EndoPilot.
Endo motor and
apex locator all-in-one.

As of October 2023

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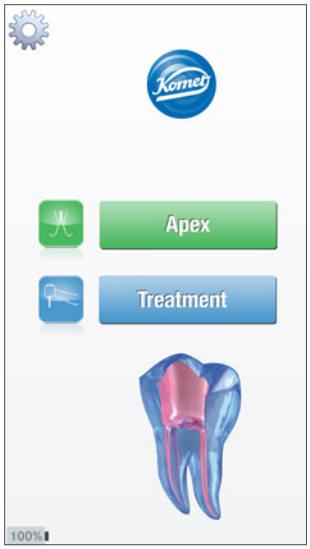
Apex
Treatment
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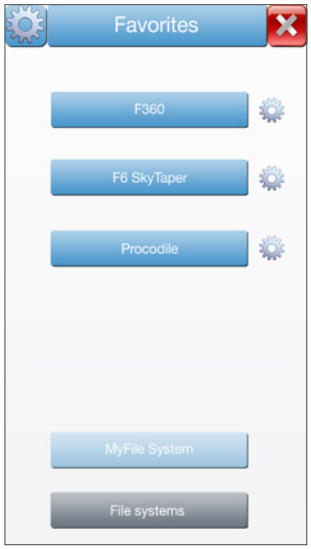
Favorites
F360
F6 SkyTaper
Procodile
MyFile System
File systems


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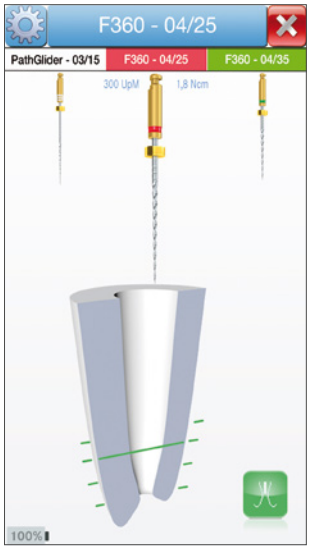

F360 - 04/25
PathGlider - 03/15
F360 - 04/25
F360 - 04/35
100%


EndoPilot
Apex
Treatment
100%

EndoPilot

For an efficient and safe preparation of the root canal.

User-friendly complete solution: the perfect union between Endo motor and apex locator.
This torque and speed controlled endodontic motor ensures an efficient preparation of the root canal. It is provided with an ultra-modern integrated apex locator which allows an exact, real-time determination of the length, thus ensuring complete safety and full control of the actual position of the file at all times.

The EndoPilot contains a preprogrammed file library containing the parameters of the F360, F6 SkyTaper FQ, Procodile (Q) files and other commonly used file systems. The operator has the option to develop individually adapted sequences and to save them based on their own preferences.

The EndoPilot features a large, 7-inch easy-to-read touch screen which guides the operator through the menu thereby allowing all functions to be found quickly and easily.

Thanks to its slim stand, the wireless remote foot switch and the battery-powered operation, the EndoPilot is particularly practical in small work spaces and is very user-friendly.

- 7-inch colored touch display
- Easily updated to allow for future developments with a micro SD card
- Modern, attractive design
- High-grade metal support and concealed cable routing

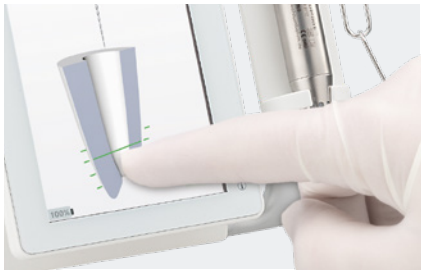
The endodontic motor
Safety and efficiency thanks to state-of-the-art technology

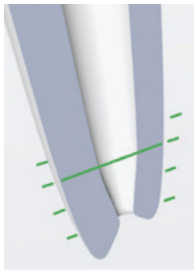
This powerful, torque and speed controlled endodontic motor ensures a comfortable, efficient and safe preparation of the root canal. It is provided with colored LED lights which indicate the direction of rotation, the torque limit and the position of the apex.

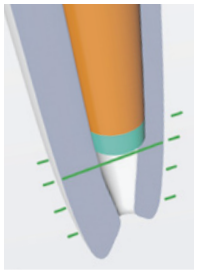
Once the preset torque has been reached, the twist-function prevents jamming of the file by performing alternating movements to the left and right. This torque limiting function is equally effective when the motor rotates in an anti-clockwise direction. Thus when rotating in a clockwise direction, the motor works with maximally 80 % of its nominal torque to ensure that the other 20 % is available for reverse operation.

