

2024

endo★*star*

Instruments and materials

endostar.eu



Every day thousands of dentists use our files all over the world

Since 1991 we have designed and produced instruments for root canal treatment. Our manufacturing facility is located in Poland, a country for several years belonging to the European Union. Our machinery is based on a proprietary technology developed in the R&D POLDENT department. It uses modern components, some developed by NASA, and allows for an annual production over 1 million packages of instruments shown in our catalogue, currently consisting of 16 000 items.

For many years we have been using a multi-stage quality control system, through which each blade of the produced file is precisely controlled. Therefore, an experienced team, imported materials, modern production line, and precise control and measuring equipment ensure the best production process and reliability of each product, certified by ISO and CE.



AMBER *HT Technology* AZURE *HT Technology*

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Endostar EP Easy Path

Amber HT Technology

Files used for creating a glide-path are a technological challenge. They are the first to penetrate narrow, curved and often calcified canals. They need to be thin and flexible, but also resistant to breaking inside the canal.

Creating a file which would fulfill all these requirements is not easy. For that reason, Amber HT Technology by Poldent was designed to improve the quality of the NiTi alloy and create a safe glide-path file.

- > High flexibility.
- > High resistance to twisting in the root canal
- > Easy to follow the canal path.
- > Safe and quick preparation of the glide path.

Fatigue test (mean time until file fracture)	
Endostar EP Easy Path (Amber) at 20°C	251,3 s
Endostar EP Easy Path (without heat treatment) at 20°C	107,3 s
Endostar EP Easy Path (Amber) at 35°C	175,7 s
Endostar EP Easy Path (without heat treatment) at 35°C	90,7 s

Tests were conducted in 20°C and 35°C.

Research conducted by Poldent.

Endostar EP Easy Path	
14/04, 21 mm, 3 pcs	EPAM041421BL3
14/04, 21 mm, 6 pcs	EPAM041421BL6
14/04, 25 mm, 3 pcs	EPAM041425BL3
14/04, 25 mm, 6 pcs	EPAM041425BL6

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.

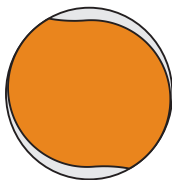
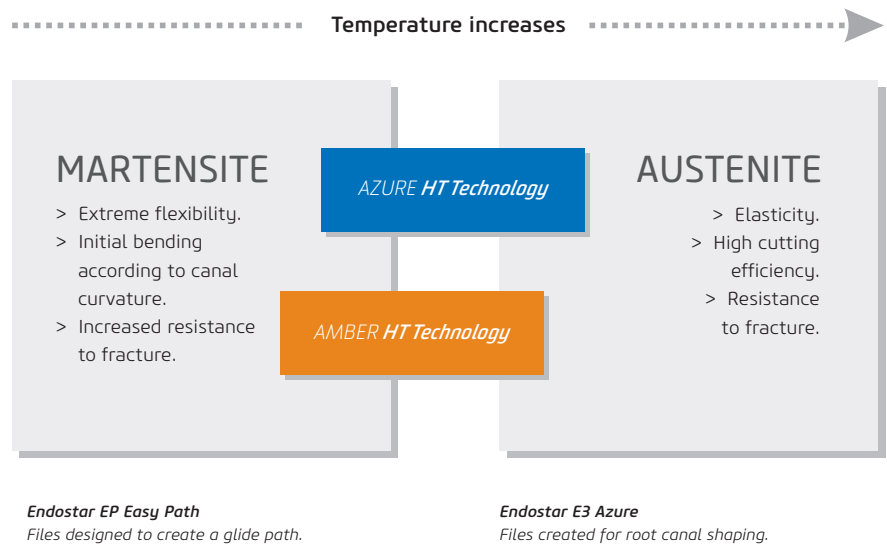
AMBER HT Technology

Sterilization

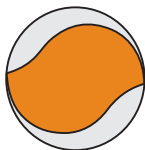
Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Endostar EP Easy Path



Modified Easy Path file cross section,
large instrument core.



Standard S file cross section.

Safety provided by core design

A massive file core which is S-shaped on cross section guarantees safe passage even in strongly calcified canals.

The combination of the newest advances in metallurgy together with the file's design provides maximum safety.

Exceptional taper and ISO size

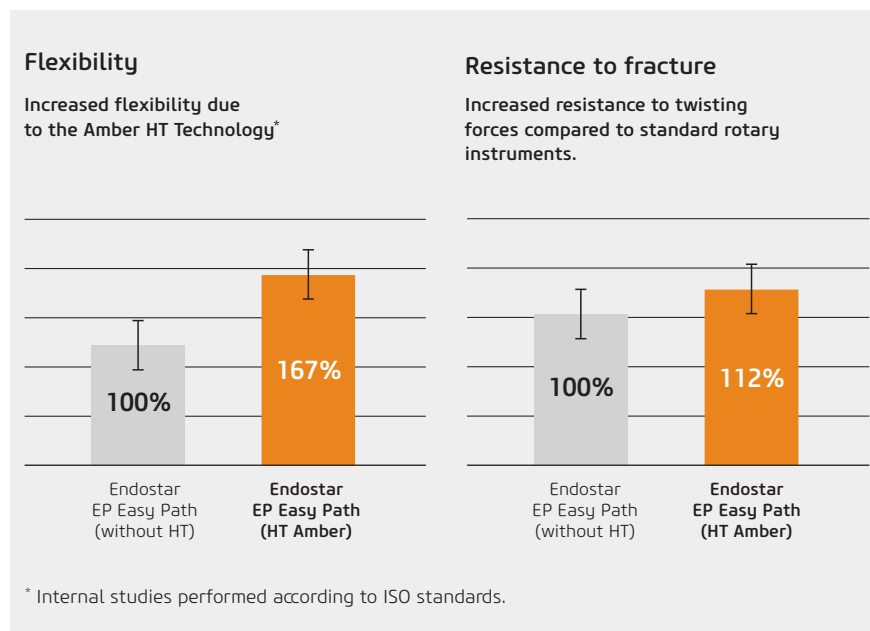
A specially designed variable decreasing taper facilitates a seamless path down the root canal, thanks to decreased resistance in the coronal part of the canal. At the same time, a minimal amount of dentine is removed around the canal orifices.

The use of size ISO 14 at the tip is a compromise between arriving at the apex easily and the ability to safely continue shaping the canal with a larger rotary instrument.



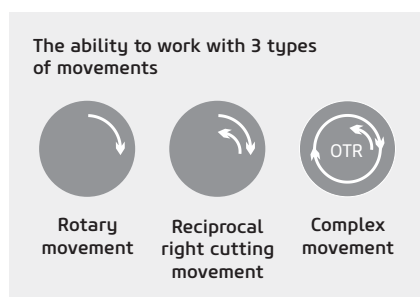
Exceptional, variable, decreasing taper of the Endostar EP Easy Path

Increased working efficiency



Endostar EP Easy Path step-by-step instructions

1. Isolate the tooth with a rubber dam.
2. Prepare straight-line access to the root canal.
3. Use a hand ISO 10 K-file to establish patency and measure working length.
4. Fill the canal with an irrigating solution.
5. Mount the Endostar EP Easy Path instrument to the handpiece and insert into the canal.
6. Move the instrument in an up-and-down motion with very little pressure towards the apical part (the instrument should naturally progress down the canal). Use a pecking motion with an amplitude of 2-3 mm.
7. 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.
8. Irrigate the canal.
9. Repeat steps 6- 8 until working length is reached.
10. Continue shaping the canal with your files of choice, for example the Endostar E3 Azure.



Recommended torque settings

Recommended torque is 1 Ncm (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.



Endostar E3 Azure

Azure HT Technology

Innovation and safety

Endostar E3 Azure is an innovative system created with Azure HT Technology which is our specially designed heat-treatment manufacturing process. The goal of Azure HT Technology was to create files that are extremely flexible and resistant to breaking even in the most complicated clinical cases.

Endostar E3 Azure

- > safe - increased breaking resistance,
- > extremely flexible - follows even the most curved canal path,
- > effective and easy to use.

Azure HT Technology - Color of Power

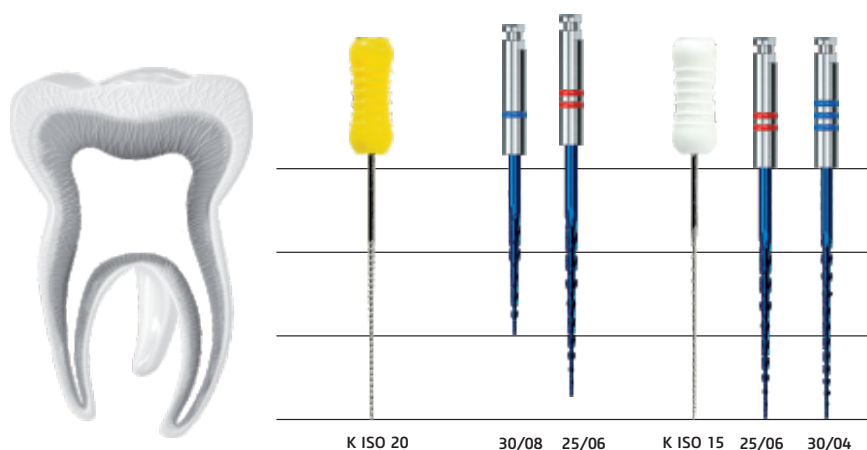
The Azure HT Technology process modifies the crystal structure of the nickel-titanium files. It allows for the martensite to austenite transformation to occur at near body temperature.

This process completely changes the properties of the files. The files can pre-bend before being inserted into the canal. They can easily follow even the most curved canal path, with minimal risk of perforation, ledges, or via falsa.

We aimed at designing a new user-friendly system, which would be flexible, efficient and safe. We had no intention to change doctor's habits. Endostar E3 Azure was designed for 3 common types of motion to achieve a perfect root canal preparation. The system is compatible with most of the handpieces.



The Endostar E3 Azure Basic sequence

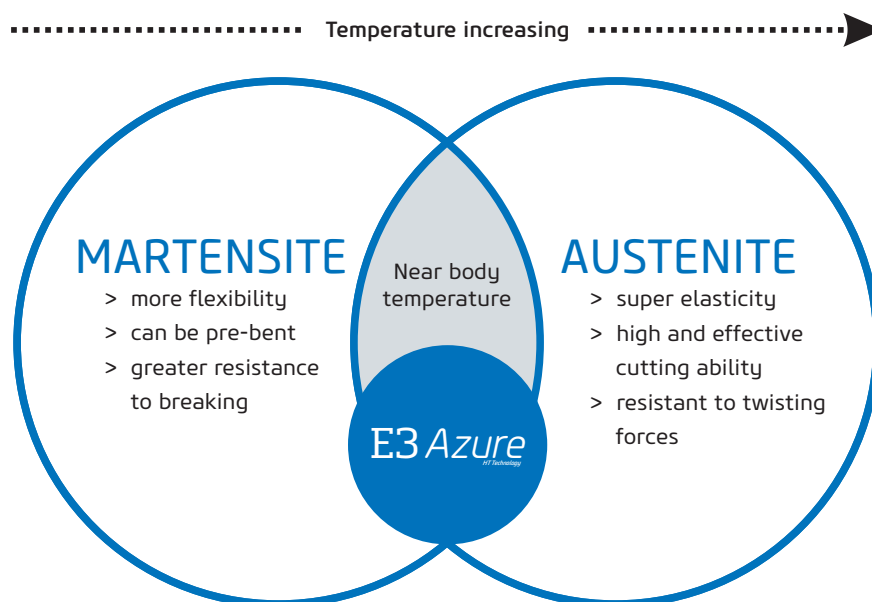




Modified s-shape cross-section

Endostar E3 Azure

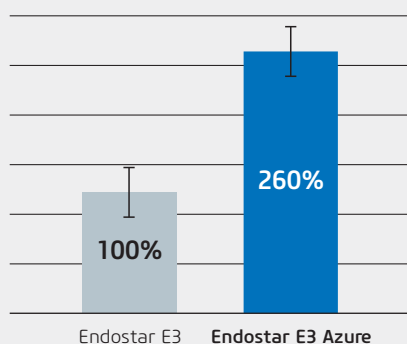
Feel the significant difference.
New and unique.



During root canal treatment (at near body temperature) the file uses the advantages, both of the martensite and austenite phases.

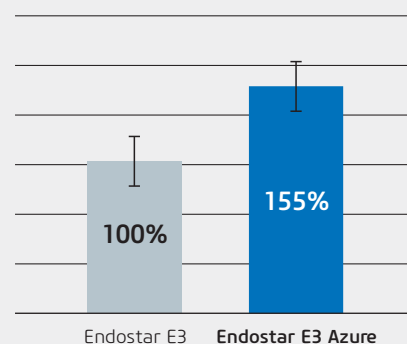
Flexibility

Increased flexibility due to the Azure HT Technology*



Resistance

Increased resistance to twisting forces compared to standard rotary instruments.



* Internal studies performed according to ISO standards.



Recommended number of uses

Endostar E3 Azure instruments can be repeatedly sterilized and used, provided that the visual inspection performed by the dentist prior to use shows that the instrument remains undamaged, is not bent, deformed, does not show signs of blade wear and can be securely attached to the handpiece. Particular attention should be paid to the winding (or excessive twisting) of the windings of the file.

