Instruction For Use
Of
Endo Extractor System

Doc.: LJYL-IFU-E001(E)
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Before using the products, please see the instruction manual as indicated below.

1. Product Name

Endo Extractor System

2. Product Model

E-LITE ES

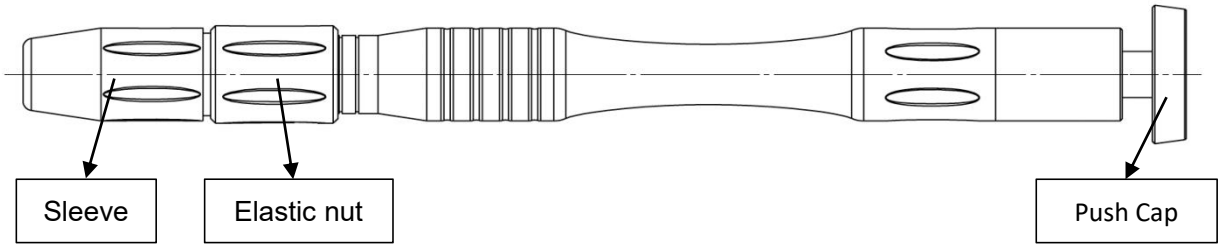
3. Intended Use

Used for taking out broken root canal files during root canal treatment.

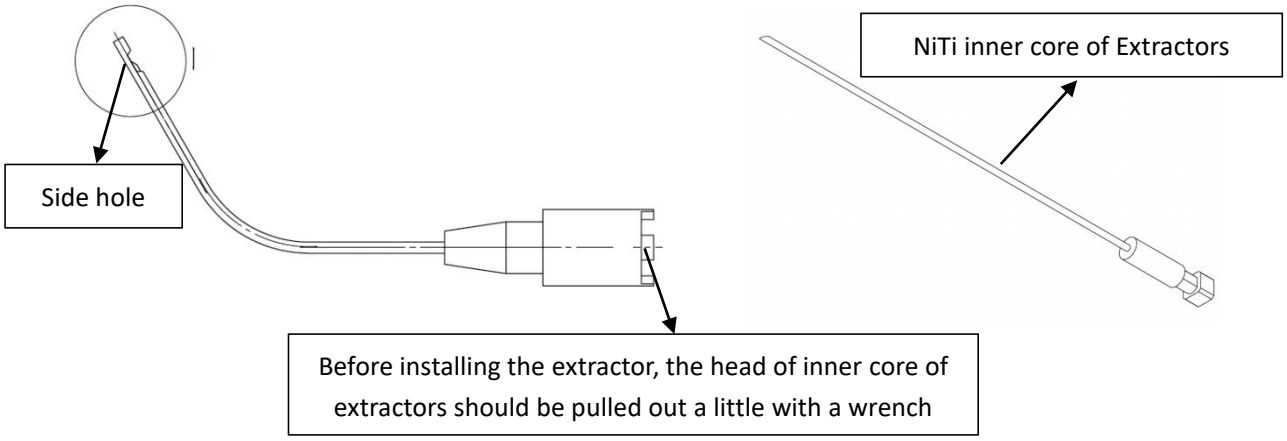
4. Product Structure

It is mainly composed of 1 Extractor Shank, 3 Extractors, 5 Access Files, 3 Shapping Reamers, 3 Trephine Drills and 1 Wrench.

