

APEX LOCATOR BINGO-1020

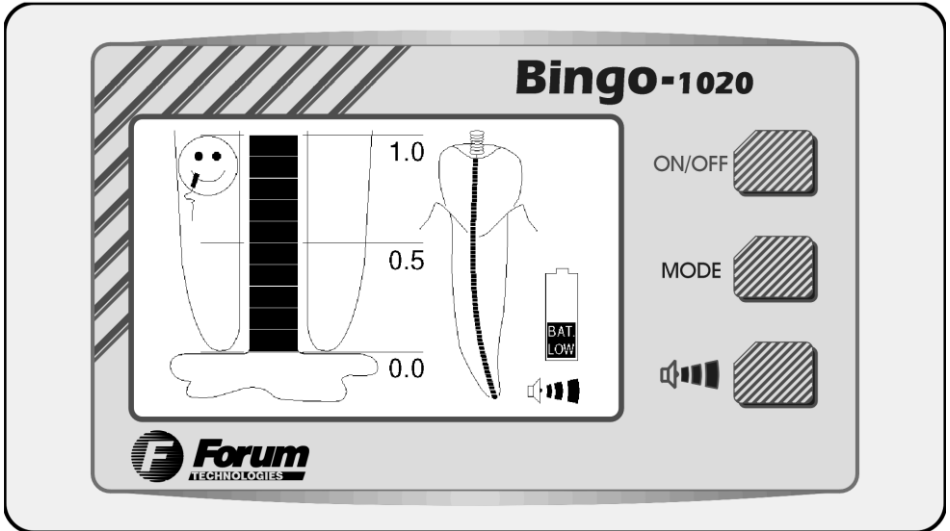
User Manual



FOR DENTAL USE ONLY

Introduction

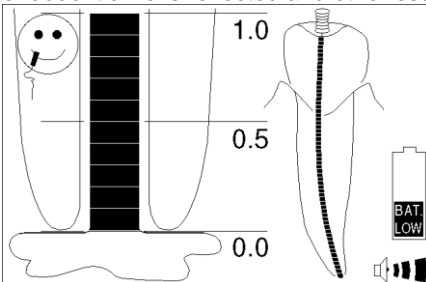
Thank you for purchasing our BINGO-1020 - the first 4th generation electronic apex locator. User friendly design of BINGO-1020 will make your work easier while your practice will benefit from the advanced features implemented in this new device.





External view of BINGO-1020 apex locator

1. Short description.

- 1.1. Portable microcomputer controlled apex locator BINGO-1020 is a modern device for precise apex localization during root canal treatment.
- 1.2. BINGO-1020 is distinguished by increased precision comparing to other apex locators and by large graphic display on which the current position of the endodontic file is reflected and other essential information is displayed.



- 1.3. On the front panel of BINGO-1020 three push-buttons are placed: On-Off, **Mode** and . **On-Off** button is used for turning the device on and off, **Mode** button is intended for control during **Tutor** mode of operation and for **Virtual apex** implementation,  button is used for sound level selection.
- 1.4. On the left side of the device two receptacles are placed: the upper one - communication port and the lower one for measuring cable and charger connection.
- 1.5. From the rear BINGO-1020 is equipped by foldable support which enables comfortable placement of the device on working table of the dentist and provides optimal viewing angle. During transportation the support is folded.

2. Battery charging.

- 2.1. **Before connecting the charger disconnect measuring cable from the patient and remove it from the device.**

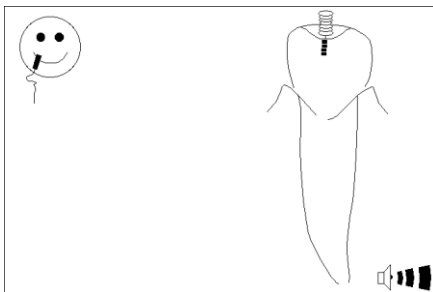
If the battery is fully discharged (the device doesn't turn on) or **BAT LOW** indicator is blinking, the battery should be recharged. Insert the charger plug into lower receptacle on the left side of the device and connect the charger to power line outlet. The device turns on and blinking battery icon appears on the display. When the battery is charged, battery icon stops blinking.