The instrument windings should be regularly spread over the entire length of the blade, if in one point of the blade the windings are too close or too far apart (there is no regularity in the windings growth of the unused instrument), this is a sign that the instrument could break in the canal.

Permanent deformations of the instrument, especially bends, which do not have the form of an arc and have a visible break point should be always controlled before re-use. The heat-treated NiTi alloy allows these instruments to bend in the form of an arc.

In case of doubt, the file can be placed in any environment (fluid, air) at a temperature slightly above 40°C for a few seconds, then the blade should be straightened or curved on a very smooth arc. If the file is still deformed, it means it is permanently deformed and could not be use again. After each use, check that the blade is securely placed in the file grip. If the file has been subjected to high torsion force, especially in highly curved canals the instrument should be used only once.

Dispose of the file which appears to be defective.

Files in the package may vary slightly in color, and the blades may be slightly arched. These differences do not affect the quality of the product. They are the result of the applied heat treatment.



Endostar E3 Azure Basic

Endostar E3 Azure is an innovative system created with Azure HT Technology which is our specially designed heat-treatment manufacturing process. The goal of Azure HT Technology was to create files that are extremely flexible and resistant to breaking even in the most complicated clinical cases.

Endostar E3 Azure

- > safe - increased breaking resistance,
- > extremely flexible - follows even the most curved canal path,
- > effective and easy to use.

Endostar E3 Azure was designed for 3 common types of motion. The system is compatible with most of the handpieces.

- > Rotary movement.
- > Reciprocal right cutting movement.
- > Complex movement (for example OTR).

The size, taper, and length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
No 1	1	8	30	18 mm
No 2	2	6	25	21 / 25 / 29 mm
No 3	3	4	30	21 / 25 / 29 mm

Endostar E3 Azure Basic

Set, 30/08 (18 mm), 25/06, 30/04, 3 pcs, 21 mm	E3AZ21
Set, 30/08 (18 mm), 25/06, 30/04, 3 pcs, 25 mm	E3AZ25
Set, 30/08 (18 mm), 25/06, 30/04, 3 pcs, 29 mm	E3AZ29

Endostar E3 Azure Basic

Refill, 30/08, 6 pcs, 18 mm	E3AZ300818
Refill, 25/06, 6 pcs, 21 mm	E3AZ250621
Refill, 25/06, 6 pcs, 25 mm	E3AZ250625
Refill, 25/06, 6 pcs, 29 mm	E3AZ250629
Refill, 30/04, 6 pcs, 21 mm	E3AZ300421
Refill, 30/04, 6 pcs, 25 mm	E3AZ300425
Refill, 30/04, 6 pcs, 29 mm	E3AZ300429

AZURE HT Technology

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



X-tra configurations

Set, Basic & Small, 6 pcs, 21 mm	E3AZBS21BL
Set, Basic & Small, 6 pcs, 25 mm	E3AZBS25BL
Set, Basic & Small, 6 pcs, 29 mm	E3AZBS29BL



Clinical instruction for use

Rinse the canal each time after the file is used. Clean the files of any debris repeatedly.

1. Cavity preparation.

Prepare the cavity. Use a rubber dam.

2. Location of canals.

Locate all canal orifices. Lubricate the canals.

3. Specifying the working length of the canal.

Specify the working length of the canal using your method of choice.

4. Preparing the canal with hand instruments.

Continue to shape the root canal with hand files up to size 20. This way, you will create a glide path (Endostar EP Easy Path recommended) for rotary instruments. This will also reduce the risk of breaking the rotary file.

5. Preparation of the upper part of the root canal.

Shape the canal orifice with the Endostar E3 Azure Basic File No. 1 (08/30) until you reach a maximum of 1/2 of the total canal depth. Do not use this file when the canal is highly curved (in such cases use the Endostar E3 Azure Small).

6. Preparation of the middle part of the root canal.

Begin to work with file No. 2 (06/25). Perform up-and-down movements. Shape the canal up to 2/3 of the working length. Verify the working length with the hand file size 15 and apex locator. Next, insert file No. 2 at full working length.

7. Shaping the apical part of the root canal.

Use file No. 3 (04/30) to widen the apical portion of the canal until the full working length is reached. Confirm that full working length was reached with hand file size 15 and apex locator. Next, finish work with a nickel-titanium hand file size 30. Check if the file can be inserted at full working length without obstructions, and if wedging can be felt. If a wider preparation of the apex is needed, continue to work with larger hand instruments size 35, 40 etc., or consider using the Endostar E3 Azure Big.

The ability to work with 3 types of movements



Rotary movement



Reciprocal right cutting movement



Complex movement

Recommended torque

File number	Standard torque (Ncm)	Advanced torque (Ncm)
1 (30/08)	2.4	3.0
2 (25/06)	2.1	3.0
3 (30/04)	1.2	2.1

Files should be used with a motor speed of 300 rpm.

The torque settings indicated in the table above are for example only and may vary according to each user preferences and 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.



Endostar E3 Azure Small

Endostar E3 Azure Small is not a separate rotary system. This is an extension of the Endostar E3 Azure Basic for use with very narrow and curved canals. The canal should be first shaped with the use of Endostar E3 Azure Basic files or Endostar E3 Basic

The size, taper, and length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
No 1	2	6	20	21 / 25 / 29 mm
No 2	3	4	25	21 / 25 / 29 mm
No 3	3	4	20	21 / 25 / 29 mm

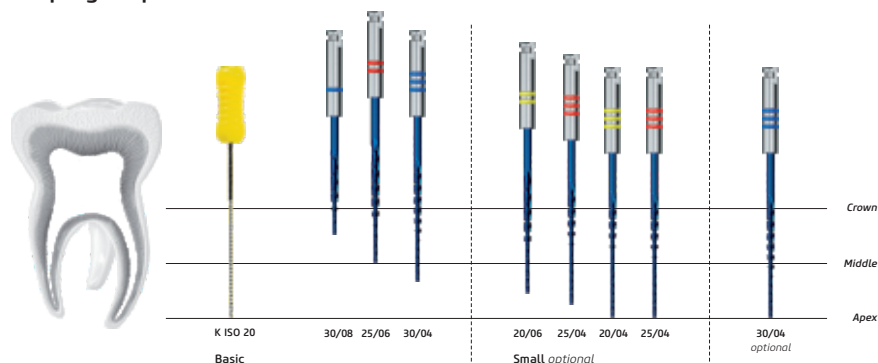
Endostar E3 Azure Small

Set, 20/06, 25/04, 20/04, 3 pcs, 21 mm	E3AZS21
Set, 20/06, 25/04, 20/04, 3 pcs, 25 mm	E3AZS25
Set, 20/06, 25/04, 20/04, 3 pcs, 29 mm	E3AZS29
Refill, 20/06, 6 pcs, 21 mm	E3AZ200621
Refill, 20/06, 6 pcs, 25 mm	E3AZ200625
Refill, 20/06, 6 pcs, 29 mm	E3AZ200629
Refill, 25/04, 6 pcs, 21 mm	E3AZ250421
Refill, 25/04, 6 pcs, 25 mm	E3AZ250425
Refill, 25/04, 6 pcs, 29 mm	E3AZ250429
Refill, 20/04, 6 pcs, 21 mm	E3AZ200421
Refill, 20/04, 6 pcs, 25 mm	E3AZ200425
Refill, 20/04, 6 pcs, 29 mm	E3AZ200429

X-tra configurations

Set, Small & Small, 6 pcs, 21 mm	E3AZSS21BL
Set, Small & Small, 6 pcs, 25 mm	E3AZSS25BL
Set, Small & Small, 6 pcs, 29 mm	E3AZSS29BL

Step by step



Azure HT Technology

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Clinical instruction for use

Rinse the canal each time after the file is used. Clean the files of any debris repeatedly.

1. Prepare the cavity.

Locate the orifices and specify the working length of the canal. Next, prepare the canal with hand instruments as specified in the Endostar E3 Azure Basic clinical instruction for use.

2. Preparation of the upper part of the root canal.

Shape the canal orifice with the use of the Endostar E3 Azure Basic No. 1 (08/30) file until delicate resistance is detectable. Do not apply excessive force to the instrument especially in highly curved canals.

3. Preparation of the middle portion of the root canal.

Begin to work with file No. 2 from the Endostar E3 Azure Basic (06/25). Perform up and down movements. Work to a maximum of 1/2 of working length. Verify the working length with the hand file size 15 and apex locator. Next, with the use of file No. 3 which is part of the E3 Azure Basic (04/30), try to go a few millimeters deeper down the canal. If the file cannot go deeper down the canal, do not force it. Finish the preparation with the Endostar E3 Azure Basic and continue with the Endostar E3 Azure Small.

4. Shaping of the apical part of the root canal.

With the use of file No. 1 from the Endostar E3 Azure Small (06/20) shape the canal a few millimeters down. Do not force the instrument down the canal. Take file No. 2 (04/25) and continue to shape the canal. Stop working 2 mm before reaching full working length. Use file No. 3 (04/20) until the full working length is reached. File No. 3 (04/20) allows shaping even of very narrow and extremely curved canals. Next, go back to file No. 2 (04/25) and use it until the full working length is reached.

5. Widening the root canal.

After checking the apical width with the NiTi hand file, consider widening the canal with file No. 3, which is part of the Endostar E3 Azure Basic (04/30) set. Skip this step in extremely curved canals and finish shaping at size 04/25.

The ability to work with 3 types of movements



Rotary movement



Reciprocal right cutting movement



Complex movement

Recommended torque

File number	Standard torque (Ncm)	Advanced torque (Ncm)
1 (20/06)	1.2	2.1
2 (25/04)	1.2	2.1
3 (20/04)	1.2	2.1

Files should be used with a motor speed of 300 rpm. The torque settings indicated in the table above are for example only and may vary according to each user preferences and 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.



Endostar E3 Azure Big

Endostar E3 Azure Big is not a separate rotary system. This is an extension of the Endostar E3 Azure Basic used for shaping naturally wide canals, for which final preparation to size 30 is not sufficient. It should always be preceded by initial preparation performed with the Endostar E3 Azure Basic or Endostar E3 Basic.

The size, taper, and length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
No 1	3	4	35	21 / 25 / 29 mm
No 2	3	4	40	21 / 25 / 29 mm
No 3	3	4	45	21 / 25 / 29 mm

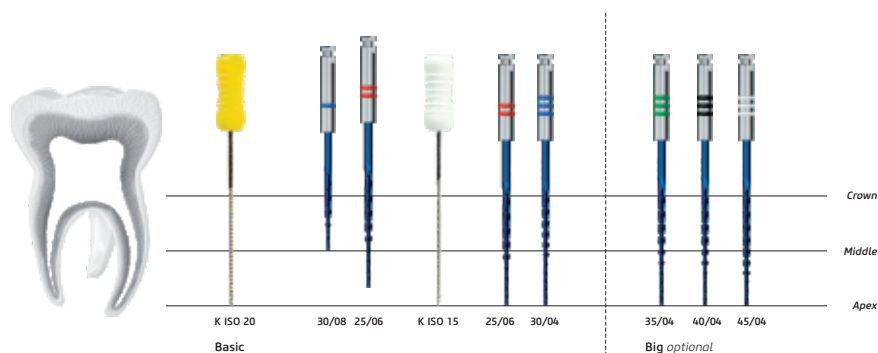
Endostar E3 Azure Big

Set, 35/04, 40/04, 45/04, 3 pcs, 21 mm	E3AZB21
Set, 35/04, 40/04, 45/04, 3 pcs, 25 mm	E3AZB25
Set, 35/04, 40/04, 45/04, 3 pcs, 29 mm	E3AZB29

Endostar E3 Azure Big

Refill, 35/04, 6 pcs, 21 mm	E3AZ350421
Refill, 35/04, 6 pcs, 25 mm	E3AZ350425
Refill, 35/04, 6 pcs, 29 mm	E3AZ350429
Refill, 40/04, 6 pcs, 21 mm	E3AZ400421
Refill, 40/04, 6 pcs, 25 mm	E3AZ400425
Refill, 40/04, 6 pcs, 29 mm	E3AZ400429
Refill, 45/04, 6 pcs, 21 mm	E3AZ450421
Refill, 45/04, 6 pcs, 25 mm	E3AZ450425
Refill, 45/04, 6 pcs, 29 mm	E3AZ450429

Step by step



Azure HT Technology

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Clinical instruction for use

Rinse the canal each time after the file is used. Clean the files of any debris repeatedly.

1. After preparation of the canal with the use of file No. 3 from the set of Endostar E3 Azure Basic is completed, shape the canal with instrument No. 1 from the Endostar E3 Azure Big (04/35) until the full working length is reached. Finish with NiTi hand file size 35.
2. Insert the file at the working length (vertical movement without rotation). If you feel a slight resistance to the further movement of the file at the working length, this means that the preparation can be finished on size 04/35. If you feel that the file does not encounter resistance at the working length, it is advisable to widen the canal (repeat point 2).
3. Shape the canal by inserting instrument No. 2 (04/40) at full working length. Finish with hand NiTi file size 40. Insert the file at the working length (vertical movement without rotation). If you feel a slight resistance to the further movement of the file at the working length, this means that the preparation can be finished on size 04/40. If you feel that the file does not encounter resistance at the working length, it is advisable to expand the canal described in point 3.
4. Shape the canal using instrument No. 3 from the Endostar E3 Azure Big (04/45) until you reach full working length. Finish with hand NiTi file size 45. Insert the file at the working length (vertical movement without rotation). If you feel a slight resistance to the further movement of the file at the working length, this means that the preparation can be finished on size 04/45. If you feel that the file does not encounter resistance at the working length, it is advisable to expand the canal to larger-sized NiTi hand files such as size 50, 55, 60 etc.