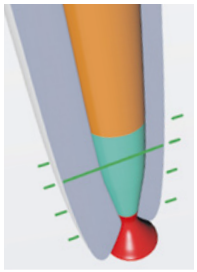
The EndoPilot motor is also provided with a torque limiting function when approaching the apex. This function limits the cutting efficiency of the file in the apical region and ensures continuous evacuation of chips from the root canal.

At this point, many other motors will switch to reverse operation, which will lead to the debris being conveyed towards the apex. The EndoPilot shows equally intelligent behavior when the apex has been reached. Unlike other motors, it does not switch to anticlockwise rotation, but it instead stops briefly before it carefully resuming clockwise rotation.









The apex locator
Full control thanks to precise, real-time measurements

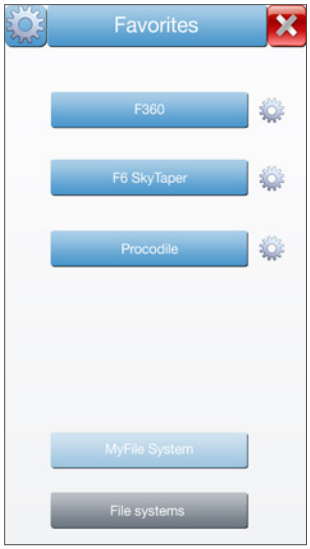
The fully insulated electric contra-angle provided together with the EndoPilot was especially developed for use in endodontics. In combination with this contra-angle, the integrated apex locator allows for an exact, real-time determination of the length during preparation. The operator is always in full control of the current position of the file. He/She can therefore work in complete safety. The contra-angle directs the signal of the apex locator directly to the file, thus eliminating the need for annoying file contact bows. Thanks to the complete insulation of the motor and the contra-angle, measuring errors, for example caused by contact with the mucosa, are excluded. The precise electronic measurement of the length is carried out according to the impulse measurement technique within a fraction of the usual time.
The instant analysis of the signal allows the apex to be measured in real-time during preparation.

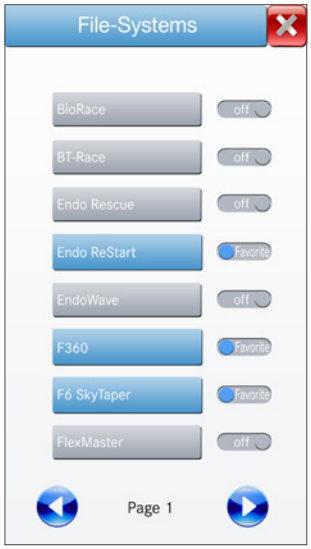
The depth of the preparation can be changed by simply moving the marker (cross bar on the apex indicator) on the touch display.

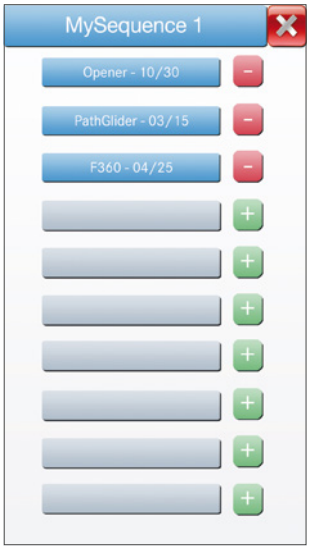
The apex locator can even be used – without endodontic motor – to determine the preparation length with manual files in combination with a file clamp.

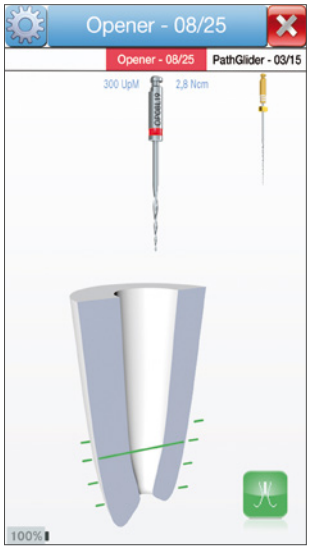
All functions of the EndoPilot are selected on the clearly laid-out touch display which can be used with certainty as the data is entered directly on the display.

