



04/14

Endostar EP Easy Path

Instrument size at tip: ISO 14; taper: 4%, variable, with the taper decreasing towards shank.

Instruction for use

Endostar EP Easy Path

AMBER HT Technology by Poldent - innovative heat treatment technology developed by Poldent

1. Important warnings

Endostar EP Easy Path is a novel rotary file used for creating a glide path, which is a guideway for larger shaping instruments. The nickel-titanium alloy used to make the instrument was additionally heat-treated with the AMBER HT-technology developed by Poldent. This gives it the extreme flexibility and resistance to fatigue. The file easily follows even the most curved canals and prepares them for further shaping. The modified NiTi S-shaped file with two cutting edges provides efficient cutting and debris transportation out of the canal. The non-cutting tip of the instrument ensures a safe passage down the canal and prevents perforations, *via falsa* and/or ledges.

The Endostar EP Easy Path is NOT the final instrument for root canal preparation. It is an instrument which enables safe preparation of the canal and is used before the main instrument system.

- > A handpiece, which can provide 300 rpm, should be used. The operating speed of the handpiece should be constant throughout the shaping process (experienced endodontists can work with speeds up to 500 rpm).
- > 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 when shaping the canal.
- > The file is sharp and should be used very carefully, with little force and without excessive "pushing" down the canal.
- > Operate the instruments and handpieces according to their operating instructions (especially torque and speed settings).
- > Before using the instruments, be sure to see them working outside the oral cavity to check for deformations, and/or cracks.
- > Dispose of as a medical waste.
- > The Endostar EP Easy Path file may remain bent and may not straighten at room temperature as the non-modified NiTi alloy files do. This is a normal feature of the instrument.
- > Endostar EP Easy Path files can be pre-bent, the same way as the steel files, before inserting them into the root canal in order to bypass the existing ledges.
- > It is also acceptable to insert pre-bent file into the canal and then start the micromotor, this simplifies the access to the root canals in molars.

2. Recommended movements

The instrument has been designed and manufactured in such a way that it can be used in three types of movements depending on the individual preferences of the dentist, the case diagnosis and the type of a handpiece available in the dental practice.

- > **Rotary movement** - the instrument rotates continuously 360° in a clockwise direction (CW - Clock Wise).
- > **Reciprocal right cutting movement** - the instrument performs alternating movements: clockwise (CW) and anti-clockwise (CCW - Counter Clock Wise) except that the CW movement angle must be larger than CCW angle, e.g. 90° CW and 30° CCW. It is recommended that the rotation in the CW direction should be between of 90° to 270° and in the CCW direction between 30° to 90°, so that the net rotation in the CW direction in each cycle is between 60° to 240°, that means a full 360° CW rotation is achieved after 1.5 to 6 cycles.



90° CW 270°
30° CCW 90°

- > **Complex movement** - it is a kind of movement that combines the rotary movement with the reciprocal movement. After inserting file into the root canal, the file performs a rotary motion, and if the resistance for the file in the canal is too high, the rotary motion changes to the reciprocating movement. When the resistance decreases, the

rotary motion returns. An example of this is an OTR movement.

3. Recommended torque settings

Recommended torque is 1Ncm (up to 1.5 Ncm for experienced users).

Recommended speed is 300 rpm (up to 500 rpm for experienced users).

If your handpiece/ endodontic motor offers only pre-set levels of torque setting, choose a level that will not exceed the recommended values.

4. Recommended number of usage

Endostar EP Easy Path instrument can be sterilized and used many times, provided that the visual inspection performed by the dentist prior to next usage shows that the instrument remains undamaged, it is not bent, deformed, does not show signs of blade wear and can be securely attached to the handpiece. The special attention has to be paid to the excessive unwinding (or winding) of the instrument.

The instrument flutes should be regularly spread along the entire length of the blade. If at some point of the blade, the flutes are too close or too far apart (there is no regularity in the flutes pitch as compared to an unused instrument), this means that instrument can break in the canal.

It is very important to notice any permanent deformations on the instrument, especially those, when the instrument curvature does not have the form of a smooth arc, but is sharply bent and has a visible breaking point. Re-usage of such an instrument can lead to its breaking. The heat-treated NiTi alloy naturally allows these instruments to be bent in the form of a smooth arc.

In case of doubt, the file can be placed in any environment (fluid, air) at a temperature slightly above 28°C for a few seconds. The blade should straighten or remain smoothly curved. If the file is still deformed, it means it is permanently damaged and must not be used again.

After each usage, check that the blade is securely fixed in the shank.

If the file has been subjected to a high torsion force, especially in highly curved canals, the instrument should be used only once.



Dispose the file which appears to be defective.

5. Clinical instruction for use



Rinse the canal each time after the file is used.

Clean the files of any debris frequently.

Endostar EP Easy Path step-by-step instructions

- A. Isolate the tooth with a rubber dam.
- B. Prepare a straight-line access to the root canal.
- C. Use a hand ISO 10 K-file to establish patency and measure working length.
- D. Fill the canal with an irrigating solution.
- E. Mount the Endostar EP Easy Path instrument to the handpiece and place it in the canal.
- F. Move the instrument in an up-and-down motion with very little pressure towards apical part (the instrument should naturally progress down the canal). Use a pecking motion with an amplitude of 2-3 mm.
- G. After 3 to 4 up-and-down movements, remove the instrument from the canal and clean it with a sponge located in the instrument box.
- H. Irrigate the canal.
- I. Repeat steps F-H until working length is reached.
- J. Continue shaping the canal with your files of choice, for example the Endostar E3 Azure.

6. Warnings

This product is for professional dental use only.

7. Cleaning and disinfection

Detailed instructions for cleaning, disinfection and sterilization can be found on the website www.poldent.pl and www.endostar.eu in the download tab.

8. Sterilization

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. Product claims

Please notify the distributor and manufacturer of any claims or adverse events which occurred as a result of operating this device. 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.

Files in the package may vary slightly in color, and the blades may be slightly curved. These differences do not affect the quality of the product. They are natural results of the applied heat treatment - Amber HT Technology by Poldent.