Recommended torque

File number	Standard torque (Ncm)	Advanced torque (Ncm)
1 (35/04)	2.1	3.0
2 (40/04)	2.1	3.0
3 (45/04)	2.1	3.0

Files should be used with a motor speed of 300 rpm.

The torque settings indicated in the table above are for example only and may vary according to each user preferences and 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.

The ability to work with 3 types of movements



Rotary movement



Reciprocal right cutting movement



Complex movement



Endostar E3 Basic Rotary System

Endostar E3 Rotary System is a set of modern rotary files used for effective and efficient root canal preparation. They are manufactured from the highest quality nickel-titanium alloy, which provides durability and flexibility. The files can easily fit even strongly curved canals, this way minimizing the risk of canal perforation. The modified shape of the NiTi S file with two 90-degree cutting edges ensures efficient cutting, transport of debris up the canal and decreases preparation time. The inactive tip allows safe preparation, minimizing the risk of a via falsa, perforations and zipping. Easy-to-read taper value (number of stripes on the handle) and ISO size (color stripes) enables effortless use of the instruments. The Endostar E3 Basic Rotary System should be used with a normal width, straight or slightly curved canals.

The size, taper, and length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
No 1	1	8	30	18 mm
No 2	2	6	25	23 / 25 / 28 mm
No 3	3	4	30	23 / 25 / 28 mm

Endostar E3 Basic Rotary System

Set, 30/08 (18 mm), 25/06, 30/04, 3 pcs, 23 mm	E323
Set, 30/08 (18 mm), 25/06, 30/04, 3 pcs, 25 mm	E3
Set, 30/08 (18 mm), 25/06, 30/04, 3 pcs, 28 mm	E328

Endostar E3 Basic Rotary System

Refill, 30/08, 6 pcs, 18 mm	E3300818
Refill, 25/06, 6 pcs, 23 mm	E3250623
Refill, 25/06, 6 pcs, 25 mm	E3250625
Refill, 25/06, 6 pcs, 28 mm	E3250628
Refill, 30/04, 6 pcs, 23 mm	E3300423
Refill, 30/04, 6 pcs, 25 mm	E3300425
Refill, 30/04, 6 pcs, 28 mm	E3300428

Recommended number of uses:

Maximum of 5-10 times, depending on the size (see Table), provided that visual inspection performed by the practitioner prior to use shows that the instrument remains undamaged, is not bent, deformed, does not show signs of blade wear and can be securely attached to the handpiece. If the file has been subjected to high torsion force, especially in highly curved canals the instrument should be used only once.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Recommended number of uses

File number	1	2	3
	10	5	5



Clinical instruction for use

Rinse the canal each time after the file is used. Clean the files of any debris repeatedly.

1. Cavity preparation.

Prepare the cavity. Use a rubber dam.

2. Location of canals.

Locate all canal orifices. Lubricate the canals.

3. Specifying the working length of the canal.

Specify the working length of the canal using your method of choice.

4. Preparing the canal with hand instruments.

Continue to shape the root canal with hand files up to size 20. This way, you will create a glide path (Endostar EP Easy Path recommended) for rotary instruments. This will also reduce the risk of breaking the rotary file.

5. Preparation of the upper part of the root canal.

Shape the canal orifice with the Endostar E3 Basic File No. 1 (08/30) until you reach a maximum of 1/2 of the total canal depth. Do not use this file when the canal is highly curved (in such cases use the Endostar E3 Small Apical Rotary System).

6. Preparation of the middle part of the root canal.

Begin to work with file No. 2 (06/25). Perform up-and-down movements. Shape the canal up to 2/3 of the working length. Inspect the working length with the size 15 hand file and apex locator. Next, insert file No. 2 at full working length.

7. Shaping of the apical part of the root canal.

Use file No. 3 (04/30) to widen the apical portion of the canal until the full working length is reached. Confirm that full working length was reached with hand file size 15 and apex locator. Next, finish work with a nickel-titanium hand file size 30. Check if the file can be inserted at full working length without obstructions, and if wedging can be felt. If a wider preparation of the apex is needed, continue to work with larger hand instruments size 35, 40 etc. or consider using the Endostar E3 Big Apical Rotary System.

Recommended movement



Rotary
movement

Recommended torque

File number	Standard torque (Ncm)	Advanced torque (Ncm)
1 (30/08)	2.4	3.0
2 (25/06)	2.1	3.0
3 (30/04)	0.9	2.1

Files should be used with a motor speed between 150 and 300 rpm. The torque settings indicated in the table above are for example only and may vary according to each user preferences and 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.



Endostar E3 Small Apical Rotary System

Endostar E3 Small Apical Rotary System is not a separate rotary system. This is an extension of the Endostar E3 Basic Rotary System for use with very narrow and curved canals. The canal should be first shaped with the use of Endostar E3 Basic files.

The size, taper, and length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
No 1	2	6	20	23 / 25 / 28 mm
No 2	3	4	25	23 / 25 / 28 mm
No 3	3	4	20	23 / 25 / 28 mm

Endostar E3 Small Apical Rotary System

Set, 20/06, 25/04, 20/04, 3 pcs, 23 mm	E3S23
Set, 20/06, 25/04, 20/04, 3 pcs, 25 mm	E3S
Set, 20/06, 25/04, 20/04, 3 pcs, 28 mm	E3S28

Endostar E3 Small Apical Rotary System

Refill, 20/06, 6 pcs, 23 mm	E3200623
Refill, 20/06, 6 pcs, 25 mm	E3200625
Refill, 20/06, 6 pcs, 28 mm	E3200628
Refill, 25/04, 6 pcs, 23 mm	E3250423
Refill, 25/04, 6 pcs, 25 mm	E3250425
Refill, 25/04, 6 pcs, 28 mm	E3250428
Refill, 20/04, 6 pcs, 23 mm	E3200423
Refill, 20/04, 6 pcs, 25 mm	E3200425
Refill, 20/04, 6 pcs, 28 mm	E3200428

Recommended number of uses:

Maximum of 5 times, provided that visual inspection performed by the practitioner prior to use shows that the instrument remains undamaged, is not bent, deformed, does not show signs of blade wear and can be securely attached to the handpiece. If the file has been subjected to high torsion force, especially in highly curved canals the instrument should be used only once.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Clinical instruction for use

Rinse the canal each time after the file is used. Clean the files of any debris repeatedly.

1. Prepare the cavity, locate the orifices and specify the working length of the canal. Next, prepare the canal with hand instruments as specified in the Endostar E3 Basic Rotary System clinical instruction.

2. Preparation of the upper part of the root canal.

Shape the canal orifice with the use of the Endostar E3 Basic Rotary System No. 1 (08/30) file until delicate resistance is detectable. Do not apply excessive force to the instrument especially in highly curved canals.

3. Preparation of the middle part of the root canal.

Begin to work with file No. 2 from the Endostar E3 Basic Rotary System (06/25). Perform up and down movements. Work to a maximum of 1/2 of working length. Verify the working length with the hand file size 15 and apex locator. Next, with the use of file No. 3 which is part of the E3 Basic Rotary System (04/30), try to go a few millimeters deeper down the canal. If the file cannot go deeper down the canal, do not force it. Finish the preparation with the Endostar E3 Basic Rotary System and continue with the Endostar E3 Small Apical Rotary System.

4. Shaping of the apical part of the root canal.

With the use of file No. 1 from the Endostar E3 Small Apical Rotary System (06/20) shape the canal a few millimeters down. Do not force the instrument down the canal. Take file No. 2 (04/25) and continue to shape the canal. Stop working 2 mm before reaching full working length. Use file No. 3 (04/20) until the full working length is reached. File No. 3 (04/20) allows shaping even of very narrow and extremely curved canals. Next, go back to file No. 2 (04/25) and use it until the full working length is reached.

5. Widening the root canal.

After checking the apical width with the NiTi file, consider widening the canal with file No. 3, which is a part of the Endostar E3 Basic Rotary System (04/30) set. Skip this step in extremely curved canals and finish shaping at size 04/25.

Recommended movement



Rotary
movement

Recommended torque

File number	Standard torque (Ncm)	Advanced torque (Ncm)
1 (20/06)	0.9	2.1
2 (25/04)	0.9	2.1
3 (20/04)	0.9	2.1

Files should be used with a motor speed between 150 and 300 rpm. The torque settings indicated in the table above are for example only and may vary according to each user preferences and 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.



Endostar E3 Big Apical Rotary System

Endostar E3 Big Apical Rotary System is not a separate rotary system. This is an extension of the Endostar E3 Basic Rotary System and is used for shaping wide canals, for which final preparation to size 30 is not sufficient. It should always be preceded by initial preparation performed with the Endostar E3 Basic System.

The size, taper, and length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
No 1	3	4	35	23 / 25 / 28 mm
No 2	3	4	40	23 / 25 / 28 mm
No 3	3	4	45	23 / 25 / 28 mm

Endostar E3 Big Apical Rotary System

Set, 35/04, 40/04, 45/04, 3 pcs, 23 mm	E3B23
Set, 35/04, 40/04, 45/04, 3 pcs, 25 mm	E3B
Set, 35/04, 40/04, 45/04, 3 pcs, 28 mm	E3B28

Endostar E3 Big Apical Rotary System

Refill, 35/04, 6 pcs, 23 mm	E3350423
Refill, 35/04, 6 pcs, 25 mm	E3350425
Refill, 35/04, 6 pcs, 28 mm	E3350428
Refill, 40/04, 6 pcs, 23 mm	E3400423
Refill, 40/04, 6 pcs, 25 mm	E3400425
Refill, 40/04, 6 pcs, 28 mm	E3400428
Refill, 45/04, 6 pcs, 23 mm	E3450423
Refill, 45/04, 6 pcs, 25 mm	E3450425
Refill, 45/04, 6 pcs, 28 mm	E3450428

Recommended number of uses:

Maximum of 5 times, provided that visual inspection performed by the practitioner prior to use shows that the instrument remains undamaged, is not bent, deformed, does not show signs of blade wear and can be securely attached to the handpiece. If the file has been subjected to high torsion force, especially in highly curved canals the instrument should be used only once.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Clinical instruction for use

Rinse the canal each time after the file is used. Clean the files of any debris repeatedly.

1. After preparation of the canal with the use of file No. 3 from the set of Endostar E3 Basic is completed, determine the apex width. For this purpose, use the NiTi hand file size 30. Insert it at full working length and gently twist it. If the file rotates - this means that the canal is wider than size 30 and should be expanded.
2. Shape the canal with instrument No. 1 from the Endostar E3 Big Apical Rotary System (04/35) until the full working length is reached.
3. Shape the canal by inserting instrument No. 2 (04/40) at full working length.
4. Check the width of the tip using the NiTi hand file size 40. Insert the instrument at full working length and apply a gentle twist. If the file does not rotate, stop shaping the canal. However, if the instrument still rotates - continue with shaping.
5. Shape the canal using instrument No. 3 from the Endostar E3 Big Apical Rotary System (04/45) until you reach full working length.
6. Check the apex width with the NiTi hand file size 45. Insert the instrument at full working length and apply a gentle twist. If the instrument does not rotate, stop shaping the canal. However, if the hand file does rotate, continue shaping with larger-sized NiTi hand files such as size 50, 55, 60 etc.

Recommended torque

File number	Standard torque (Ncm)	Advanced torque (Ncm)
1 (35/04)	2.1	3.0
2 (40/04)	2.1	3.0
3 (45/04)	2.1	3.0

Files should be used with a motor speed between 150 and 300 rpm.

The torque settings indicated in the table above are for example only and may vary according to each user preferences and 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.

Recommended movement



Rotary
movement



Endostar REvision

Endostar REvision is a new rotary system for re-endo canal treatments using the crown-down method. All instruments are manufactured from a highest quality nickel-titanium alloy, which additionally subject to a special heat treatment called AZURE HT Technology by Poldent. This technology made it possible to achieve very desirable features of the instruments.

Endostar REvision files in HT technology:

- > are extremely flexible
- > safe due to fracture resistance
- > at the same time strong and very effective in reendo treatments

The system consists of 3 files marked with stripes on the handle:

- > 08/30- I
- > 06/25-II
- > 04/20-III

The size, taper, and length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
Nr 1	1	08	30	18 mm
Nr 2	2	06	25	21 / 25 mm
Nr 3	3	04	20	21 / 25 mm

Endostar REvision

Set, 30/08, 25/06, 20/04, 21 mm, 3 pcs	REV21BL
Set, 30/08, 25/06, 20/04, 25 mm, 3 pcs	REV25BL
Refill, 30/08, 18 mm, 6 pcs	REV083018BL
Refill, 25/06, 21 mm, 6 pcs	REV062521BL
Refill, 25/06, 25 mm, 6 pcs	REV062525BL
Refill, 20/04, 21 mm, 6 pcs	REV042021BL
Refill, 20/04, 25 mm, 6 pcs	REV042025BL

Recommended number of usage

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

Dispose the file which appears to be defective.