A gentle touch of your finger tip is enough to make the EndoPilot automatically choose the next file within the selected file sequence.









Favorites - File library

The menu “Favorites” offers the option to choose five favorite file systems from various pre-programmed file systems. The advantage is that the most frequently used file system can be accessed immediately. The favorite file system is selected by pressing the file icon, and the file library can be accessed via the menu item “all file systems”.

The EndoPilot is features a file library containing the parameters (i.e. speed, torque etc.) of the F360, F6 SkyTaper FQ, Procodile (Q) and Endo ReStart files made by Komet and nearly all other commonly used file systems.

The file library can easily be updated by installing new file systems. The memory capacity of the EndoPilot is sufficient to store 1000 different files and their respective parameters!

MyFile – develop and save your own individual sequence

The function “MyFile” allows the operator to develop individually adapted sequences. To do this, the individual files and their parameters can be taken from the file library and combined as required. The new sequence can then be saved under “MyFile.” The speed and torque are automatically imported from the file library. The user is of course free to change the preset speed and torque values if necessary to meet their preferences.

EP0014.000
EndoPilot

Advantages at a glance:

- Endo motor and apex locator all-in-one
- Modern, attractive design
- Fully insulated motor and contra-angle
- 7-inch color touch display
- Wireless remote foot switch
- Easily updated to allow for future developments with a micro SD card
- Battery operated (Charging time approx. 9 hours; Battery lifetime during continuous operation approx. 15 hours
- High-grade metal support and concealed cable routing
- File library with many preset file systems
- Option to install individually adapted sequences
- Clearly laid out menu and easy to operate
- Precise length measurement in real-time via a patented pulse measurement procedure
- Customizable preparation length at the apex locator
- Motor functionality to stop once the preparation length has been reached
- Reduced torque in vicinity of the apex

ReFlex.
Intelligent movement.

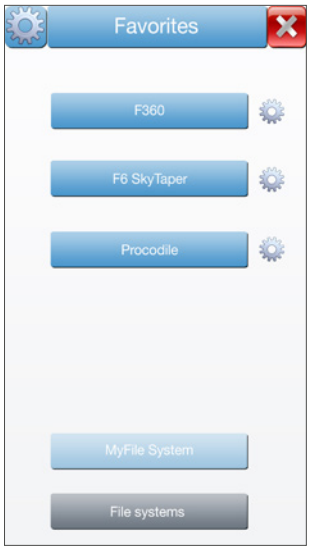
ReFlex recognizes the torsion of the file - thereby minimizing the risk of fracture

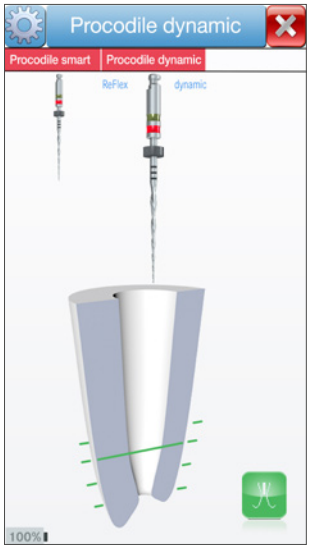
ReFlex is a patented anticlockwise movement pattern on the EndoPilot, which is exclusively available for the Procodile file system and the reciprocating Opener. This movement intelligently combines the advantages of rotary and reciprocating movements. ReFlex is capable of determining both the torque load on the instrument shank and the torsional stress exerted on the file. Thanks to this intelligent feature, the motor is able to identify the part of the file that is subjected to the load.

ReFlex is characterized by its full-circle motion which is interrupted by short regular breaks to continuously control the torque load and torsional stress exerted on the file. Torsional stress stands for straightening of the blades when the instrument tip jams in the root canal. By determining the torque and torsional stress of the file, the motor identifies the part of the root canal which is subjected to the load, i.e. the coronal, center or apical third. Depending on the chosen mode, the motor performs a movement that is duly adjusted to the situation.

Thanks to this ability to differentiate, the motor ensures optimal use of the file thereby minimizing the risk of fracture. If the file is only subjected to minor loads, the motor does not perform an active backward movement. This allows optimal evacuation of the debris from the canal. Thanks to this intelligent behavior, the ReFlex movement provides extra security and increased efficiency during the preparation of the root canal.