4.1 Extractor Shank

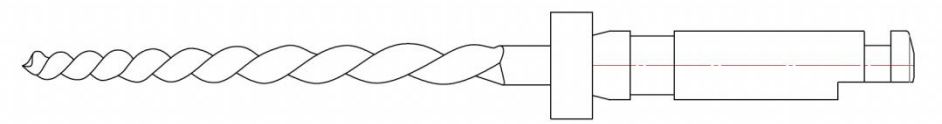


4.2 Extractors



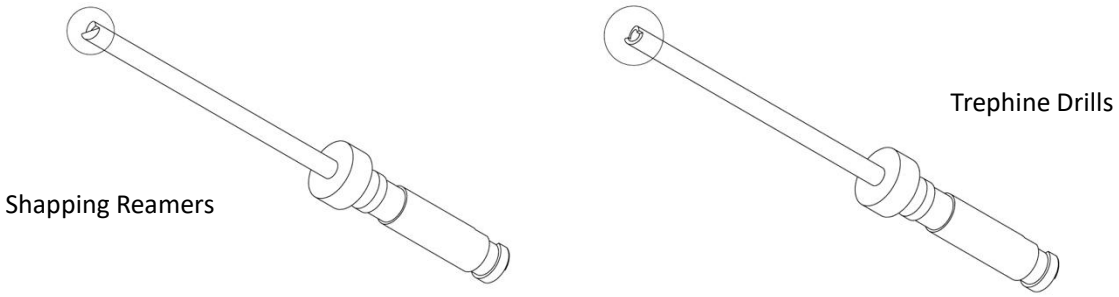
Size of Extractors	Outer Diameter D(mm)	Inner Diameter d(mm)
ET-80	0.80	0.50
ET-90	0.90	0.60
ET-110	1.10	0.70

4.3 Access Files



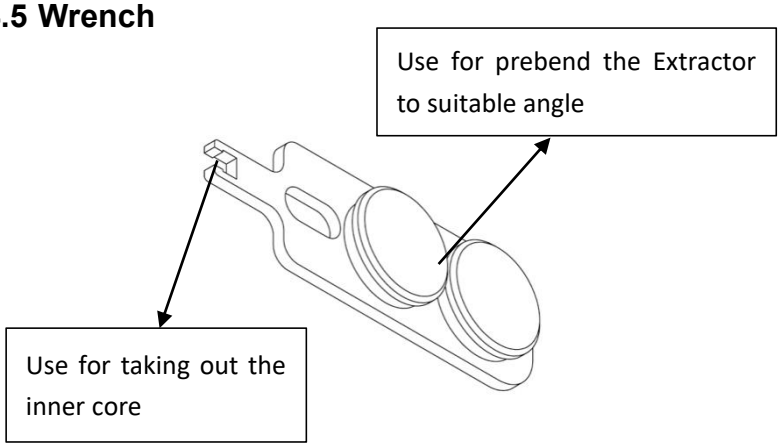
Size	Outter Diameter D(mm)	Working Length L(mm)	Taper	Color Ring
AF-60	0.60	19	04	Blue
AF-70	0.70	19	02	Green
AF-80	0.80	19	02	Black
AF-90	0.90	19	03	White
AF-110	1.10	19	03	Red

4.4 Shapping Reamers and Trephine Drills



Size	Outter Diameter D(mm)	Trephine Drills Inner Diameter d(mm)	Working Length L(mm)	Color Ring
SR-80/TD-80	0.80	0.50	21	Black
SR-90/TD-90	0.90	0.60	21	White
SR-110/TD-110	1.10	0.70	21	Red

4.5 Wrench



5. Contraindications

5.1 Do not use the device when the broken root canal file is located in the curved part of the root canal and cannot be viewed under the microscope;
5.2 Do not use the device when the root canal wall is thin;
5.3 Do not use the device when the broken root canal file is located in the apical position;
5.4 Do not use the device if the root canal wall may be perforated during use.

6. Warnings

6.1 This device is intended for use by trained dentists only.
6.2 The Extractors, Access Files, Shapping Reamers, and Trephine Drills are single-use instruments, and repeated use might increase the risk of instrument fracture.
6.3 Read all the contents of this instruction manual carefully before use;
6.4 Please use the original Wrench to prebend the Extractors to avoid damaging the equipment;
6.5 It should be considered for the curvature of the root canal, the thickness of the root canal wall, and the fracture part in the depth of the root canal before or during use this product;
6.6 In the process of use, it is necessary to detect the forward direction of the device and the bending direction of the broken device;
6.7 Check the device before and after each use, such as fatigue of the Cannula and Inner core of Extractor Shank. If it is damaged and cannot be used normally, it should be replaced in time.
6.8 Select Extractors with corresponding specifications according to the specification of broken files and its broken locations.
6.9 The product has not been sterilized before delivery, so please sterilize it before use.
6.10 It is recommended to use the device under microscope.