AZURE HT Technology

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Clinical instruction for use

Root canal preparation:

- A. Locate the canal which requires filling removal.
- B. Insert the Endostar REvision #1 file mounted onto the endodontic handpiece into the canal.
- C. 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.
- D. 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,
- E. Irrigate the canal.
- F. You may consider using a gutta-percha dissolving agent 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.
- G. 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.
- H. Shape 1/3 of the apical part of the canal with hand files.
- I. 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 precurve them.
- J. Finish shaping the canal with a file suitable to the clinical situation.

Recommended torque

File number	Torque (Ncm)
1 (08/30)	2.0
2 (06/25)	2.0
3 (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.

The ability to work with 3 types of movements



Rotary movement



Reciprocal right cutting movement



Complex movement



Endostar RE Re Endo Rotary System

Endostar RE Re Endo Rotary System is a rotary system used to efficiently remove old fillings from the canal during root canal retreatment. The kit contains 4 instruments, with tapers from 04 to 12 and size 30. It was designed to work with the crown-down technique.

The kit includes:

- > Two K-type files with a square cross-section, with 4 cutting edges and good elasticity.
- > Two files with a S-type blade with two edges distributed symmetrically 180 degrees to the axis of symmetry and a cutting channel at an angle of 90 degrees. They present with great cutting ability, a non-cutting apex and very good elasticity.

The size, taper and the length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
No 1	1	12	30	17 mm
No 2	2	08	30	23 / 25 / 28 mm
No 3	3	06	30	23 / 25 / 28 mm
No 4	4	04	30	23 / 25 / 28 mm

Endostar RE Re Endo Rotary System

Intro Set, 30/12 (17 mm), 30/08, 30/06, 30/04, 4 pcs, 23 mm	RE23
Intro Set, 30/12 (17 mm), 30/08, 30/06, 30/04, 4 pcs, 25 mm	RE
Intro Set, 30/12 (17 mm), 30/08, 30/06, 30/04, 4 pcs, 28 mm	RE28

Endostar RE Re Endo Rotary System

Refills, 30/12, 6 pcs, 17 mm	RE301217
Refills, 30/08, 6 pcs, 23 mm	RE300823
Refills, 30/06, 6 pcs, 23 mm	RE300623
Refills, 30/04, 6 pcs, 23 mm	RE300423
Refills, 30/08, 6 pcs, 25 mm	RE300825
Refills, 30/06, 6 pcs, 25 mm	RE300625
Refills, 30/04, 6 pcs, 25 mm	RE300425
Refills, 30/08, 6 pcs, 28 mm	RE300828
Refills, 30/06, 6 pcs, 28 mm	RE300628
Refills, 30/04, 6 pcs, 28 mm	RE300428

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Clinical instruction for use

Rinse the canal each time after the file is used. Clean the files of any debris repeatedly.

- > Make sure you have proper access to the gutta-percha filled canal.
- > Add a few drops of the gutta-percha dissolving agent.
- > Use the Endostar RE Re Endo Rotary System - numbers 1-4 combined with the crown-down technique. Starting with file No. 1, then work your way down to file No. 4.
- > Make sure the old filling is entirely removed from the canal. We recommend that an x-ray image is taken.
- > Perform final cleaning of the canal. Rinse with solutions normally used for canal rinsing during endodontic treatment.

Recommended torque	
File number	Torque (Ncm)
1 (30/12)	3.0 - 4.0
2 (30/08)	2.0 - 3.0
3 (30/06)	1.0 - 2.0
4 (30/04)	0.5 - 1.0

Files should be used with motor speed between 150 and 300 rpm.

The torque settings indicated in the table above are for example only and may vary according to each user preferences and 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.

Recommended number of use:

Maximum of 5-10 times, depending on the size (see Table), provided that visual inspection performed by the practitioner prior to use shows that the instrument remains undamaged, is not bent, deformed, does not show signs of blade wear and can be securely attached to the handpiece. If the file has been subjected to high torsion force, especially in highly curved canals the instrument should be used only once.

Recommended number of use				
File number	1	2	3	4
	10	10	5	5

Recommended movement



Rotary
movement



Endostar NT2 NiTi Two Rotary System

Endostar NT2 NiTi Two Rotary System is an economical nickel-titanium file system for simple and fast mechanical shaping of the root canals, mainly with the traditional method. The system consists of 6 files. It is characterized by a constant 02 taper and a non-cutting tip. The set is most commonly used as an extension of the Endostar E3 Rotary System.

The size, taper, and length of individual files

Instrument	Number of stripes	Taper (%)	ISO size	Length
No 1	2	02	15	23 / 25 mm
No 2	2	02	20	23 / 25 mm
No 3	2	02	25	23 / 25 mm
No 4	2	02	30	23 / 25 mm
No 5	2	02	35	23 / 25 mm
No 6	2	02	40	23 / 25 mm

Endostar NT2 NiTi Two Rotary System

Set, 15/02, 20/02, 25/02, 30/02, 35/02, 40/02, 6 pcs, 23 mm	NT223
Set, 15/02, 20/02, 25/02, 30/02, 35/02, 40/02, 6 pcs, 25 mm	NT2

Endostar NT2 NiTi Two Rotary System

Refill, 15/02, 6 pcs, 23 mm	NT2150223
Refill, 20/02, 6 pcs, 23 mm	NT2200223
Refill, 25/02, 6 pcs, 23 mm	NT2250223
Refill, 30/02, 6 pcs, 23 mm	NT2300223
Refill, 35/02, 6 pcs, 23 mm	NT2350223
Refill, 40/02, 6 pcs, 23 mm	NT2400223
Refill, 15/02, 6 pcs, 25 mm	NT2150225
Refill, 20/02, 6 pcs, 25 mm	NT2200225
Refill, 25/02, 6 pcs, 25 mm	NT2250225
Refill, 30/02, 6 pcs, 25 mm	NT2300225
Refill, 35/02, 6 pcs, 25 mm	NT2350225
Refill, 40/02, 6 pcs, 25 mm	NT2400225

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Clinical instruction for use

Rinse the canal each time after the file is used. Clean the files of any debris repeatedly.

- > Prepare the cavity. Use a rubber dam.
- > Locate all canal orifices. Fill the canal orifice with a lubricant.
- > Specify the working length of the canal with your method of choice.
- > Make sure all canals are patent up to a depth of 2-3 mm from the apex with the help of the K15 file. For very curved and narrow canals, use a different hand instrument, size 06, 08, or 10.
- > Create access to the canal orifice using rotary files with a greater taper (06, 08) or with the use of Gates-Glidden drills.
- > Start working with the 02/15 or 02/20 file until you reach the full working length and then switch to other instruments (02/25, 02/30, etc.) until you reach the desired canal size.

Recommended torque	
File number	Torque (Ncm)
1 (15/02)	0.3
2 (20/02)	0.3
3 (25/02)	0.3 - 0.4
4 (30/02)	0.4 - 0.5
5 (35/02)	0.5 - 0.6
6 (40/02)	0.6 - 0.7

Files should be used with a motor speed between 150 and 300 rpm.

The torque settings indicated in the table above are for example only and may vary according to each user preferences and 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.

Recommended number of uses:

Maximum of 5 times, provided that visual inspection performed by the practitioner prior to use shows that the instrument remains undamaged, is not bent, deformed, does not show signs of blade wear and can be securely attached to the handpiece. If the file has been subjected to high torsion force, especially in highly curved canals the instrument should be used only once.

Recommended movement




Rotary
movement



Endostar S-files

Endostar S-files are the most effective instruments with a very high cutting ability for root canal instrumentation. They are designed as a composition of two cutting edges of an H-file. The S-files are used to enlarge the canal with an up and down movement or a rotational cutting action.

- > Great cutting ability.
- > Very high removal of dentin debris.
- > Precise shape made from very hard, yet flexible stainless-steel alloy.
- > 2 cutting edges angled 90° (edges distributed symmetrically at 180° on the long axis).
- > Cross-section: 
- > Non-cutting tip.
- > Good flexibility.
- > Millimeter scale etched on the blade (18 to 25 mm from the tip), which facilitates the determination of the working length.
- > Ergonomic handle with ISO symbols.

Endostar S-files, 6 pcs

Size	21 mm	25 mm	28 mm	31 mm
Assorted 15-40	BSFH154021	BSFH154025	BSFH154028	BSFH154031
Assorted 45-80	BSFH458021	BSFH458025	BSFH458028	BSFH458031
Assorted 90-140	BSFH901421	BSFH901425	BSFH901428	on request
6	BSFH000621	BSFH000625	BSFH000628	BSFH000631
8	BSFH000821	BSFH000825	BSFH000828	BSFH000831
10	BSFH001021	BSFH001025	BSFH001028	BSFH001031
15	BSFH001521	BSFH001525	BSFH001528	BSFH001531
20	BSFH002021	BSFH002025	BSFH002028	BSFH002031
25	BSFH002521	BSFH002525	BSFH002528	BSFH002531
30	BSFH003021	BSFH003025	BSFH003028	BSFH003031
35	BSFH003521	BSFH003525	BSFH003528	BSFH003531
40	BSFH004021	BSFH004025	BSFH004028	BSFH004031
45	BSFH004521	BSFH004525	BSFH004528	BSFH004531
50	BSFH005021	BSFH005025	BSFH005028	BSFH005031
55	BSFH005521	BSFH005525	BSFH005528	BSFH005531
60	BSFH006021	BSFH006025	BSFH006028	BSFH006031
70	BSFH007021	BSFH007025	BSFH007028	BSFH007031
80	BSFH008021	BSFH008025	BSFH008028	BSFH008031
90	BSFH009021	BSFH009025	BSFH009028	on request
100	BSFH010021	BSFH010025	BSFH010028	on request
110	BSFH011021	BSFH011025	BSFH011028	on request
120	BSFH012021	BSFH012025	BSFH012028	on request
130	BSFH013021	BSFH013025	BSFH013028	on request
140	BSFH014021	BSFH014025	BSFH014028	on request

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.




Gli strumenti sono disponibili in blister oppure in astuccio di plastica.



Endostar NiTi S-files

Endostar NiTi S-files are made of nickel-titanium alloy. They are extremely flexible, universal and safe. Their resistance to bending is around 10 times greater than the resistance of stainless-steel instruments. NiTi S-files are recommended for the treatment of curved root canals, which can't be treated with stainless steel instruments. They are very efficient in root canal instrumentation and have a great cutting ability.

- > Precisely cut shape.
- > Made of nickel-titanium alloy with the memory shape.
- > Great cutting ability.
- > Two cutting edges angled 90° (edges distributed symmetrically at 180° on the long axis).
- > Cross-section: 
- > Great dentine debris extraction.
- > Great flexibility ensured by nickel-titanium alloy.
- > Non-cutting tip.
- > Millimeter scale etched on the blade (18 to 25 mm from the tip), which facilitates the determination of the working length.
- > Ergonomic handle with ISO symbols.

Endostar NiTi S-files, 6 pcs				
Size	21 mm	25 mm	28 mm	31 mm
Assorted 15-40	BNFH154021	BNFH154025	BNFH154028	on request
Assorted 45-80	BNFH458021	BNFH458025	BNFH458028	on request
10	BNFH001021	BNFH001025	BNFH001028	on request
15	BNFH001521	BNFH001525	BNFH001528	on request
20	BNFH002021	BNFH002025	BNFH002028	on request
25	BNFH002521	BNFH002525	BNFH002528	on request
30	BNFH003021	BNFH003025	BNFH003028	on request
35	BNFH003521	BNFH003525	BNFH003528	on request
40	BNFH004021	BNFH004025	BNFH004028	on request
45	BNFH004521	BNFH004525	BNFH004528	on request
50	BNFH005021	BNFH005025	BNFH005028	on request
55	BNFH005521	BNFH005525	BNFH005528	on request
60	BNFH006021	BNFH006025	BNFH006028	on request
70	BNFH007021	BNFH007025	BNFH007028	on request
80	BNFH008021	BNFH008025	BNFH008028	on request

Instruments available in blister packs or plastic boxes.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Endostar H-files

Endostar H-files are very effective and invasive hand instruments for root canal instrumentation. The H-file has a great cutting ability, and it is designed in a shape proposed by Dr Hedström.

The Hedström file is designed to be used with longitudinal filling and rotary cutting (up to 1/4 turn) actions. It is particularly recommended in pediatric dentistry.

- > Great cutting ability.
- > One cutting edge angled at 90°.
- > Cross-section: ●
- > Extraction of dentine debris improved by increasing feed of cutting edge.
- > Precisely cut shape made of very hard, yet flexible stainless steel alloy.
- > Flexibility improved due to the cylindrical shape.
- > Ergonomic handle with ISO symbols.