The ReFlex movement can be operated in two different modes. The ReFlex **smart** option reacts more sensitively to jamming of the file, thereby ensuring greater security. The ReFlex **dynamic** mode is characterized by its greater speed, which means increased efficiency during the preparation of the root canal. During the preparation of root canals with a more complex canal anatomy, the user can switch back to the more tactile ReFlex smart option at any time. We, therefore, recommend working with a combination of both modes depending on the given situation.



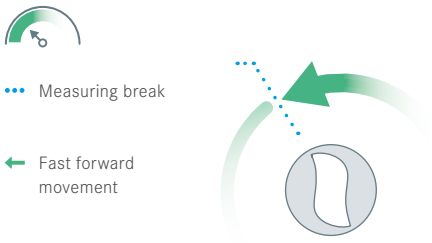


ReFlex dynamic.
Maximum efficiency.

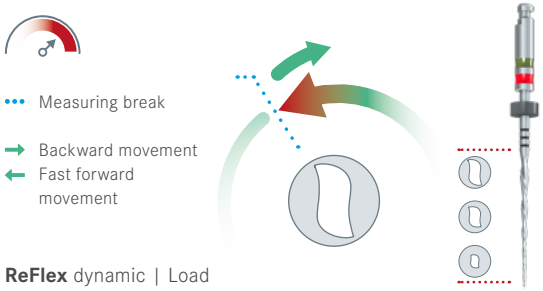
The ReFlex dynamic mode mainly focuses on the efficiency of the preparation. Only when the file jams as previously defined, does the motor switch to a backward movement to relieve the stress exerted on the file irrespective of which part of the file is subjected to stress. Afterwards, the file returns to the cutting direction as quickly as possible. The ReFlex dynamic mode, therefore, enables a fast and efficient preparation of the root canal.

Advantages:

- Clocked movement in cutting direction for optimal removal of debris
- Very fast work with maximum efficiency
- Ideal for straightforward canal anatomies
- Efficiency comparable to that of all-rotary movement



ReFlex dynamic | Minor load or no load at all



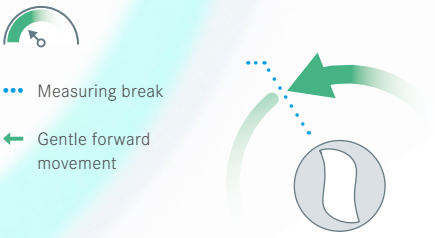
ReFlex dynamic | Load

ReFlex smart.
Maximum tactility.

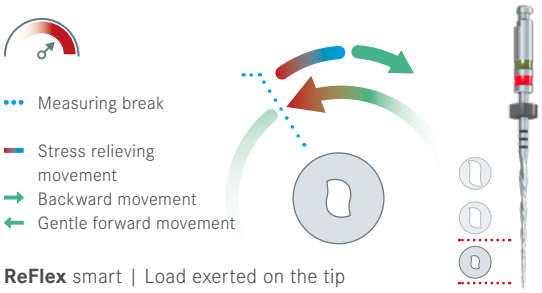
In the ReFlex smart mode, the EndoPilot is set to a considerably higher level of sensitivity based on the position of the load exerted (coronal, central, apical). For example, the EndoPilot operates at a lower speed when the file works in the apical region. In the event of the file jamming, the motor reacts by performing a gentle stress relieving movement. In contrast, when the file jams in the coronal part, the motor accelerates speed. Depending on which part of the file is subjected to the load, the intelligent ReFlex smart movement is as tactile as necessary and as efficient as possible.

Advantages:

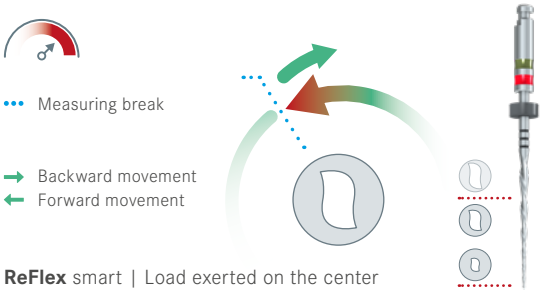
- Increased safety and tactile work during treatment
- Ideal for more complex canal anatomies due to gentle motion in case of torsional stress
- Intelligent root canal preparation which is adapted to the stress level
- Tactile and efficient in the canal