7. Product Performance

7.1 This device is used by pushing the push cap at the end of the Extractor Shank to clamp the crushing device and then remove the broken instruments or other foreign objects in the root canal.
7.2 The Wrench can adjust the bending angle of the Extractors according to the position of the affected tooth. The factory bends 45 degrees, and the maximum can be adjusted to 90 degrees;
7.3 The Wrench also can be used to hold the head of the inner core of Extractors to be installed on the Extractor Shank;
7.4 The Extractor Shank and Wrench can be reused after disinfection.
7.5 The metal outer box of this device is made of high temperature resistant material, so it can be used as a disinfection box;
7.6 Access Files are heat-activation and prebendable NiTi rotary files;

8. Direction for Use

8.1 **Root canal enlargement**: It is recommended to use a suitable size Peeso Reamer to expand the root canal passage (recommended to use DENCO Gate Drills #03 or #04 at a speed of 800rpm), until it is close to the end of the broken root canal file;

8.2 **Rinsing the root canal**: rinse the dentin of the root canal;

8.3 **Establishing a straight channel**: choose a suitable **Access File**, and it is recommended to **clockwise rotate** at a speed of 300rpm to remove the dentin in the root canal, so that the coronal curvature can be straightened by moving the shaft body, so as to establish a file that can directly contact the broken root canal aisle;

8.4 **Removing the Dentin**: Choose a suitable **Shapping Reamers** of appropriate size. It is recommended to **counterclockwise rotate** at a speed of 150rpm and grind at a low speed to flatten the channel to the broken root canal file;

8.5 **Rinsing the root canal**: rinse the dentin of the root canal, it is recommended to use an ultrasonic oscillator to rinse the remaining dentin;

8.6 **Sleeving the broken files using Trephine Drills**: Choose a Trephine Drills with a suitable size. It is recommended to **counterclockwise rotate** at a speed of 150rpm, insert the broken file at a low speed, and remove the dentine around the upper end of the broken file at 1-1.5mm, then the broken file might be brought out by the Trephine Drill. If it is not brought out, continue to use the Trephine Drill to remove the dentin until the broken file exposes 2-3mm;

8.7 **Pulling out the broken files using the Extractors**: Select a Extractor of appropriate size (Ø0.8, Ø0.9 or Ø1.10), use a wrench to bend the working part of the extractor to required angle, and install the Extractor on the Extractor Shank. Insert the working part of the extractor into the root canal, press the push cap of the extractor shank to clamp the broken file, and pull out it.

8.8 **Installing the Extractor on shank:**

- Use a wrench to gently pull out the head of inner core of Extractors to expose the head of the inner core.
- Remove the sleeve below the Extractor Shank, press the push cap of Extractor Shank, put the head of inner core of the extractor into the clamping position of the Extractor Shank, and push it to lock;
- Install and lock the sleeve, and lock the elastic nut;
- At this point, if press the push cap of Extractor Shank, the inner core can be pushed up and down in the side hole of the extractor, then the installation is successful.

12. Symbol

	Non sterile		Medical device
	Sterile at specified temperature		Extractors, Access Files, Shapping Reamers and Trephine Drills are unusable
	Fore Dental Use only		Please read the manual before use

13. Cleaning, Disinfection and Sterilization

13.1 Cleaning: Clean the visible dirt on the surface of the Exatractor shank and various parts with negative ion water < 38°C; clean the clamping sleeve, and dry the cleaned part with a clean cloth;

13.2 Disinfection: Wipe the surface of each part with medical alcohol;

13.3 Drying: After cleaning and disinfection, please let it dry, it is recommended to use compressed air to dry.

13.4 Packing: The dried components should be put into the sterilization bag and sealed immediately.

13.5 Sterilization: Steam sterilization at 132°C for 4 minutes.