Endostar H-files, 6 pcs

Size	21 mm	25 mm	28 mm	31 mm
Assorted 15-40	BHFH154021	BHFH154025	BHFH154028	BHFH154031
Assorted 45-80	BHFH458021	BHFH458025	BHFH458028	BHFH458031
Assorted 90-140	BHFH901421	BHFH901425	BHFH901428	on request
6	BHFH000621	BHFH000625	BHFH000628	BHFH000631
8	BHFH000821	BHFH000825	BHFH000828	BHFH000831
10	BHFH001021	BHFH001025	BHFH001028	BHFH001031
15	BHFH001521	BHFH001525	BHFH001528	BHFH001531
20	BHFH002021	BHFH002025	BHFH002028	BHFH002031
25	BHFH002521	BHFH002525	BHFH002528	BHFH002531
30	BHFH003021	BHFH003025	BHFH003028	BHFH003031
35	BHFH003521	BHFH003525	BHFH003528	BHFH003531
40	BHFH004021	BHFH004025	BHFH004028	BHFH004031
45	BHFH004521	BHFH004525	BHFH004528	BHFH004531
50	BHFH005021	BHFH005025	BHFH005028	BHFH005031
55	BHFH005521	BHFH005525	BHFH005528	BHFH005531
60	BHFH006021	BHFH006025	BHFH006028	BHFH006031
70	BHFH007021	BHFH007025	BHFH007028	BHFH007031
80	BHFH008021	BHFH008025	BHFH008028	BHFH008031
90	BHFH009021	BHFH009025	BHFH009028	on request
100	BHFH010021	BHFH010025	BHFH010028	on request
110	BHFH011021	BHFH011025	BHFH011028	on request
120	BHFH012021	BHFH012025	BHFH012028	on request
130	BHFH013021	BHFH013025	BHFH013028	on request
140	BHFH014021	BHFH014025	BHFH014028	on request

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Instruments available in blister packs or plastic boxes.



Endostar NiTi H-files

Endostar NiTi H-files are flexible, safe and invasive. They are made of nickel-titanium alloy. Their resistance to bending is around 10 times greater than the resistance of stainless-steel instruments.

Endostar NiTi H-files are recommended for the treatment of curved root canals, which can't be treated with stainless steel instruments. They are very effective, and they have great cutting ability.

- > Precisely cut shape.
- > Made of nickel-titanium alloy with the memory shape.
- > Very good cutting ability.
- > One cutting edge angled 90°.
- > Cross-section: ●
- > Extraction of dentine debris improved by increasing feed of cutting edge.
- > Very good flexibility, greater than stainless steel instruments.
- > Ergonomic handle with ISO symbols.

Endostar NiTi H-files, 6 pcs				
Size	21 mm	25 mm	28 mm	31 mm
Assorted 15-40	BNHH154021	BNHH154025	BNHH154028	on request
Assorted 45-80	BNHH458021	BNHH458025	BNHH458028	on request
15	BNHH001521	BNHH001525	BNHH001528	on request
20	BNHH002021	BNHH002025	BNHH002028	on request
25	BNHH002521	BNHH002525	BNHH002528	on request
30	BNHH003021	BNHH003025	BNHH003028	on request
35	BNHH003521	BNHH003525	BNHH003528	on request
40	BNHH004021	BNHH004025	BNHH004028	on request
45	BNHH004521	BNHH004525	BNHH004528	on request
50	BNHH005021	BNHH005025	BNHH005028	on request
55	BNHH005521	BNHH005525	BNHH005528	on request
60	BNHH006021	BNHH006025	BNHH006028	on request
70	BNHH007021	BNHH007025	BNHH007028	on request
80	BNHH008021	BNHH008025	BNHH008028	on request

Instruments available in blister packs or plastic boxes.


Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Endostar K-files

Endostar K-files are safe instruments with four cutting edges. They are recommended for finding and shaping narrow canals. This type of the instrument has been designed in a shape proposed by dr Kerr, and has been made from stainless-steel alloy.

- > 4 cutting edges.
- > Made of stainless steel.
- > Cross section: 
- > Good flexibility.
- > Safe, noninvasive (not too aggressive).
- > Ergonomic handle with ISO symbols.



Endostar K-files, 6 pcs

Size	21 mm	25 mm	28 mm	31 mm
Assorted 15-40	BKFH154021	BKFH154025	BKFH154028	BKFH154031
Assorted 45-80	BKFH458021	BKFH458025	BKFH458028	BKFH458031
Assorted 90-140	BKFH901421	BKFH901425	BKFH901428	on request
6	BKFH000621	BKFH000625	BKFH000628	BKFH000631
8	BKFH000821	BKFH000825	BKFH000828	BKFH000831
10	BKFH001021	BKFH001025	BKFH001028	BKFH001031
15	BKFH001521	BKFH001525	BKFH001528	BKFH001531
20	BKFH002021	BKFH002025	BKFH002028	BKFH002031
25	BKFH002521	BKFH002525	BKFH002528	BKFH002531
30	BKFH003021	BKFH003025	BKFH003028	BKFH003031
35	BKFH003521	BKFH003525	BKFH003528	BKFH003531
40	BKFH004021	BKFH004025	BKFH004028	BKFH004031
45	BKFH004521	BKFH004525	BKFH004528	BKFH004531
50	BKFH005021	BKFH005025	BKFH005028	BKFH005031
55	BKFH005521	BKFH005525	BKFH005528	BKFH005531
60	BKFH006021	BKFH006025	BKFH006028	BKFH006031
70	BKFH007021	BKFH007025	BKFH007028	BKFH007031
80	BKFH008021	BKFH008025	BKFH008028	BKFH008031
90	BKFH009021	BKFH009025	BKFH009028	on request
100	BKFH010021	BKFH010025	BKFH010028	on request
110	BKFH011021	BKFH011025	BKFH011028	on request
120	BKFH012021	BKFH012025	BKFH012028	on request
130	BKFH013021	BKFH013025	BKFH013028	on request
140	BKFH014021	BKFH014025	BKFH014028	on request

Instruments available in blister packs or plastic boxes.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Endostar NiTi K-files

Endostar NiTi K-files are made of nickel-titanium alloy and are very flexible and safe. Their resistance to bending is around 10 times greater than the resistance of stainless-steel instruments.

They are recommended for the treatment of curved root canals, which can't be treated with stainless steel instruments. The great flexibility of NiTi instruments decreases the tendency to straighten the root canal. The risk of wedging instruments or perforation of the root canal is lower.

- > Made of nickel-titanium alloy with the memory shape.
- > 4 cutting edges.
- > Cross-section: ■
- > Very good flexibility.
- > Very safe, noninvasive.
- > Ergonomic handle with ISO symbols.

Endostar NiTi K-files, 6 pcs				
Size	21 mm	25 mm	28 mm	31 mm
Assorted 15-40	BNKH154021	BNKH154025	BNKH154028	on request
Assorted 45-80	BNKH458021	BNKH458025	BNKH458028	on request
15	BNKH001521	BNKH001525	BNKH001528	on request
20	BNKH002021	BNKH002025	BNKH002028	on request
25	BNKH002521	BNKH002525	BNKH002528	on request
30	BNKH003021	BNKH003025	BNKH003028	on request
35	BNKH003521	BNKH003525	BNKH003528	on request
40	BNKH004021	BNKH004025	BNKH004028	on request
45	BNKH004521	BNKH004525	BNKH004528	on request
50	BNKH005021	BNKH005025	BNKH005028	on request
55	BNKH005521	BNKH005525	BNKH005528	on request
60	BNKH006021	BNKH006025	BNKH006028	on request
70	BNKH007021	BNKH007025	BNKH007028	on request
80	BNKH008021	BNKH008025	BNKH008028	on request

Instruments available in blister packs or plastic boxes.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Endostar K-reamers

Endostar K-reamers are used to enlarge root canals and are most effective as rotary cutting instruments.

- > Very high ability of dentine debris removal.
- > High ability to enlarge the root canal.
- > 3 cutting edges.
- > Cross-section: ▲
- > Made from stainless-steel alloy.
- > Ergonomic handle with ISO symbols.

Endostar K-reamers, 6 pcs

Size	21 mm	25 mm	28 mm	31 mm
Assorted 15-40	BKRH154021	BKRH154025	BKRH154028	BKRH154031
Assorted 45-80	BKRH458021	BKRH458025	BKRH458028	BKRH458031
Assorted 90-140	BKRH901421	BKRH901425	BKRH901428	on request
6	BKRH000621	BKRH000625	BKRH000628	BKRH000631
8	BKRH000821	BKRH000825	BKRH000828	BKRH000831
10	BKRH001021	BKRH001025	BKRH001028	BKRH001031
15	BKRH001521	BKRH001525	BKRH001528	BKRH001531
20	BKRH002021	BKRH002025	BKRH002028	BKRH002031
25	BKRH002521	BKRH002525	BKRH002528	BKRH002531
30	BKRH003021	BKRH003025	BKRH003028	BKRH003031
35	BKRH003521	BKRH003525	BKRH003528	BKRH003531
40	BKRH004021	BKRH004025	BKRH004028	BKRH004031
45	BKRH004521	BKRH004525	BKRH004528	BKRH004531
50	BKRH005021	BKRH005025	BKRH005028	BKRH005031
55	BKRH005521	BKRH005525	BKRH005528	BKRH005531
60	BKRH006021	BKRH006025	BKRH006028	BKRH006031
70	BKRH007021	BKRH007025	BKRH007028	BKRH007031
80	BKRH008021	BKRH008025	BKRH008028	BKRH008031
90	BKRH009021	BKRH009025	BKRH009028	on request

Instruments available in blister packs or plastic boxes.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Endostar NiTi K-reamers

Endostar NiTi K-reamers made of nickel-titanium alloy are used to enlarge the root canals. They are more flexible than stainless steel instruments (more than 10 times). They are recommended to check the patency and width of root canals.

NiTi K-reamers are used as rotary cutting instruments more than NiTi K-files. The nickel-titanium alloy is more resistant than steel, therefore instruments which are made of this alloy can enlarge 2-3 times more root canals.

- > Very good dentine debris removal.
- > 3 cutting edges.
- > Cross-section: ▲
- > Made of nickel-titanium alloy with shape memory.
- > Relatively low flexibility better than stainless instruments.
- > Ergonomic handle with ISO symbols.

Endostar NiTi K-reamers, 6 pcs				
Size	21 mm	25 mm	28 mm	31 mm
Assorted 15-40	BNRH154021	BNRH154025	BNRH154028	on request
Assorted 45-80	BNRH458021	BNRH458025	BNRH458028	on request
15	BNRH001521	BNRH001525	BNRH001528	on request
20	BNRH002021	BNRH002025	BNRH002028	on request
25	BNRH002521	BNRH002525	BNRH002528	on request
30	BNRH003021	BNRH003025	BNRH003028	on request
35	BNRH003521	BNRH003525	BNRH003528	on request
40	BNRH004021	BNRH004025	BNRH004028	on request
45	BNRH004521	BNRH004525	BNRH004528	on request
50	BNRH005021	BNRH005025	BNRH005028	on request
55	BNRH005521	BNRH005525	BNRH005528	on request
60	BNRH006021	BNRH006025	BNRH006028	on request
70	BNRH007021	BNRH007025	BNRH007028	on request
80	BNRH008021	BNRH008025	BNRH008028	on request

Instruments available in blister packs or plastic boxes.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



**Sterilization**

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.

**Endostar Unique S-files**

Endostar Unique S-files are very special endodontic instruments. Unique S-file has a 'S file' configuration in cross section and it has non-standard ISO sizes- so-called 'half-size'. It helps to match the file to a specific clinical case.

- > Non-standard ISO-sizes: 12.5, 17.5 and 22.5.
- > Great cutting ability.
- > Great removal of dentine debris.
- > 2 cutting edges angled 90° (edges distributed symmetrically at 180° on the long axis).
- > Cross-section: ●
- > Precisely cut shape made of very hard, yet flexible stainless-steel alloy,
- > Avoidance of making steps in the root canal.
- > Non-cutting tip.
- > Millimeter scale etched on the blade (18 to 25 mm from the tip), which facilitates the determination of the working length.

Endostar Unique S-files, 6 pcs

Size	21 mm	25 mm
Set 12.5, 17.5, 22.5	BUSF122221	BUSF122225
12.5	BUSF001221	BUSF001225
17.5	BUSF001721	BUSF001725
22.5	BUSF002221	BUSF002225

Instruments available in blister packs or plastic boxes.

**Sterilization**

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.

**Endostar Barbed Broaches**

Endostar Barbed Broaches are basic hand instruments. These instruments represent the oldest forms of root canal instruments. Broaches are used to extirpate the vital pulp. The working part consists of 40 spirally arranged flexible barbs.

- > Great pulp removal.
- > Working part made of soft stainless steel.
- > Cross-section: ★
- > Spirally arranged barbs.
- > Ergonomic handle with ISO symbols.

Barbed Broaches, 6 pcs

Size	25 mm	Size	25 mm
Set 01-06	BBBR010625	03	BBBR000325
00	BBBR000025	04	BBBR000425
01	BBBR000125	05	BBBR000525
02	BBBR000225	06	BBBR000625

Instruments available in blister packs or plastic boxes.

**Sterilization**

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.

**Endostar Unique K-files**

Endostar Unique K-files are very special endodontic instruments. Unique K-file has a 'K file' configuration in cross section, and it has non-standard ISO sizes- so-called 'half-size'. It helps to match the file to a specific clinical case. Using Unique K-files helps to avoid steps during the root canal preparation. There are the following sizes of the instruments: 12,5; 17,5 and 22,5. Endostar Unique K-files are safe instruments with four cutting edges. Traditionally, this group of instruments has been made from stainless steel, and they were designed in a shape proposed by Dr Kerr.

- > Non-standard ISO-sizes: 12,5; 17,5 and 22,5.
- > 4 cutting edges.
- > Made of stainless steel.
- > Square cross section: ■
- > Good flexibility.
- > Safe, noninvasive (not too aggressive).