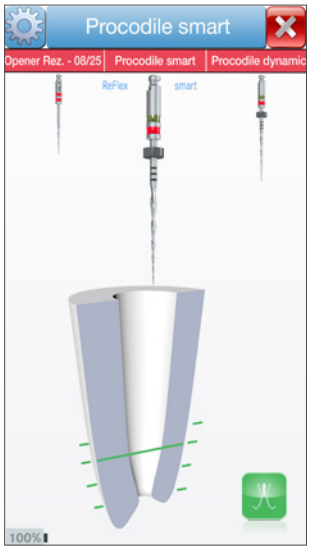
ReFlex smart | Minor load or no load at all

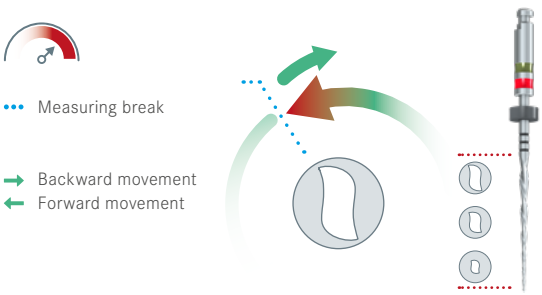


ReFlex smart | Load exerted on the tip



ReFlex smart | Load exerted on the center





ReFlex smart | Load exerted on most of the working part

Accessories **EndoPilot.**

EP 0125 EndoPilot contra-angle
Fully insulated contra-angle for apex measurement, transmission 1:1.

109 2361.000.000 EndoPilot Foot switch
Apex cable set

109 2311.000.000 EndoPilot apex cable set
EndoPilot Apex cable set – Set consisting of the measuring cable with plug, lip clip, cap for lip contact, cable for the file clamp, file clamp

109 2314.000.000 EndoPilot Lipclip
Lip clip for measuring the apex with an apex cable

109 2351.000.000 EndoPilot Twin Foot switch
Remote twin foot switch for the EndoPilot

109 0112.000.000 EndoPilot Motor
Motor for the EndoPilot with ISO-E connection, LED display and apex contact for the EndoPilot

109 2203.000.000 EndoPilot AC/DC Adapter
Adapter for the EndoPilot with primary plug for EU 12V 1,5A 100-240V

DownPack and **BackFill**.

For a tightly sealed three-dimensional obturation of the root canal.

Highly efficient, safe and homogenous root canal obturations can be achieved with the hot vertical condensation technique.
Thanks to the modular design of the Endo-Pilot, the additional modules DownPack and Backfill can easily be integrated, even retro-spectively, for thermoplastic obturations without need for any additional devices.

Advantages at a glance:

- Endo motor, apex locator and thermo-plastic obturation system all in one
- Optional upgrading of the EndoPilot by integrating DownPack and BackFill, at a later point, if required
- The slim shape of the DownPack hand piece allows an unobstructed view of the treatment site
- The heating tip of the DownPack heats up in seconds
- More safety for the patient as the heating tip does not heat up until it is inside the canal and cools down again very quickly
- 5 heating tip sizes to choose from
- The DownPack module for the safe and clean separation of gutta-percha when using cold filling techniques is also available separately
- Easy to operate BackFill gun for optimum control and adjustment of the flow rate of the filling material
- Short heating times thanks to efficient controls
- BackFill cannulas are available in 3 different sizes

DownPack and **BackFill**.

DownPack – tight sealing of the apical third.

The DownPack module allows a tight, three-dimensional sealing of the apical third of the root canal. The low-weight DownPack hand piece is easy to handle. Its slim shape allows an unobstructed view of the treatment site. Available in 5 different sizes, the heating tip can be inserted and exchanged easily and safely in an instant. The slim heating tip reaches the cavity with ease and allows the gutta percha to be separated precisely either directly at the canal entrance or closer to the apex. The DownPack hand piece is inserted in a cold condition and gets activated by the foot switch when it reaches the gutta-percha inside the tooth. Once activated, the heating tip heats up in seconds and cools down again just as fast after use. The short heating-up time, the brief contact with the tissue and the quick cooling-off time are all properties that ensure great patient safety and prevent the filling from loosening.
The DownPack module can also be used in cold filling techniques for safe and clean separation of the gutta-percha.

Recommended temperature setting:
300 – 350°C

BackFill – thermoplastic filling of the center and coronal third.

