



# APEX LOCATOR

(EN) Endodontic Apex Locator

(ES) Localizador de apices para endodoncia

(FR) Localisateur d'apex d'endodontie

## INSTRUCTIONS FOR USE

Read before use. Keep in a safe place for future reference.



**CAUTION:** Federal (US) law restricts this device to sale by or on the order of a licensed professional.

## HEALTH AND SAFETY

### Caution

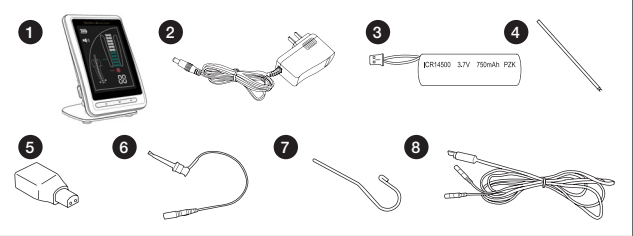
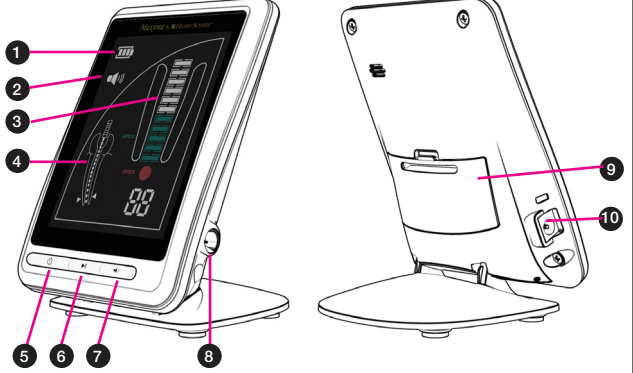
- The Maxima Apex Locator should only be used to measure pulpitis, pulp necrosis, periapical periodontitis, and tooth length during endodontic procedures. Do not use in combination with an ultrasonic scaler or electric scalpel.
- Persons with cardiac pacemakers, defibrillators and other active implanted medical devices are cautioned that some types of electronic equipment might interfere with the operation of the device. Dental professionals should contact the device manufacturer or the patient's physician for specific recommendations.
- Do not use in the presence of flammable anesthetic mixture with air, oxygen or nitrous oxide.

## GENERAL OPERATION/PRECAUTIONS

### Caution

- For professional use only.
- Use personal protective wear during use.
- Sterilize lip hooks, file clips, and probes before first use.
- Do not allow lip hooks, file clips, or probes to contact an electric power source. This can result in severe electrical shock.
- Test connections and operation of unit before each use.
- Only use with components included in packaging or listed in Accessories.
- Never use with damaged accessories or ones that show excessive wear.
- If damage or excessive wear of an accessory is observed, discard and replace immediately.
- Keep away from heat and direct sunlight.
- Remove battery from unit and store securely when not being used for a long period of time.
- Recharge battery when the indicator flashes, unit may not function properly with a low battery. Do not use unit when charging the battery.
- If any abnormalities occur, reference the Troubleshooting section. If the problem still can't be solved, stop using immediately and contact Henry Schein® ProRepair.
- To prevent contact with the endodontic file, be sure to retract patient's lips, cheeks, and tongue. An insulating barrier should be used when performing endodontic treatment.
- Accurate canal measurement may not always be possible depending on the shape and condition of the tooth or canal. Always check the measurement with an x-ray.
- Electromagnetic wave interference could cause this device to operate in an abnormal and possibly dangerous manner. All devices which transmit electromagnetic waves within the area should be turned off.

## PARTS AND CONTROLS

<p><b>Included in Packaging</b></p> <ol style="list-style-type: none"><li>1. Main Unit</li><li>2. Charging Adapter</li><li>3. Battery</li><li>4. Probe Cord</li><li>5. Tester</li><li>6. File Clip x4</li><li>7. Lip Hook x5</li><li>8. Probe x2</li></ol>	
<p><b>Main Unit</b></p> <ol style="list-style-type: none"><li>1. Battery Health</li><li>2. Sound Volume</li><li>3. Magnified Length Indicator</li><li>4. Canal Length Indicator</li><li>5. Power On/Off</li><li>6. Demo Mode</li><li>7. Volume Control</li><li>8. Probe Cord Input</li><li>9. Battery Console</li><li>10. Charging Adapter Input</li></ol>	

## SETUP

1. Place the Maxima Apex Locator on a level surface.
2. Connect the probe cord securely to the input on the right side of the unit.
3. Insert a file clip and lip hook in the connections at the end of the probe cord. Confirm the connections.  
**Note:** Do not disconnect file clip or probe cord by pulling on the wires. Pull from the ends to disconnect.
4. Turn on the unit and check that the display is functioning properly.  
**Note:** The device will automatically power down after 5 minutes without use.
5. Check the battery health of the unit. If the battery is flashing on the display, charge the unit for approximately 2 hours to fully charge. The battery will turn yellow on the display when charging and will turn green when fully charged.  
**Note:** Do not use on low battery. The unit will not provide accurate measurements.
6. Test the probe cord using the wire connections before each use. Test the device using the provided tester every two weeks.