Endostar Unique K-files, 6 pcs

Size	21 mm	25 mm
Set 12.5, 17.5, 22.5	BUKF122221	BUKF122225
12.5	BUKF001221	BUKF001225
17.5	BUKF001721	BUKF001725
22.5	BUKF002221	BUKF002225

Instruments available in blister packs or plastic boxes.

**Sterilization**

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.

**Endostar Canal Locator**

Endostar Canal Locator are special endodontic instruments recommended for finding, localizing and penetrating root canals. Endostar Canal Locators are thin, flexible and firm. They are very efficient in narrow and curved root canals.

- > Cross-section: ●
- > Good flexibility, non-cutting tip.
- > Millimeter scale etched on the blade which facilitates the determination of the working length.
- > Safe, noninvasive (not too aggressive).

Endostar Canal Locator, 6 pcs

Size	18 mm	21 mm	25 mm
Set 6, 8, 10	BCLH061018	BCLH061021	BCLH061025
6	BCLH000618	BCLH000621	BCLH000625
8	BCLH000818	BCLH000821	BCLH000825
10	BCLH001018	BCLH001021	BCLH001025

Instruments available in blister packs or plastic boxes.





Endostar Spreader Sonic Files

Endostar Spreader Sonic Files are instruments recommended for irrigation and disinfection of root canals. They can be used also during the removal of broken instruments from root canal. Sonic Files can be used only with ultrasound devices.

- > Made of special stainless steel.
- > Use of cavitation.
- > Sonic files are designed to be used: up and down.
- > Activation of root canals irrigants.

Important warnings:

- > Endostar Spreader Sonic files are designed for devices like Endo-Chuck 120° or 95° (f.e. Endostar Sonic File Holder 120° or 95°).
- > It is not recommended to use Endostar Spreader Sonic Files for enlarging root canals.
- > It is recommended to rinse the canal with sodium hypochlorite.
- > It is recommended to use ultrasound with minimum power to control the possibility of breakage of the file in the canal.
- > File in canal should be passively move up and down (never by force), not to succumb to its curvature or stuck in the canal.
- > It is not recommended to use another energy sources while using an ultrasonic device.
- > Ultrasonic files should be placed into the root canal always in standby mode, approx. 1-2 mm shorter than the working length. Only then we can turn on ultrasound device.

Endostar Spreader Sonic Files, 6 pcs	
Size	33 mm
Set 25 - 35	ESSF253533
25	ESSF002533
30	ESSF003033
35	ESSF003533

Instruction for irrigation and disinfection of root canal:

- > Fill the root canal with wash solution - sodium hypochlorite (circa 1-2 ml).
- > Enter the file to the canal - 2 mm shorter than the working length (leave a small gap, a small space at the tip/apex).
- > Turn on the ultrasound device.
- > Activate hypochlorite for 20 seconds, moving with a small amplitude moves (1-2 mm) with Endostar Spreader Sonic Files in the canal. Replace hypochlorite for the fresh one (about 1-2 ml). Reactivate the solution for 20 seconds. Again, replace the solution with the fresh one. For the third time activate hypochlorite for 20 seconds.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Sterilization
Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Endostar Sonic File Holder

Sonic files holder.

Endostar Sonic File Holder 120°

Application:
Endo chuck for E1 endodontic sonic files (120°) is used in the treatment of anterior teeth and distal canals posterior teeth.

Endostar Sonic File Holder 95°

Application:
Endo chuck E2 endodontic sonic file (95°) is used in the treatment of anterior teeth and mesial canals posterior teeth.

Holders in accordance with the EMS / WOODPECKER / MECTRON standard.
Recommended for Endostar Spreader Sonic Files.

Endostar Sonic File Holder, 1 pc	
Endostar Sonic File Holder 120°	ESFH120
Endostar Sonic File Holder 95°	ESFH95



Endostar Sonic File Holder wrench

A wrench for attaching sonic files to Endostar Sonic File holders Holder 120° and 95°.

We recommend the use of a wrench to position the file correctly in the holder.

Endostar Sonic File Holder wrench, 1 pc	
Endostar Sonic File Holder wrench	EKEY



Endostar Apical Stopper

Endostar Apical Stopper is a hand instrument used in root canal treatment, as an auxiliary instrument for any irrigation and disinfection procedures. It is used to prevent extrusion of the irrigant from the apical foramen (Apical Extrusion AE).

A narrow, non-tapered instrument will not occlude the canal space, so that irrigant is free to flow around it and along the canal walls, allowing an efficient smear layers and biofilm removal and, at the same time, blocking apically the extrusion of the fluid.

The idea of the instrument was designed by prof. Giovanni Olivi, a world known expert in endodontics and innovative technologies for root canal irrigation.

It is a smooth, non-working stainless steel instrument, of appropriate ISO size, fitting (equal to) the size of the apical foramen. The instrument has a slim plastic handle, colored according to ISO standard for root canal instruments.

Irrigation:

Irrigation is a very important part of root canal treatment, it is performed multiple times during the whole procedure, from the start to the final step of the treatment.

Today a lot of different irrigation techniques are available, mostly delivering the solutions in the access cavity or in the canal using syringes/needles. Different activation devices are used to improve the flow of the irrigant solution, sonic, ultrasonic and laser (erbium family laser only).

The activation produce positive pressure to the solution with the aim to achieve an efficient and effective three-dimensional flow of the fluids.

A concern that has to be considered and addressed during the irrigation procedure is possible extrusion of the irrigant from the apical foramen (Apical Extrusion AE).

This may happen in different conditions, when the apical foramen is superior to size ISO 40-50:

- > in immature tooth with not complete apicification;
- > in tooth with periapical pathology and wider apical anatomy modified by the infection;
- > in case of accidental overinstrumentation of the apical foramen;
- > when high pressure is applied to the irrigant due to high setting of the device used;
- > when high pressure is applied to the irrigant depending on the needle type (end port) and insertion depth;
- > when high pressure is applied to the irrigant depending on the position of the laser tip in the canal;

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.





Endostar Apical Stopper

> when various states of apical periodontitis (a type of tissue) occur, the pressure in the apical area.

Apical extrusion can result in minimum bleeding or in a severe sodium hypochlorite accident, depending on the time and pressure applied and so the volume extruded.

Use of Endostar Apical Stopper

To prevent Apical Extrusion (AE) an instrument called Endostar Apical Stopper can be used during the irrigation.

A narrow, non-tapered instrument will not occlude the canal space, so that irrigant is free to flow around it and along the canal walls, allowing an efficient smear layers and biofilm removal and, at the same time, blocking apically the extrusion of the fluid.

Clinical instruction for use

Methodology of root canal irrigation (step by step), using Endostar Apical Stopper:

1. Perform the standard root canal treatment method you normally use.
2. Before to irrigate the root canal, place an Endostar Apical Stopper instrument in the canal up to the working length (WL). Use the size of the Endostar Apical Stopper, chosen during the apical foramen measurement ("gauging"). If possible, check if the Endostar Apical Stopper blocks the apical foramen.
3. Irrigate the canal according to the procedure, and activate the irrigant with the preferred method.
4. Take out the Endostar Apical Stopper from the canal and continue the root canal treatment procedure.
5. Repeat steps 2 – 4 during the next irrigation of the root canal.

Recommended number of usage

It can be used multiple times, 4-5 times for the instruments, sizes ISO 40-50 and 6-8 times for the instruments sizes 60, 70, 80, 31 mm.

Endostar Apical Stopper, 6 pcs

40, 31 mm	EAS004031SW
50, 31 mm	EAS005031SW
Assorted, 2 pieces of each size: 60, 70, 80, 31 mm	EAS608031SW

**Sterilization**

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.

**Endostar Finger Pluggers**

Endostar Finger Pluggers are used for vertical (apical) condensation of gutta-percha. Pluggers can be used also for the application paste - like materials into the root canal.

- > Made of stainless steel.
- > Slightly tapered and flat-ended metal instruments.
- > Ergonomic handle with ISO symbols.

Endostar Finger Pluggers, 6 pcs

Size	25 mm
Set 15-40	BPLG154025
15	BPLG001525
20	BPLG002025
25	BPLG002525
30	BPLG003025
35	BPLG003525
40	BPLG004025

Instruments available in blister packs or plastic boxes.

**Sterilization**

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.

**Endostar NiTi Finger Pluggers**

Endostar NiTi Finger Pluggers are used for vertical (apical) condensation of gutta-percha. They are made of nickel-titanium alloy, and they are very flexible. NiTi pluggers are recommended for obturation of curved root canals. Pluggers can be used also for the application paste - like materials into the root canal.

- > Slightly tapered and flat-ended metal instruments.
- > Ergonomic handle with ISO symbols.

Endostar NiTi Finger Pluggers, 6 pcs

Size	25 mm
Set 15-40	BPTG154025
15	BPTG001525
20	BPTG002025
25	BPTG002525
30	BPTG003025
35	BPTG003525
40	BPTG004025

Instruments available in blister packs or plastic boxes.

Endostar Finger Spreaders

Endostar Finger Spreaders are used for lateral condensation of gutta-percha. Instruments are produced from stainless steel and special quality plastic materials, which guarantee high products quality.

- > Tapered and pointed instruments.
- > Ergonomic handle with ISO symbols.



Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Endostar Finger Spreaders, 6 pcs	
Size	25 mm
Set 15-40	BSPD154025
10	BSPD001025
15	BSPD001525
20	BSPD002025
25	BSPD002525
30	BSPD003025
35	BSPD003525
40	BSPD004025

Instruments available in blister packs or plastic boxes.

Endostar NiTi Finger Spreaders

Endostar NiTi Finger Spreaders are used for lateral condensation of gutta-percha. They are made of nickel-titanium alloy, and they are very flexible. NiTi spreaders are recommended for obturation of curved root canals.

- > Tapered and pointed instruments.
- > Ergonomic handle with ISO symbols.



Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Endostar NiTi Finger Spreaders, 6 pcs	
Size	25 mm
Set 15-40	BSTD154025
15	BSTD001525
20	BSTD002025
25	BSTD002525
30	BSTD003025
35	BSTD003525
40	BSTD004025

Instruments available in blister packs or plastic boxes.



Endostar Paste Fillers with safety spring (PFL)

Endostar Paste Fillers with a safety spring (also called lentulo spirals, a spiral filler, or a paste carrier) are used to introduce paste - like materials, cements, sealers into the root canals. The working part is conical shape, and it consists of a loosely coiled spiral made of thin wire. Paste Fillers with a safety spring have an additional, tight spring at the metal handle, for better flexibility and protection from the breaking during the rotational movements in the canal.

- > Application of materials is performed by clockwise movement.
- > Rotation speed - under 800 rpm.
- > Cross-section: **G**

The colour of the shank has changed to silver. Products with gold shank will be available while stocks last.

Sterilization

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Endostar Paste Fillers with safety spring, 4 pcs

Size	17 mm	21 mm	25 mm	29 mm
Assorted 25-40	EPFL254017	EPFL254021	EPFL254025	EPFL254029
25, 1 pc of each 17, 21, 25, 29 mm	EPFL002500			
25	EPFL002517	EPFL002521	EPFL002525	EPFL002529
30	EPFL003017	EPFL003021	EPFL003025	EPFL003029
35	EPFL003517	EPFL003521	EPFL003525	EPFL003529
40	EPFL004017	EPFL004021	EPFL004025	EPFL004029



Sterilization
 Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.



Endostar Paste Fillers without spring (PFN)

Endostar Paste Fillers without spring (also called lentulo spirals, a spiral filler, or a paste carrier) are used to introduce paste - like materials, cements, sealers into the root canals. The working part is a conical shape, and it consist of a loosely coiled spiral made of thin wire.

- > Application of materials is performed by clockwise movement.
- > Rotation speed - under 800 rpm.
- > Cross-section:

The colour of the shank has changed to silver. Products with gold shank will be available while stocks last.

Endostar Paste Fillers without spring, 4 pcs				
Size	17 mm	21 mm	25 mm	29 mm
Assorted 25-40	EPFN254017	EPFN254021	EPFN254025	EPFN254029
25, 1 pc of each 17, 21, 25, 29 mm	EPFN002500			
25	EPFN002517	EPFN002521	EPFN002525	EPFN002529
30	EPFN003017	EPFN003021	EPFN003025	EPFN003029
35	EPFN003517	EPFN003521	EPFN003525	EPFN003529
40	EPFN004017	EPFN004021	EPFN004025	EPFN004029

**Sterilization**

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.

**Endostar Gates Glidden**

Endostar Gates Glidden drills are engine-driven instruments, and they are used to enlarging root canals orifice and coronal third of the canals. These instruments represent the oldest forms of root canal instruments. Gates Glidden drills are small, flame-shaped cutting instruments used in the conventional hand piece.

- > Slightly flexible.
- > Rotation speed: 450-800 rpm.
- > Non-cutting tip.

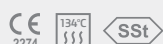
Endostar Gates Glidden, 6 pcs

Size	19 mm
Set 01-06	BGAE010619
01	BGAE000119
02	BGAE000219
03	BGAE000319
04	BGAE000419
05	BGAE000519
06	BGAE000619

Instruments available in blister packs or plastic boxes.

**Sterilization**

Steam autoclave 134°C. Recommended sterilization time: 3 minutes at 2.1 bar overpressure.