To conclude the treatment, the center and coronal thirds of the root canal are filled with the help of the BackFill gun. The grip ensures optimum control of the filling process. The lever of the grip is easy to operate and allows a perfect adjustment of the flow rate. Different temperatures can be selected on the touch display and the efficient control ensures short heating times. Standard gutta-percha pellets are used as filling material. The cannulas are quick, safe and easy to use. They are available in three sizes.

Recommended temperature setting:
180 – 200°C

Step by Step.

Preparation

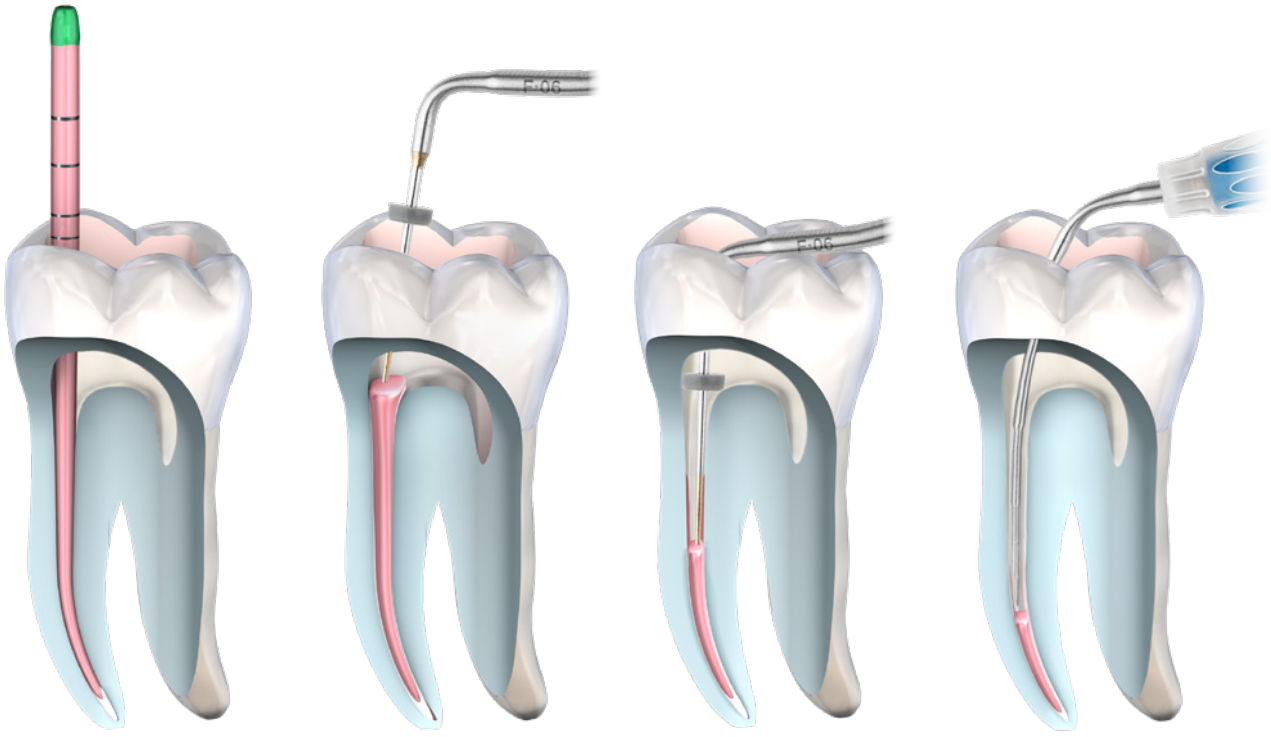
1. After successful conclusion of the root canal preparation, coat the master point with sealer (e.g. EasySeal) and insert into the canal.

DownPack

2. Remove excessive gutta-percha with the DownPack heating tip down to the pulp chamber floor.
3. Then cut the gutta-percha up to approx. 3 mm short of the apex and condense for example with a manual spreader.