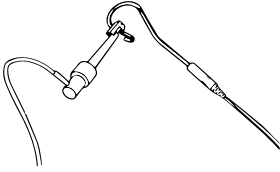


Fig. 1

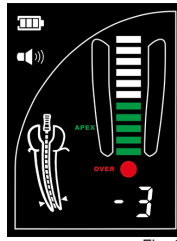


Fig. 2

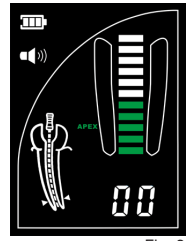


Fig. 3

### Test Probe Cord Using Wire Connections (Before Each Use)

1. Connect probe cord to unit and attach lip hook and file clip.
2. Confirm the connections and power on the device.
3. Connect the file clip to the lip hook. (Fig. 1)
4. Confirm all bars appear in the indicators on the screen and the number “-3” is displayed. (Fig. 2)
5. If anything different is displayed, replace probe cord and repeat.

### Test Device Using Tester (Every Two Weeks)

1. If connected, remove probe cord from unit.
2. Insert the tester into the probe cord connection.
3. Power on the device.
4. Confirm the number “02”, “03”, or “04” is displayed. (Fig. )
5. If anything different is displayed, please contact Henry Schein ProRepair.

### Demo Function

1. If connected, remove probe cord from unit.
2. Power on the device.
3. Press and hold the Demo Mode button for 1 second.
4. The Canal Length Indicators will simulate the progression of an endodontic file through the canal.
5. Re-press button to exit function.

### OPERATION



#### Caution

- To avoid over-instrumentation, determine the working length of the root canal before each procedure.
- The working length can differ depending on the characteristics of each individual tooth. This discrepancy must be judged by the dentist.
- The Canal Length Indicators displayed do not represent a distinct distance in mm or any other units of measurement. They only convey the endo file progressing towards the apex foramen.
- Accurate canal measurement may not always be possible depending on the shape and condition of the tooth or canal. Always check the measurement with an x-ray.
- The lip hook must be in contact with enough oral mucosa to provide an accurate measurement.
- A dry root canal may prevent accurate measurements. Wet the endo file with hydrogen peroxide or a saline solution before each use.
- Blood and saliva overflowing or leaking from the crown will carry current if contacting gingival tissue and prevent an accurate measurement. Clean and dry the area before each use.
- Touching a metal prosthesis with the endo file will carry current to gingival tissue and prevent an accurate measurement.
- Blocked canals cannot be accurately measured. Remove excess pulp before use.
- The indicator will display “OVER” immediately when the file breaks the surface of fluids inside the root canal, but it will return to normal as it approaches the apex.
- Always use an endodontic file suitable for the length of the root canal. A file that is too short may not be able to accurately measure. A file that is too long may cut through the apical foramen.
- Current can flow through a caries infected area and prevent accurate measurements. Accurate measurements cannot be obtained when there is a lesion present at the apex.

## Using the Maxima Apex Locator

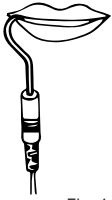
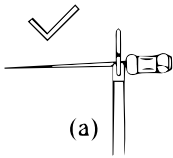
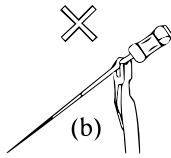


Fig. 4



(a)



(b)

Fig. 5

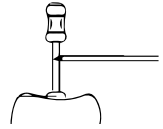
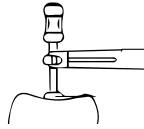


Fig. 6

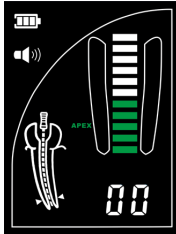


Fig. 7

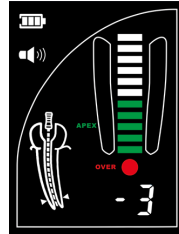


Fig. 8

1. Rest the lip hook on the corner of the patient's mouth. (Fig. 4)
2. Fasten the file clip to the metal shaft of the endodontic file. (Fig. 5) Note: Always attach the file clip to the upper part of the shaft. The file clip can be damaged if attached near or on the cutting part.
3. Position a rubber stopper to rest on the tooth's surface and insert the endo file into the canal. (Fig. 6)
4. A continuous alarm will sound, and bars will display on the Magnified Length Indicator when the file is within 2mm of the apical foramen. (Fig. 7)
5. Exceeding the apical foramen will display a negative number and "OVER" on the LCD screen. (Fig. 8)

### Determining Working Length

1. Continue the endo file into the canal until the device displays "00" on the screen. The file is now at the apical foramen.
2. Remove endo file from canal while leaving the rubber stopper as is.
3. Place the endo file on an endodontic ruler and measure the file length from the rubber stopper.
4. Subtract 0.5-1mm from the measured file length to determine the working length of the root canal.

### MAINTENANCE / STERILIZATION



#### Caution

- Sterilize lip hooks, file clips, and probe by autoclave before first use and after each patient.
- Do not immerse main unit or probe cord in liquid disinfectant.