**Endostar Peeso Reamers**

Endostar Peeso Reamers drills are engine-driven instruments, and they are used to enlarging root canals orifice and coronal third of the canals. Peeso reamers differ from Gates Glidden drills in that the blades spread over a wide surface and the shape is cylindrical.

- > Slightly flexible.
- > Rotation speed: 800-1200 rpm.
- > Non-cutting tip.

Endostar Peeso Reamers, 6 pcs

Size	19 mm
Set 01-06	BPPE010619
01	BPPE000119
02	BPPE000219
03	BPPE000319
04	BPPE000419
05	BPPE000519
06	BPPE000619

Instruments available in blister packs or plastic boxes.



Endostar ENDOcalibrator

Gauge is used to customize accessory sized gutta percha to ISO sizes, and to measure files, gutta percha points and absorbent points.
Do not use caustic soda solutions for cleaning.
Sterilization in steam autoclave 134°C.

ENDOcalibrator	CE
Calibrator, 1 pc	EEC



Endostar ENDObox

Endodontic container designed for storing and sterilizing instruments used in root canal treatment. It has 30 slots for rotary or hand files. It is made of colorful anodized aluminum. Sterilization in steam autoclave 134°C.
Make sure that the solutions used for cleaning do not react with aluminum.

Endostar ENDObox without instruments	CE
Endobox, 1 pc	EEB



Endostar ENDOsizer

A special instrument designed for precise measurement of the working length of files and the length of gutta-percha and paper points. It is made of extremely durable polycarbonate and consists of a recess for endostop and a separate canal for measuring and cutting off points. Sterilization in steam autoclave 134°C.

ENDOsizer	
ENDOsizer, ivory color, 1 pc	EESIZ



Endostar ENDOstand

Hinged stand with lid holds endodontic files and reamers.
Stand with a ruler to measure stop positions easily from either direction.

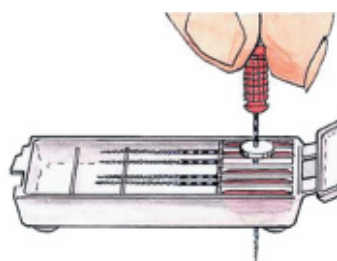
Sterilization in steam autoclave 134°C.

Endostar ENDOstand



ENDOstand, 1 pc

EES



ENDOstops

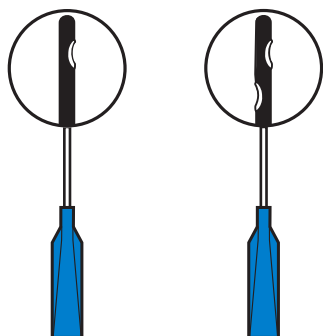
Round, white silicon rubber, stoppers, used for marking the working length on a file or reamer. Easily visible on RTG.
Sterilization in steam autoclave 134°C.

ENDOstops



Box, 100 pcs

ESW



one side vent

double side vent

Endostar ENDONeedles

Single-use disposable endo-irrigation needles with single or double vent.

- > Sterile.
- > Pyrogen-free.
- > Application: rinsing root canals and also for rising gingival pockets.
- > The needle is made of the highest quality material, it is characterized by thin walls and high flexibility allowing for adaptation of the needle shape to the root canal.
- > Available in packages: 100 pieces .
- > Available sizes:
 - endo-irrigation needles with single vent, size 0,3 x 25 (30G x 1")
 - endo-irrigation needles with single vent, size 0,5 x 25 (25G x 1")
 - endo-irrigation needles with double vent, size 0,3 x 25 (30G x 1")

Endostar ENDONeedles	CE 2274
Double side vent, size 0,3 x 25 (30G x 1"), 100 pcs	EEN230G
One side vent, size 0,3 x 25 (30G x 1"), 100 pcs	EEN130G
One side vent, size 0,5 x 25 (25G x 1"), 100 pcs	EEN125G

Endostar ENDOSyringe

Small, colored 5 ml irrigation syringes.



- > Organization and identification - color marking has a decisive impact on avoiding a mistake in changing syringes with rinsing solutions.
- > Increasing the safety of rinsing (available in 4 colors: transparent, blue, red, yellow).
- > Color coding for convenient work with the microscope.
- > Available in 5 ml capacity.
- > Standard luer-lock.

Endostar ENDOSyringe	CE 0197
Syringes Luer Lock, 5 ml, color mix, every color 25 pcs., package 100 pcs.	EESASS
Syringes Luer Lock, 5 ml, clear, 100 pcs.	EESC
Syringes Luer Lock, 5 ml, blue, 100 pcs.	EESB
Syringes Luer Lock, 5 ml, red, 100 pcs.	EESR
Syringes Luer Lock, 5 ml, yellow, 100 pcs.	EESY



Endostar Gutta Percha Points

For root canal obturation. ISO coded.

- > Ideal for vertical and lateral root canal obturation.
- > Biocompatible and hygienic.
- > With high dimensional stability.
- > Firm and elastic.
- > Available in 12 sizes (15, 20, ..., 80) and/or assorted 15-40, 45-80, packed in compartment boxes, with standard 2% taper, 120 pcs/box or with taper 4% and 6%, 60 pcs/box.
- > Calibrated, with the length marking on the point.

Gutta Percha Points		CE 0197
Size / ISO	15-80	
Taper	2% / 4% / 6%	
Packing	Single size or assorted	
Quantity in package	120 pcs / 60 pcs	



Endostar Paper Points

Paper points for drying the root canal with a very high absorption capacity.

- > Used for drying root canal.
- > ISO coded.
- > Highly absorbent.
- > Firm and elastic.
- > Available in 12 sizes (15, 20, ..., 80) and/or assorted 15-40, 45-80, packed in compartment boxes, with standard 2% taper, 200 pcs/box or with taper 4% and 6%, 100 pcs/box.

Paper Points		CE 0197
Size / ISO	15-80	
Taper	2% / 4% / 6%	
Packing	Single size or assorted	
Quantity in package	200 pcs / 100 pcs	





*Available only
in selected countries.*

Endostar Provider

Compact, cordless endodontic handpiece featuring two types of movements:

- > Rotation
- > OTR (patented by Morita, remarkably safe, reduces the risk of file fracture).

The intelligent and intuitive handpiece provides you with the right type of movement depending on root canal morphology. This drastically increases safety and reduces preparation time.

Ergonomics and comfort

- > The small compact head is only 9 mm in diameter provides easy access and better visibility.
- > The power button is perfectly positioned for better ergonomics.
- > The device is suitable for right-handed and left-handed operators.
- > Lightweight (100 g) and ergonomic - reduces fatigue.
- > Extended battery life.
- > The auto-rotate color display shows the battery level. The display changes color depending on the change in torque and the location of the file's tip. The display shows changes in torque on a visual scale and by changing the backlight color.
- > New, intelligent OTR movement. The device is equipped with automatic functions which control speed, the direction of rotation and torque. This significantly improves the accuracy and safety of root canal treatment.

Endostar Provider, set	CE 0197	EPROV
Endostar Provider head w/ built-in electrode (contra angle)		1 pc
Endostar Provider motor handpiece		1 pc
Endostar provider charger		1 pc
Power supply cord		1 pc
Guide Bar		1 pc
LS OIL		60 ml

Endostar Provider settings

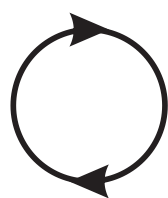
	M1	M2	M3	M4	M5	M6
Speed (rpm)	300	300	300	300	1000	1000
Torque (Ncm)	0.8	0.6	0.4	0.3	5.0	5.0
Rotation Mode	OTR	OTR	OTR	OTR	CW	CCW
	for flaring	for flaring	for shaping canals	for shaping canals	for Gates Glidden	

It's safer with OTR

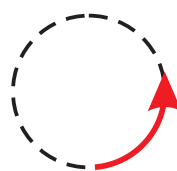
OTR (Optimum Torque Reverse) is an innovative type of file movement patented by Morita, aiming to minimize the risk of fracturing/jamming the instrument inside the canal.



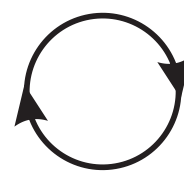
- > Combines the advantages of reciprocal and rotation movement.
- > The type of movement changes depending on the resistance measured inside the canal, which provides additional security during root canal preparation.
- > Helps prevent jamming and fracturing of files.
- > Reduces tool wear.
- > Reduces preparation time.



Continuous rotation.



The file will rotate 90 degrees the opposite direction when torque is exceeded.

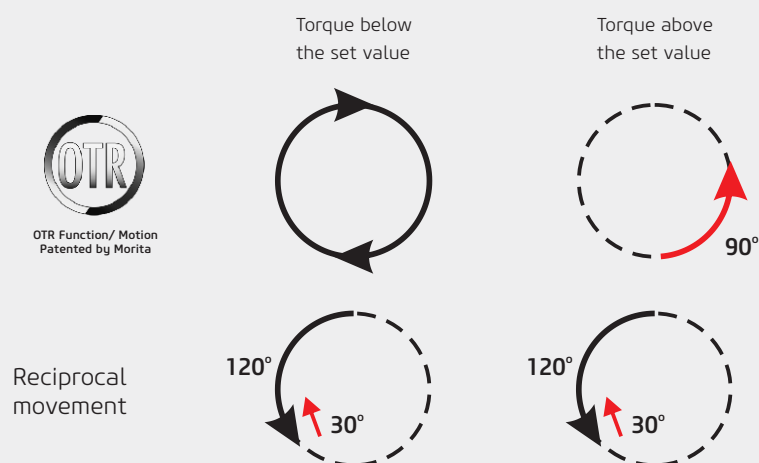


Normal rotation resumes when torque values drop.

The strain generated on the file during canal shaping is constantly measured. If these forces are too large, the file will rotate 90 degrees to the left and then 180 degrees to the right and will continue with reciprocal movements until resistance drops to a safe level and rotation can be resumed.



OTR vs. Reciprocal movement





*Available only
in selected countries.*

Endostar Navigator

Probably the most accurate and stable apex locator in the world.

- > Reliable navigation produced in Japan.
- > Safe and convenient measurement of root canal length.
- > Extraordinary precise measurements during endodontic procedures.
- > Large, high contrast display with optical and audio monitoring of file position.

Endostar Navigator, set	CE 0197	ENAV
Apex locator		1 pc
Probe cord		1 pc
File holder		1 pc
Contrary electrode		5 pcs
Function tester		1 pc
Alkaline Dry Cells		3 pcs

Additional accessories

Endostar Navigator additional accessories (to be purchased outside the set)	
Long file holder, 1 pc	M06905-009
File holder, 3 pcs	M04001-981
Contrary electrode, 5 pcs	M06950-004
Function tester, 1 pc	M06951-012
Probe cord, 1 pc	M06951-001
Battery Cover, 1 pc	M0E8449449

Endostar Provider additional accessories (to be purchased outside the set)	
Handpiece rest, 1 pc	M06961-013
Transmission cable, 1 pc	EA6970-006
Built-in electrode with guide bar, 1 pc	M06907-011
External file electrode (with cap and guide bar), 1 pc	M06970-001
LS OIL, 60 ml	M06960-011
Endostar Provider motor handpiece, 1 pc	M06970-003
External File Electrode, 1 pc	M06907-010
Lithium-Ion Battery, 1 pc	M06440-820
Endostar provider charger, 1 pc	M06970-002
Power supply cord, 1 pc	M06970-800

Endostar EASYdam

The extremely durable and flexible powder-free rubber dam provides comfort for the patient.

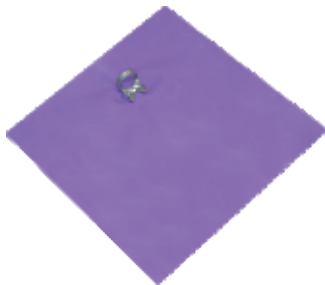


- > Very flexible and with high resistance to tearing.
- > Available in three thickness options: thin, medium, thick.
- > Available in two colors: blue and green
- > Odorless.
- > Very easy to apply.

Endostar EASYdam	CE
152 x 152 mm, thin, odorless, blue, 36 pcs	EEDLT36B
152 x 152 mm, medium, odorless, blue, 36 pcs	EEDLM36B
152 x 152 mm, thick, odorless, blue, 36 pcs	EEDLH36B
152 x 152 mm, thin, odorless, green, 36 pcs	EEDLT36G
152 x 152 mm, medium, odorless, green, 36 pcs	EEDLM36G
152 x 152 mm, thick, odorless, green, 36 pcs	EEDLH36G

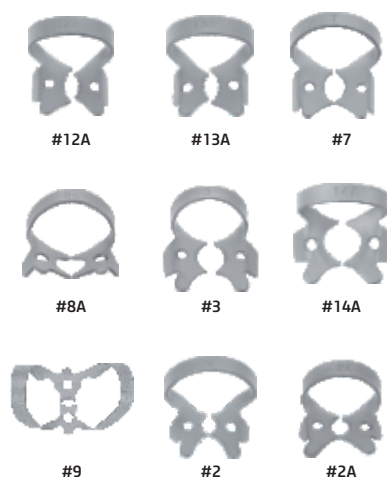
Endostar EASYdam Non-latex

Latex-free, powderless rubber dam with increased flexibility compared to a traditional latex rubber dam. Extremely easy to apply.