To ensure maximum performance of the battery and longer lifetime fully discharged battery should be charged during 24 hours. When **BAT LOW** indicator is blinking, the battery should be charged overnight. If BINGO-1020 is not used for long time and the battery is discharged completely, it should be charged for 24 hours again.

- 2.2. **WARNING!** BINGO-1020 is equipped by safety protection preventing device functioning during charging. To enable normal operation of the device disconnect the charger and press **On-Off** button.
- 2.3. In the right part of the display **BAT LOW** indicator is placed. The indicator is blinking when the battery is partially discharged and serves as a reminder that the battery should be recharged. BINGO-1020 is designed to operate normally even with partially discharged battery meaning that you may continue to use the device until the end of the working day after **BAT LOW** indicator is turned on and then to charge it overnight.
- 2.4. Rechargeable battery is not intended to be replaced by the operator, but by the service personnel only, if required.

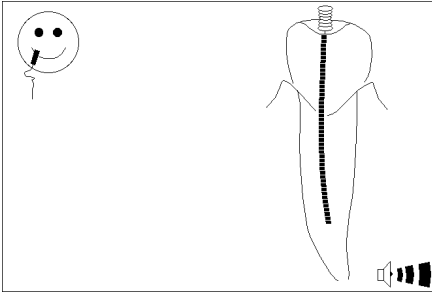
3. Device operation.

- 3.1. Insert measurement cable plug into lower receptacle on the left side of the device, connect the lip clip and the file clip to the cable.
- 3.2. Press **On-Off** button. The initial image appears on the display:

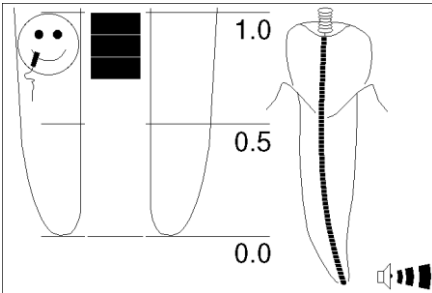


When measurement cable is connected properly, the lip clip and the endodontic file icons on the display are blinking. If the whole face icon is blinking, it means that the cable is not connected well. Connect the cable as described above.

- 3.3. Put the lip clip on the patient's lip, insert the endodontic file into the root canal and connect the file clip to the endodontic file. To ensure precise measurements the file size should be compatible to the width of the canal. BINGO-1020 detects automatically beginning of measurements and checks the quality of the electrical contact and the conductivity of the root canal. **If the contact is good, an audio signal (two consequent beeps) indicates beginning of normal measurement cycle.** The display stops blinking and the advance of the file is shown on the schematic image of the root in the right part of the display. If there are no beeps, clean the file clip and the file, fill the canal with hypochlorite or sodium chloride solution, if required, and continue the measurements. **It is not recommended to continue measurements if there still are no beeps.**
- 3.4. BINGO-1020 operates completely automatically. No manual adjustments are required. The microcomputer analyzes characteristics and status of the canal and provides automatic adjustment to ensure optimal performance. BINGO-1020 enables precise apex localization independently of root canal status (dry, wet, with blood, etc.). In the case of very dry canal or during restoration you may use hypochlorite or sodium chloride solution to provide conductive path during measurements.
- 3.5. Proprietary **ROOT WIZARD** algorithm enables continuous tracking of file movements inside the canal. BINGO-1020 is the only apex locator on the market implementing such capability.

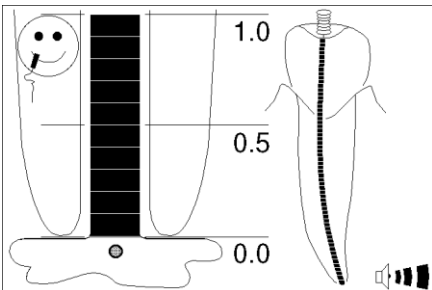



- 3.6. When the file is approaching the apex, the unique **ROOT ZOOM** function is activated. Enlarged image of the apex zone is displayed in the left part of the display enabling maximum precision of the measurements close to the apex where it really counts. The dentist can stop at the exact distance from the apex according to his preference without the need to adjust and to readjust the device. Linear high resolution scale and large, easy readable segments ensure fully controllable advance of the file tip up to the selected point.



