

# REvision

AZURE HT Technology

EN

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Endostar REvision

## Instructions for use

### Endostar REvision

Endostar REvision is made with AZURE HT Technology by Poldent - Innovative heat treatment technology created by Poldent.

#### 1. Important information regarding the system

The Endostar REvision is a rotary instrument for efficient removal of old root canal fillings during a revision endodontic procedure with the crown down technique. The set contains three files marked with one (# 1), two (# 2) or three (# 3) stripes on the shaft (sizes: 08/30, 06/25, 04/20 respectively).

Endostar REvision files are manufactured from the highest quality nickel-titanium alloy, which provides durability and flexibility.

- > The handpiece should run at 300 rpm. The operating speed of the handpiece should be constant throughout the shaping process.
- > Do not apply excessive force. An up-and-down motion should be used when operating the files.
- > Shaping time should be as short as possible.
- > Always use a lubricating agent/irrigant when shaping the canal.
- > The files are very sharp and should be used very carefully, with little force and without excessive "thrusting".
- > Operate the instruments and handpieces according to their operating instructions (especially torque settings and speed).
- > Use the type and number of instruments that are truly needed in a given clinical situation.
- > Before using the instruments, be sure to run them outside the oral cavity and check for deformations, scratches and cracks.
- > Dispose of as medical waste.
- > Once curved, the Endostar REvision will not straighten out at room temperature, just as standard NiTi alloy files which is a natural phenomenon for the type of alloy used to manufacture these files.
- > The REvision files can be precurved just like stainless steel files before being inserted into the canal in order to manage ledges.
- > For easier access to molar teeth, the file may be precurved and inserted into the canal before starting the endodontic handpiece.

#### 2. Recommended movements

The instruments were designed to be operated with three different movements depending on the individual preferences of the operator, diagnosis and endodontic motor.

- > **Rotary motion** - the instruments rotate 360° clockwise (CW) with a set speed.
- > **Reciprocal right cutting movement** - the instrument performs alternating clockwise and counter clockwise movements; the angle of clockwise rotation must be larger than counterclockwise rotation e.g. 90° CW and 30° CCW. CW motion should be between 90° and 270°, whereas CCW between 30° and 90°. The clockwise net motion (CW - CCW) in each cycle should be between 60° and 240°. This means a full 360° rotation is made after 1.5 to 6 cycles.
- > **Complex motion** - combines the rotary and reciprocal motion. The files rotate in the canal until resistance increases and the reciprocal mode is activated. Rotation mode will be turned on again when resistance once again becomes low. An example of complex motion is OTR.

### 3. Recommended torque settings

System	File	Standard torque (Ncm)
Endostar REvision	08/30	2.0
	06/25	2.0
	04/20	2.0

Files should be used at motor speeds of 300 rpm.

The torque settings indicated in the table above are only suggestions and may vary according to each user preferences and endodontic motor capabilities. Do not exceed the upper torque limit which is different for each instrument. If precise torque settings cannot be set, and only manufacturer-specific torque levels are available, be sure to select one that does not exceed the recommended limit.

#### 4. We recommend that each instrument is used the following number of times:

Endostar REvision instruments may be sterilized and used multiple times provided that they are checked by the operator before each use for signs of damage. Check for signs of unwinding (or twisting) of the flutes of the file. The flutes should be regularly positioned throughout the length of the cutting part of the instrument. If in some area, the flutes are not regularly set apart (either too close or too far), it is a signal that further use of the instrument may lead to breaking inside the canal. Any signs of permanent deformation, especially bent areas without an arch shape, but a clear point of breaking should also raise awareness. The modified heat treated NiTi alloy used to manufacture the files enables bending in the form of an arch. If any doubts arise, the cutting part of the instrument can be placed in any fluid or environment with a temperature a little over 40°C, which will straighten out the cutting part of the file or place it in a delicate arch. Otherwise, if the file is still deformed despite performing the above mentioned procedure, it should not be used. Be sure to check that the cutting part of the file is attached to the shaft after each use. If the file has been subjected to high torsion force, especially in highly curved canals the instrument should be used only one.



Files which seem damaged should always be discarded.

### 5. Clinical instructions



Irrigate the root canal after each pass.  
Clear the file of any debris.

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#### > Cavity preparation.

Use a rubber dam. Develop proper access to the root canal filled with gutta-percha.

#### > Determining working length.

Determine the approximate working length with the help of an intraoral X-ray.

#### > Root canal preparation:

- Locate the canal which requires filling removal.
- Insert the Endostar REvision #1 file mounted onto the endodontic handpiece into the canal.
- Perform an up-and-down brushing motion (amplitude of 2-3 mm) delivering very little pressure towards the apex. The instrument should penetrate the root canal filling.
- After 3-4 up and down strokes remove the file from the canal and clean the debris with a sponge located in the instrument box.
- Irrigate the canal.
- You may consider using a gutta-percha dissolving agent such as Endostar Gutta Cleaner by applying in on a paper point or applicator according to the manufacturer's recommendations. Remember to stop using the dissolving agent when the file is 3-4 mm from the root tip.
- Continue shaping the canal with the REvision # 2 file until you reach approx. 2/3 of the initial working length. Repeat the steps C to E.
- Shape 1/3 of the apical part of the canal with hand files.
- If you find that there is a ledge created during the primary endodontic treatment, further shaping with file #3 should be considered. Curve its apical portion and insert it into the canal so as to go past the ledge. Next, turn on the endodontic handpiece and pull the file outside of the canal while brushing on the outer wall. Repeat this step two to three times. This will smoothen the ledge which will allow root canal preparation with other files without the need to procure them.
- Finish shaping the canal with a file suitable to the clinical situation.

### 6. Warnings

For professional use only.

### 7. Cleaning and disinfection

Detailed instructions for cleaning, disinfection and sterilization can be found on the website [www.poldent.pl](http://www.poldent.pl) and [www.endostar.eu](http://www.endostar.eu) in the download tab.

### 8. Sterilization

This is a non-sterile product. This is a non-sterile product. Sterilize before use. The instruments can be sterilized in a steam sterilizer (autoclave) at 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure. Instruments can be disinfected with mild disinfectants and washed in ultrasonic cleaners.

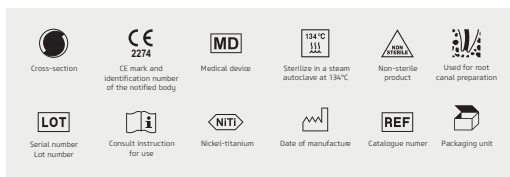
### 9. Storage

Instruments should be stored at room temperature in a dry, dust-free and clean environment.

### 10. Warranty

Complaints and the occurrence of adverse incidents as a result of the operation of the product should be reported directly to the distributor or manufacturer. Each **serious** incident connected with this product should be reported to the manufacturer and the competent authority of the Member State in which the user is established.

The files in the package may slightly differ in color, and the working segments may be slightly arched, which in no way affects the quality of the product. These differences are caused by thermal processing with the Azure HT Technology by Poldent.



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