- > Much more flexible than traditional latex rubber dam.
- > Odorless and tasteless.
- > Closely adheres to the tooth.
- > Non-allergenic.
- > Maximum stretch guarantees easy application.

Endostar EASYdam Non-latex	CE
Violet (150 x 150 mm), 15 pcs	EEDNLM15P



Endostar EASYdam Clamps

High quality matte rubber dam clamps with wings. The matte finish guarantees a comfortable work environment without reflections. This is particularly useful when working with a microscope. The high-quality steel provides high wear resistance and fatigue strength.

9 of the most commonly used clamps:

Endostar EASYdam Clamps		CE
#9	Small fangs and anterior teeth	EEDC9
#2	Bigger bicuspid	EEDC2
#2A	Biscupids	EEDC2A
#12A	Lower right and upper left premolars	EEDC12A
#13A	Lower left and upper right premolars	EEDC13A
#7	Lower molars	EEDC7
#14A	Partially erupted, big, inclined molars	EEDC14A
#8	Upper molars	EEDC8A
#3	Small molars	EEDC3

Accessories



Endostar EASYdam Frame

The adult-sized metal frame firmly holds the rubber dam in place. U-shaped frame.

- > Autoclavable at 134°C.
- > Does not interfere during treatment.

Endostar EASYdam Frame	CE
Frame, 1 pc	EEDFR



Endostar EASYdam Punch

The Ainsworth punch provides precise punching power for each rubber dam thickness option in 5 different sizes. Suitable for frontal and posterior teeth. The highest quality of stainless steel instruments guarantees precise puncturing.

Endostar EASYdam Punch	CE
Punch, 1 pc	EEDP



Endostar EASYdam Forceps

Comfortable rubber dam forceps allow quick and safe transportation, application and removal of clamps.

- > Made from stainless steel.
- > Matte finish.

Endostar EASYdam Forceps	CE
Forceps, 1 pc	EEDFO

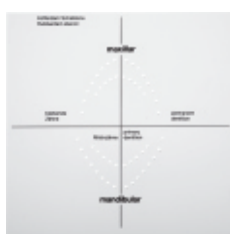


Endostar EASYfix

The Endostar EASYfix provides support or can be an alternative for traditional clamps.

- > Single use.
- > In a practical container.
- > EASYfix occurs in length 4 m and 2 thickness options: 2 mm (orange) and 1.5 mm (yellow).

Endostar EASYfix		CE
ø 1,5 mm, yellow, small, length: 4 m, 1 pc		EEDEFS
ø 2,0 mm, orange, large, length: 4 m, 1 pc		EEDEFL

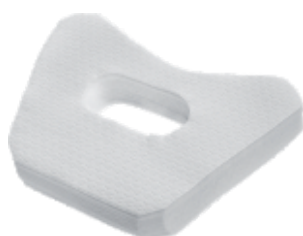


Endostar EASYdam Template

The Endostar EASYdam template helps accurately determine the position of teeth on the rubber dam sheet.

- > Very helpful in proper punching.
- > Plastic and durable and easy to use.

Endostar EASYdam Template	
Template, 1 pc	EEDT



Endostar EASYdam Napkins

Rubber dam napkins for maximum patient comfort. Napkins absorb moisture and protect the patient's skin.

- > Protects delicate skin.
- > Absorbs water, saliva and sweat.
- > Provides a dry contact surface.
- > 50 pieces.

Endostar EASYdam Napkins		CE
Napkins, 50 pcs		EEDN50

Recommended number of uses

Recommended number of usage

Instruments for canal treatment according to ISO size - MAXIMUM recommended number of usage of ONE INSTRUMENT in the root canal. Instruments can be 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 (does not apply to pre-bending by the dentist), deformed, blade does not show signs of wear and is firmly fixed in the shank.

- > Prolonging the life of the instrument more than recommended may result in the blade breaking.
- > Dispose of the file which appears to be defective.

Recommended number of usage of instruments from the following systems can be found next to the product descriptions: Endostar E3 Azure (p. 13), Endostar EP Easy Path (p. 7), Endostar REvision (p. 26).

Endostar E3 Rotary System

	E3 Basic			E3 Big Apical			E3 Small Apical		
File number	1	2	3	1	2	3	1	2	3
	10	5	5	5	5	5	5	5	5

Endostar RE Re Endo Rotary System

File number	1	2	3	4
	10	10	5	5

Endostar NT2 NiTi Two Rotary System

File number	1	2	3	4	5	6
	5	5	5	5	5	5

Endostar Unique S-files / Endostar Unique K-files

File number	12.5	17.5	22.5
	1-2	1-2	1-2

Endostar Spreader Sonic Files

File number	25	30	35
	1-2	2-3	2-3

Endostar Barbed Broaches

File number	00	01	02	03	04	05	06
	1	2-3	2-3	2-3	4-5	4-5	4-5

Endostar Gates Glidden / Endostar Peeso Reamers

File number	1	2	3	4	5
	5	5	5	10	10

Recommended number of uses

Endostar Hand Files															
Name / ISO	06	08	10	15	20	25	30	35	40	45	50	55	60	70	80
S-files	1	1	1	1-2	1-2	1-2	2-3	2-3	2-3	4-5	4-5	4-5	4-5	4-5	4-5
NiTi S-files	-	-	2	2-3	2-3	2-3	4-5	4-5	4-5	6-8	6-8	6-8	6-8	6-8	6-8
H-files	1	1	1	1-2	1-2	1-2	2-3	2-3	2-3	4-5	4-5	4-5	4-5	4-5	4-5
NiTi H-files	-	-	-	2-3	2-3	2-3	4-5	4-5	4-5	6-8	6-8	6-8	6-8	6-8	6-8
K-files	1	1	1	1-2	1-2	1-2	2-3	2-3	2-3	4-5	4-5	4-5	4-5	4-5	4-5
NiTi K-files	-	-	-	2-3	2-3	2-3	4-5	4-5	4-5	6-8	6-8	6-8	6-8	6-8	6-8
K-reamers	1	1	1	1-2	1-2	1-2	2-3	2-3	2-3	4-5	4-5	4-5	4-5	4-5	4-5
NiTi K-reamers	-	-	-	2-3	2-3	2-3	4-5	4-5	4-5	6-8	6-8	6-8	6-8	6-8	6-8
Canal Locator	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Finger Pluggers	-	-	-	1-2	1-2	1-2	2-3	2-3	2-3	-	-	-	-	-	-
NiTi Finger Pluggers	-	-	-	2-3	2-3	2-3	4-5	4-5	4-5	-	-	-	-	-	-
Finger Spreaders	-	-	1	1-2	1-2	1-2	2-3	2-3	2-3	-	-	-	-	-	-
NiTi Finger Spreaders	-	-	-	2-3	2-3	2-3	4-5	4-5	4-5	-	-	-	-	-	-
Paste Fillers without spring (PFN)	-	-	-	-	-	1-2	4-5	4-5	4-5	-	-	-	-	-	-
Paste Fillers with safety spring (PFL)	-	-	-	-	-	1-2	4-5	4-5	4-5	-	-	-	-	-	-
Apical Stopper	-	-	-	-	-	-	-	-	4-5	-	4-5	-	6-8	6-8	6-8

Endostar Hand Files						
Name / ISO	90	100	110	120	130	140
S-files	8-10	8-10	8-10	8-10	8-10	8-10
NiTi S-files	-	-	-	-	-	-
H-files	8-10	8-10	8-10	8-10	8-10	8-10
NiTi H-files	-	-	-	-	-	-
K-files	8-10	8-10	8-10	8-10	8-10	8-10
NiTi K-files	-	-	-	-	-	-
K-reamers	8-10	8-10	8-10	8-10	8-10	8-10
NiTi K-reamers	-	-	-	-	-	-
Canal Locator	-	-	-	-	-	-
Finger Pluggers	-	-	-	-	-	-
NiTi Finger Pluggers	-	-	-	-	-	-
Finger Spreaders	-	-	-	-	-	-
NiTi Finger Spreaders	-	-	-	-	-	-
Paste Fillers without spring (PFN)	-	-	-	-	-	-
Paste Fillers with safety spring (PFL)	-	-	-	-	-	-
Apical Stopper	-	-	-	-	-	-

Cleaning, disinfecting and sterilizing instruments

Instructions for cleaning, disinfecting and sterilizing all instruments

All instruments produced by Poldent Sp. z o.o. which are designed for endodontic treatment are not sterile. Before first-time use and after each use the instruments must be cleaned, disinfected and sterilized according to the following instructions.

INTRODUCTION

These instructions are intended for care, cleaning, maintenance and sterilization of Poldent instruments prior to first and each subsequent use.

1. Recommendation

- > Do not exceed the recommended number of instrument uses.
- > Instruments can be disinfected in mild disinfectants and washed in ultrasonic cleaners.
- > Use only a disinfectant detergent solution that is approved for efficacy (VAH/DGHM listing, CE mark, FDA approval) and in accordance with the detergent manufacturer's guidelines. For all metal equipment, the use of anti-corrosive disinfectants and cleaners is recommended.
- > Use personal protective equipment for your own safety, e.g. gloves, safety goggles, mask, visor.
- > Use a surface-active alkaline detergent that has grease removal, disinfectant, and corrosion inhibiting properties. The detergent should be free of aldehydes and should not contain di- or triethanolamines as corrosion inhibitors.

2. Warnings

- > It is the responsibility of the user to ensure the sterility of the device both before the first use and each subsequent use.
- > Following the maintenance procedure for the sterilizer is the responsibility of the owner and should be done according to the requirements for sterilization of medical devices.
- > When using chemical solutions for soaking instruments, always follow the fluid manufacturer's instructions.
- > Excessive concentrations of the liquid and excessive soaking time (not in accordance with the liquid manufacturer's instructions) can cause damage to the instruments.
- > If thermal disinfection is not used, use a suitable disinfectant with proven efficacy (e.g. VAH/DGHM approval, FDA approval or CE marking) that is compatible with the cleaning agent.
- > It is mandatory to use demineralized water for the last rinsing step, regardless of whether automatic or manual cleaning is used. Tap water is acceptable for the other rinsing stages.
- > Hydrogen peroxide solution should not be used for instruments with plastic handles and NiTi instruments, due to the effect on their degradation.
- > Do not use labels or identification tags directly on the instrument.

INSTRUCTIONS FOR CLEANING, DISINFECTION AND STERILIZATION OF INSTRUMENTS

1. Disinfection

Soak all products immediately after use, using a perforated basket or stainless steel tray. Avoid soaking for long periods as this increases the risk of corrosion of the instruments.

2. Rinsing

Using running tap water, rinse the blades generously. The water should be at room temperature.

3. Cleaning

Automated cleaning

Remove endostops from the instruments. Place the instruments in a dedicated basket or tray for the ultrasonic cleaner. Immerse the instruments in a detergent solution with cleaning properties. Follow the instructions for use. Process time may vary due

to type of instrument, amount of residue, capacity of ultrasonic cleaner. Replace the cleaning solution according to the manufacturer's recommendations. Use a cleaning device conforming to ISO 15883.

or Manual cleaning

Remove endostops from the instruments. Gently brush all surfaces of the instruments by immersing them in water with detergent. Use only soft brushes made of nylon, polypropylene, or acrylic. After cleaning, rinse the instruments several times in clean water, preferably freshly boiled, until the foam disappears. Use distilled water for the final rinse. The surfaces of the instruments should be visibly clean and free of stains and tissue residues.

4. Rinsing

Using deionized water, rinse the blades generously. The water should be at room temperature.

5. Drying

Dry using non-woven cloth. Dry instruments until there are no visible traces of moisture. Instruments should be thoroughly dried before inspection and packaging.

6. Inspection

Carefully inspect each instrument to ensure that all visible contamination has been removed. If contamination is noted, repeat the cleaning and disinfecting process. Discard instruments which show any deformation, damages or any other visible defect.

7. Packaging

Place the instruments in paper and foil pouches suitable for steam sterilization. Use appropriate packaging that is resistant to moisture and heat and complies with ISO 11607. Seal the pouches according to the manufacturer's instructions. If a sealing device is used, the process must be validated and the sealing device calibrated.

8. Sterilization

Place the packages in the autoclave according to the sterilizer manufacturer's recommendations. If multiple instruments are to be sterilized in a single autoclave cycle, ensure that the maximum load on the sterilizer is not exceeded. Sterilization in a steam autoclave (moist heat) with a pre-vacuum cycle (forced air removal) is recommended. The autoclave should conform to the requirements and be validated, maintained and checked in accordance with current standards (EN 13060 or EN 285). It is recommended to sterilize the instruments at 134°C for at least 3 minutes with an overpressure of 2.1 bar.

- > The effectiveness and acceptance criteria of the sterilization procedure must be checked (integrity of the package, absence of moisture, absence of color change of the package, positive results of physicochemical indicators, compliance of actual cycle parameters with reference parameters). Special attention should be paid to package integrity.
- > Keep records of the process and determine the shelf life according to the packaging manufacturer's guidelines.

9. Storage

Store the sterile packaged instruments in a well-ventilated room, protected from moisture, dust, sunlight and heat. Visually evaluate the integrity of the kit before use.



Poldent Co. Ltd.
Dzika 2 Street
00-194 Warsaw, Poland
Ph.: +48 22 351 76 61
Mob.: +48 603 630 090
E-mail: endostar@endostar.eu
www.endostar.eu

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