Advance of the file in the apex zone is accompanied by audio signals. Duration of audio beeps is increased in accordance with the advance. When the apex is achieved the constant tone appears instead of the beeps.

- 3.7. If the file has passed the apex, visual and audio warning is affected. In this case schematic image of blood puddle illuminated by red lamp is displayed in the bottom of zoom area accompanied by frequent short beeps.



- 3.8. The file clip may be disconnected from the file and connected back during measurement cycle without affecting normal device operation (for instance, when the file is changed to a larger number during root canal treatment or when another canal should be measured). In such cases the device detects automatically that the new measurement is initiated, the electrical contact and conductivity of the root canal are checked once more and two beeps appear as described in p. 3.3 above.
- 3.9. To prolong the lifetime of the battery it is recommended to turn the device off between measurements. After completing the measurement press **On-Off** button. If BINGO-1020 wasn't turned off manually, automatic shut-down is activated after 5 min. of idle state.
- 3.10. When BINGO-1020 is turned on, previously selected sound level is set automatically. Press  button in order to change sound volume or to turn the sound off. Volume indicator is placed in the right lower corner of the display.

Sequence of volume level control



4. Tutor mode.

- 4.1. Built-in **Tutor** mode is implemented in BINGO-1020 apex locator to enable easy demonstration of unique features of the device and to shorten learning curve of the dentist.
- 4.2. To start the **Tutor** mode turn BINGO-1020 off, remove measuring cable, turn the device on and press **Mode** button. During **Tutor** mode various steps of device operation are simulated. Press **Mode** button again to proceed to the next step. The sequence of steps is listed below:
 - 4.2.1. The face icon stops blinking, only the lip clip and the file icon blink (imitation of measurement cable insertion).
 - 4.2.2. The blinking stops and the **ROOT WIZARD** tracking algorithm is simulated. Two beeps appear indicating beginning of the measurements and the advance of the file is reflected on the screen. Press **Mode** button to pause and to resume the simulation.
 - 4.2.3. Near the apex **ROOT ZOOM** is activated demonstrating precision of the measurements in the apex zone. The simulation is accompanied by audio signals. Press **Mode** button to pause and to resume the simulation.

5. **Virtual apex.**

- 5.1. **Virtual apex** feature is implemented in BINGO-1020 to further enhance functionality of the device. **Virtual apex** enables to the dentist to mark a predetermined point at the required distance from the apex.
- 5.2. To set the **Virtual apex** enter the **Tutor** mode as described in the p. 4.2. and proceed until **ROOT ZOOM** is activated (p. 4.2.3.).
- 5.3. When the segment of the required **Virtual apex** position is reached (for instance, segment 5), press **Mode** button and hold it for about 1 second until additional beep appears.
- 5.4. After setting the **Virtual apex**, the audio signals accompanying the advance of the file in the apex area will change. When the **Virtual apex** position is reached and during further advance of the file special beeps appear, clearly distinguished from regular audio signals. When the real apex is reached the solid tone is sounded, as usual, and an audio warning signal is activated if the file overpasses the apex.
- 5.5. To change the position of **Virtual apex**, repeat p.p. 5.2 and 5.3 and set new position; to cancel the **Virtual apex**, repeat p.p. 5.2 and 5.3 and proceed to the apex segment (the last segment) or pass over the apex. Press **Mode** button and hold it for about 1 second until additional beep appears.

6. **Limited Warranty.**

The manufacturer warrants this product against defects in materials and workmanship for a period of 24 months from the date of purchase, but not more than 30 months from the date of manufacture (not including cables and batteries). The warranty period for cables and batteries is 6 months.