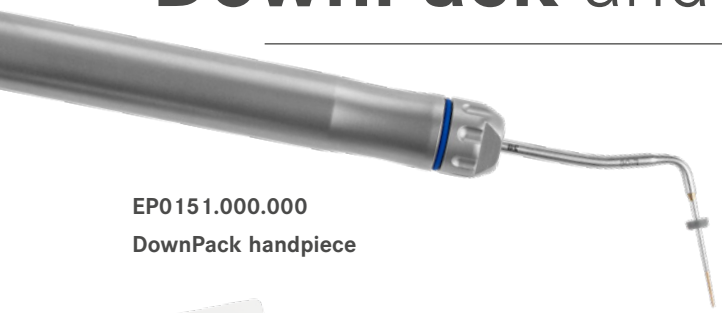
BackFill

4. Fill the center and coronal third of the root canal with the BackFill gun in short squirts of approx. 3 mm at a time. Condense with a manual spreader every now and then to obtain a homogenous filling.



Schematic diagram

Accessories
DownPack and **BackFill**.



EP0151.000.000
DownPack handpiece

EP2302.000.000
DownPack/BackFill holder
Holder attached at the left-hand side of the EndoPilot for storage of the DownPack hand piece and the BackFill gun.

Heating tips
for the DownPack
hand piece in 5 sizes:
EP0152.000.504 - ○ grau
Heating tip fine, F 050/.04,

EP0153.000.505 - ○ yellow
Heating tip fine/medium, FM 050/.05

EP0154.000.507 - ○ red
Heating tip medium, M 050/.07

EP0155.000.509 - ○ blue
Heating tip medium/large, ML 050/.09

EP0156.000.404 - ○ green
Heating tip extra fine, XF 40/.04

Application tip for
BackFill gun in 3 sizes:
EP1044.000.020 - Ø 20 ga, 5 needles

EP1045.000.023 - Ø 23 ga, 5 needles

EP1046.000.025 - Ø 25 ga, 5 needles

EP0142.000.000
Guttapercha Pellet (100 pellets)
for BackFill gun

EP0148.000.000
Cleaning set (2 brushes)
for BackFill gun

EP1041.000.000
BackFill Pistole Obtura Max

EP1042.000.000
Coupling nut for
BackFill gun
The application needle is screwed onto the BackFill gun by means of a coupling nut.

EP1043.000.000
Protective sleeve for BackFill gun,
4 sleeves
For protection from thermal damage

EP0147.000.000
Multi Tool for BackFill gun
For shaping of the BackFill needles and for screwing them on and off

Technical data.

Type	EndoPilot
Power supply[1]	Input: 100–240 V/AC (50–60Hz) Output: 12 V/1,25 A/DC or 12 V/1,5 A/DC The power supply unit complies with IEC 60601 for medical devices. (Only use the original power supply unit provided with the EndoPilot). Recharge device regularly, at least every 6 months.
Battery	Li-Ion Akku, 7.2 V, Power: 48 Wh
Electric protection class	II
Output	max. 3 V/5 A or 12 V/1.25 A (direct current)
Speed	200–1.000 min^{-1} +/– 10 %
Torque	0,2–5 Ncm +/– 10 %
Device class	Class according to EN 60601: Application part type BF Do not use device in areas exposed to explosion hazards. Keep device away from flammable substances.
IP class	IP31 EndoPilot and remote foot switch IP40 Power supply unit
MPG/EU class	IIa
Environmental conditions During operation: During transport:	Air pressure 800 hPa to 1060 hPa +59 °F bis +104 °F/air humidity: 20–80 %, non-condensing –59 °F bis +140 °F/air humidity: 20–80 %, non-condensing
Weight	1450 g EndoPilot Controller
Dimensions	19 cm x 20,5 cm x 17,5 cm
Charging time of the battery	Approx. 9 hours
Battery life in continuous operation	Approx. 15 hours
Batteries for the remote foot switch	2 x 1.5 V AAA batteries

Subject to technical modifications.
[1] Do not use other power supply units. The power supply unit is essential for the safe use of the device.

Komet Dental
Gebr. Brasseler GmbH & Co. KG
Trophagener Weg 25 · 32657 Lemgo
Postfach 160 · 32631 Lemgo · Germany

Verkauf Deutschland:
Telefon +49 (0) 5261 701-700
Telefax +49 (0) 5261 701-289
info@kometdental.de
www.kometdental.de

Export:
Telefon +49 (0) 5261 701-0
Telefax +49 (0) 5261 701-329
export@kometdental.de
www.kometdental.de

Komet Austria Handelsagentur GmbH
Hellbrunner Straße 15
5020 Salzburg · Austria

Telefon +43 (0) 662 829-434
Telefax +43 (0) 662 829-435
info@kometdental.at
www.kometdental.at