### Cleaning & Sterilization

1. After each procedure, remove accessories and sterilize according to manufacturer instructions.
2. Remove lip hooks, file clips, and probes from probe cord and remove probe cord from unit.
3. Clean work area surfaces and Maxima Apex Locator, including probe cord, with a non-immersion disinfecting solution. When cleaning the Maxima Apex Locator, moisten towel with solution and wipe down unit. Discard towel in biohazard bin.  
**CAUTION:** Do not apply disinfecting solution directly to Maxima Apex Locator or probe cord.
4. Place lip hooks, file clips, and probes in a sterilization pouch and seal.
5. Steam autoclave for 20 minutes at 275° F (135° C).
6. Allow a minimum of 20 minutes for the drying cycle.

### ACCESSORIES

XXX-XXXX	Replacement Probe Cord	XXX-XXXX	Replacement Lip Hooks (5 pack)
XXX-XXXX	Replacement Tester	XXX-XXXX	Replacement Probe

**TROUBLESHOOTING**

Problem	Cause	Solution
The screen doesn't turn on after pressing the power button.	The battery is not connected securely.	Check the battery connection at back of unit to confirm, then re-install the battery.
	The battery has no power.	Recharge the battery.
The length of the root canal cannot be measured.	The probe cord connections are not secure.	Confirm that all connections are properly secured.
	The probe cord is broken.	Connect the lip hook with the file clip to confirm the screen does not display "-3", then replace probe cord.
The alarm doesn't sound.	The volume is muted.	Press the sound button to adjust volume level.
Canal length indicator is providing inaccurate or erratic results.	There is insufficient contact between the lip hook and the oral mucosa.	Confirm the lip hook has enough contact with the oral mucosa.
	Blood or saliva is overflowing out from the crown and onto the gingival tissue.	Clean the canal, canal opening, and tooth crown thoroughly. The indicator will display "OVER" if the current contacts gingival tissue.
	The root canal is filled with blood, saliva, or chemical solutions.	The indicator will display "OVER" immediately when the file breaks the surface of fluids inside the root canal, but it will return to normal as it approaches the apex.
	There is liquid or debris on the tooth surface.	Clean the entire tooth surface.
	The endo file is contacting the gingival tissue.	The indicator will display "OVER" if the endo file contacts gingival tissue.
	There is pulp tissue in the root canal.	If there is too much pulp left inside the root canal, the length cannot be measured correctly. Remove the excess pulp.
	The endo file is contacting a metal prosthesis.	Touching a metal prosthesis with the file allows current to flow to the gingival tissue. The indicator will display "OVER" if the current contacts gingival tissue.
	Nearby surfaces are infected with caries.	Current can flow through the caries infected area and prevent accurate measurements.
	There are lateral canals or the tooth is fractured.	The indicator will display "OVER" when the file reaches the opening of a lateral root canal or the opening of a fractured tooth and allows the current to contact gingival tissue.
	A broken crown is allowing fluid to leak and carry current to gingival tissue.	Use an insulating barrier to prevent leakage and current from contact gingival tissue.
	There is an apical cyst or another lesion at the apex.	An accurate measurement cannot be obtained.
	The file holder is broken or dirty.	Replace or clean the file holder.

Problem	Cause	Solution
The canal length indicator bar only moves when extremely close to the apical foramen.	The root canal is obstructed.	The indicator will regulate after reaching the apical foramen.
	The apical foramen is very large and wide open or may not be completely formed.	The indicator will regulate when close to the apex.
	The root canal is too dry.	Wet the endo file with hydrogen peroxide or a saline solution.
	The endo file is too small for the root canal.	Replace the current endo file with a larger one.

If the problem still can't be solved, please contact Henry Schein ProRepair.

### **SPECIFICATIONS**

Output Voltage: 3.7 V Max

Output Current: 0.75 A Max

Output Power: 0.5 W Max

Power Adapter Input: 100V-240V 50Hz/60Hz

Dimensions: 3.3" (L) x 3.5" (W) x 4.4" (H)

Weight: 0.74 lbs (Main Unit)

### **SERVICE**

For items that require service, including warranty service, please send to Henry Schein® ProRepair.

Henry Schein ProRepair  
620 S. Placentia Ave.  
Placentia, CA 92870 USA  
Phone # 714-579-0175  
Fax # 714-579-0186

### **WARRANTY**

This product is designed for use in a dental office and this warranty is not applicable to other uses. This product is warranted against manufacturing defects in materials and workmanship for 1 year from date of purchase.

Henry Schein® will repair or replace product at its sole discretion. This warranty shall be limited to replacement or repair of the product or its parts and shall not extend to any other claims, including but not limited to loss of profit, cost of removal or replacement, incidental or consequential damages or other similar claims arising from use of this product. Damage to product resulting from acts of God, faulty installation, misuse, tampering, accident, abuse, negligence, alterations, unauthorized repairs or problems unrelated to materials and workmanship are not covered by this warranty.



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M0076 Rev. 2019/03