During the warranty period a product determined by the manufacturer to be defective will be repaired or, at our option, will be replaced at no charge. The warranty does not apply if the product has been damaged by accident, abuse, misuse, or as a result of service or modification other than by person authorized by the manufacturer. The warranty is in lieu of any other warranty expressed or implied.

7. **Disclaimer.**

The manufacturer, its representatives and its dealers shall have no liability or responsibility to customers or any other person or entity with respect to any liability, loss or damage caused or alleged to be caused directly or indirectly by equipment sold or furnished by us, including, but not limited to, any interruption of service, loss of business or anticipatory profits, or consequential damages resulting from the use or operation of the equipment.

The manufacturer reserves the right to implement changes and modifications of the product at any time, to revise this publication and to make changes in the contents hereof without obligation to notify any person of such changes, modifications or revisions.

8. Precautions.

Do not use BINGO-1020 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 BINGO-1020. Such devices should be turned off.

BINGO-1020 was not tested on patients with implanted electro-medical devices (pacemakers, etc.). Use of BINGO-1020 on patients or by personnel with such devices should be avoided.

9. Maintenance, cleaning and sterilization.

BINGO-1020 is maintenance free and doesn't require any routine maintenance. The device doesn't contain user serviceable parts. The service and repair should be provided by trained service personnel only.

The device may be cleaned from dust using slightly wet cloth or tissue.

The accessories that are inserted into the patient's mouth during device operation (Lip Clip and File Clip) should be sterilized between the patients to avoid disease transfer from patient to patient. These items are designed to withstand multiple standard wet sterilization in autoclave at 134°C.

10. Certification.

BINGO-1020 complies with the following standards: IEC 60601-1 (Safety) and IEC 60601-1-2 (Electromagnetic compatibility), including immunity tests as specified for equipment of Group 1 Class B.

BINGO-1020 is covered by the "CE Marking of Conformity" certificate. The device bears the following CE identification mark:



11. European Authorized Representative.

European Authorized Representative who has been empowered to enter into commitments in our behalf:

EASYDENT
13 Place de la Nation 75011 Paris, France.
Tél. & Fax 33. 1.43.73.62.10
R.C.S. Paris B 397 769 480 (94B09899)
Email: easydent@aol.com
President: Iris BAT-GENSTEIN

12. Technical description.

BINGO-1020 electronic apex locator belongs to following category of medical devices:

- Internally powered equipment (2.4 V NiMH rechargeable battery)
- Type BF applied parts
- Not suitable for use in the presence of flammable anaesthetic mixtures with air or with oxygen or nitrous oxide
- Continuous operation
- Ingress of liquids – not protected
- Environmental conditions during transportation: temperature: –20°C to +60°C (0 to 140°F); relative humidity: 10% to 90%, non-condensing

BINGO-1020 is intended for use in electromagnetic environment specified for equipment of Group 1 Class B.

Technical specifications

Dimensions: 160 x 95 x 35 mm (6.3" x 3.7" x 1.3")
 Weight: 430 gr. (15 oz.)
 Display: STN Liquid Crystal Display
 Display dimensions: 81 x 49.5 mm (3.2" x 1.95")
 Power source: Rechargeable battery 2.4V

External charger: AC input 230v, 50 Hz / 115v, 60 Hz, DC output: 7.5V

Warning: The charger should comply with the requirements of IEC 60950 standard.

13. Standard symbols.

On the device label appear standard symbols as follows:



Class II equipment



Type BF applied part



Manufacturer



Consult instructions for use



Direct current



Recycling : PLEASE DO NOT THROW AWAY! This product and all its components must be recycled through your supplier

BOX CONTENT

No	Description	Code	Qty
1	Apex locator BINGO-1020	Y-B21-001	1 pc.
2	Charger	Y-EA9-606	1 pc.
3	Measuring cable	Y-EP8-530	1 pc.
4	File clip	Y-EP8-522	2 pcs.
5	Lip clip	Y-MC1-501	2 pcs.
6	User manual	Y-AB2-104	1 pc.



Do not connect or plug any other accessories except the items specified above.

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