an autoclave pouch. Seal the pouch.

③Autoclavable up to a max.135℃. (EX)Autoclave for 20 min. at 121℃ or 15 min. at 132℃

④Keep the handpiece in the autoclave pouch to keep it clean until you use it.

⚠Caution

●If the sterilizer has a dry process that exceeds 135℃, skip the process.

● Since the bottom shelf of the sterilizer is close to the heat source, it can be too hot. Place instruments in the middle or top shelves.

●If autoclaved with other instruments stained with chemical solution, it could strip the plating and make surface black.

●File clip, lip hook and extension cord are consumables. When they are discolored by repetition of autoclave sterilization, replace with new ones.

8.Battery Charging

This product is delivered with a rechargeable battery. The battery indicator on the status bar shows the battery charge level. When the icon is flashing, the battery requires recharging, however, it is still functional for several treatments before the device shuts down.

To charge the battery:

- Disconnect the measurement cable.
- Connect the charger cable to the unit.
- Connect the charger to the Wall Outlet.

Charging indicator (the yellow indicator) will appear during battery charging. When the battery indicator stops blinking and turns green, the charging is complete.

Duration of charging: About 2 hours (12 hours after long periods without use).

⚠ **Note:** The unit cannot be used while charging.

9.Troubleshooting

When trouble is found, check the following items again before asking repairs. If none of these are applicable or the trouble is not remedied even after action has been taken, a failure of this product is suspected. Contact your dealer.

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No.	Problem	Possible Cause	Solution
1	The unit shows the following picture while charging	The battery is not connected	Open the battery compartment as described in section 3.1Use only the original battery pack from your supplier.
2	The device does not turn on by pressing the On/Off button	1.The button may be functioning incorrectly. 2.The battery may be discharged. 3.Electronic malfunction	1.Press the On/Off Button several times. 2.Charge the battery. 3.Contact your dealer.
3	The device shuts off while measuring.	The battery is discharged.	Charge the battery.
4	No sound while measuring.	Sound control is set at 'mute' level.	Adjust the sound level by pressing the 'Sound Control' button.
5	The device does not show the file advance inside the canal.	1.Bad electrical contact 2.Electronic malfunction	1.Perform the cable connection test as described before. 2.Contact your dealer.
6	Incorrect Measurement	1.Dry/Calcified canal 2.Restoration treatment conductive pass is blocked. 3.Spillage of blood or irritating liquid provides a conductive path outside the canal. 4.Deep caries provides a conductive path outside the canal. 5.Metal crown or metal filling provides a conductive path outside the canal. 6.perforation 7.Large lateral canal	1.Irrigate the canal. 2.Remove old canal filling to open the path, irrigate the canal. 3.Dry excessive liquid. 4.Block the external conductive path. 5.Avoid contact between metal crown/filling. 6.Remove the file, close the perforation and repeat the measurements, carefully inserting the file into the canal. 7.Try to continue the measurements(gently advance the file towards the apex until regular readings appear).

10.Warranty

Manufacturer warrants its products to the original purchaser against defects in material and workmanship under normal practices of installation, use and servicing. File clip, lip hook, extension cord, and batteries are expendable components, and are not covered by this warranty.

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11.Disposing Product

- Please consult with dealer from whom you purchased it about waster despoil.
- The used Lithium polymer batteries are recyclable, but their disposal may sometimes not be permitted by the country. Return them to your dealer.

Specifications may be changed without notice.

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