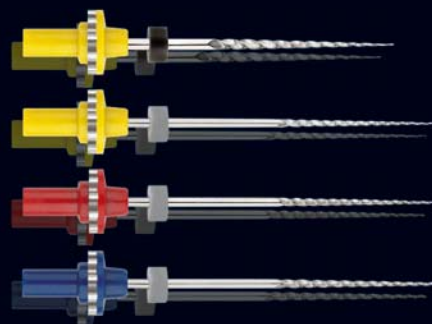
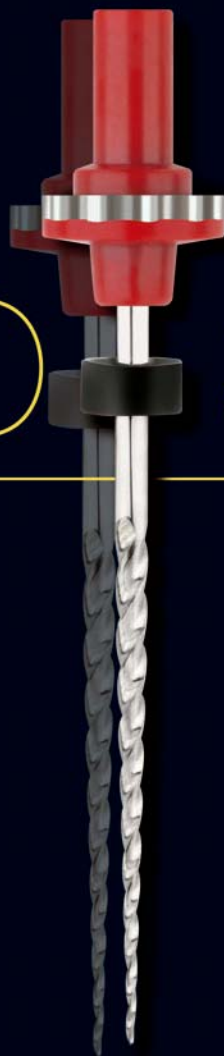


HERO Shaper[®]



*We invent,
you succeed!*

We invent HERO Shaper®.
You succeed your root canal treatments!

Summary

- Characteristics.....page 4
- Instruments.....page 6
- Protocolpage 10
- Questions & Answerspage 16
- Clinical casespage 19



Introduction



Using HERO Shaper® for orthograde treatment has never been quicker and simpler. Conditions such as irreversible pulp pathology, pulpitis and necrosis are easily managed using the HERO Shaper® rotary nickel - titanium instruments at low speed.

HERO Shaper® files, with their pronounced tapers, are designed for use with the crown-down technique to progressively remove constraints and flare the canal. The coronal third is prepared using .06 taper HERO Shaper® files and the apical third is prepared using .04 taper HERO Shaper® files. The varying helical pitch and length of the cutting portion of the files provide them with an excellent combination of efficiency and flexibility.

Using continuously rotating HERO Shaper® files along the entire length of the root canals with circumferential filing optimises preparation. Cleaning is much more efficient because the progressive flaring of the canal as the instrument is introduced allows the irrigation needle to be inserted down to the apical third.

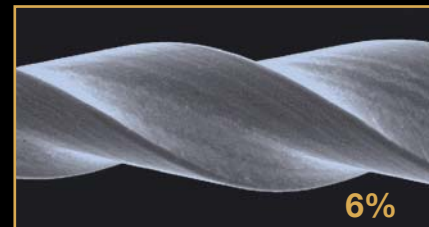
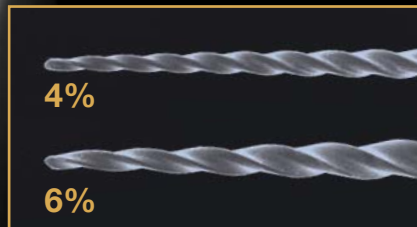
Regular, tapered preparations with the resulting enlargement of the apical zone (no.30 – .04 taper) facilitate the adjustment and insertion of the gutta-percha master cone. It also ensures that the root canal system is filled completely and tightly by condensation of the filling material.

Developed in 2001 by the MICRO-MEGA® R&D Department, the HERO Shaper® line is now available in an InGeT® version like the R-Endo® canal retreatment instruments.

HERO Shaper[®]

An innovative pitch!

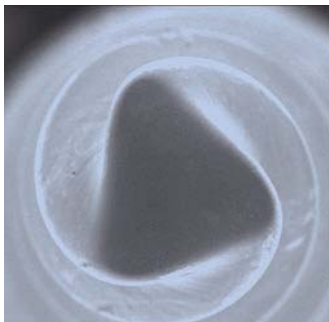
- Avoids screwing effects: the helical angle of the cutting edges varies from the tip to the shank.
- The new pitch also varies according to the taper: the more tapered an instrument is, the longer is its pitch; This can be described as an ADAPTED PITCH. Increased instrument performance: Efficiency / Flexibility / Strength.



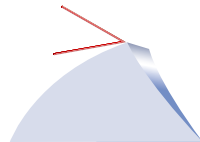
A positive advance in root canal preparation

The blade shows a triple helix cutting edge.

The tip is inactive in order to follow the canal anatomy.

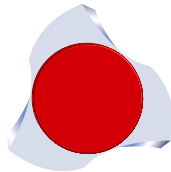


SEM view of the tip of a n°25 .04 taper HERO Shaper®



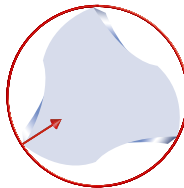
Positive rake angle

for excellent debris
evacuation.



Big inner core

for excellent resistance
to breakage.



3 edges

for better force
balance.

This root canal treatment method is faster and allows:

- Improved patient **comfort**.
- **Time saving:** 10 seconds of use per instrument for efficient shaping.
- Reduced operator fatigue.
- Less instruments to handle.
- Reproducible results.
- Increased **safety**:
 - no screwing effect,
 - excellent debris evacuation.

Anti Breakage Control:
the instrument “unwinds” to
prevent the risk of fracture.



See conditions of use page 18

Innovative

InGeT®
(Integrated Gear Technology)



Actual size

- || Miniaturized head.
- || Ergonomics.
- || Visibility.
- || Accessibility.



The HERO Shaper® line is available with InGeT® shafts to be fitted on the micro head InGeT® contra-angle...

2 concepts: the choice

...and with **Classics** shafts (Ø 2.35) to be fitted on an endo reducing contra-angle (AX'S Endo® for instance).

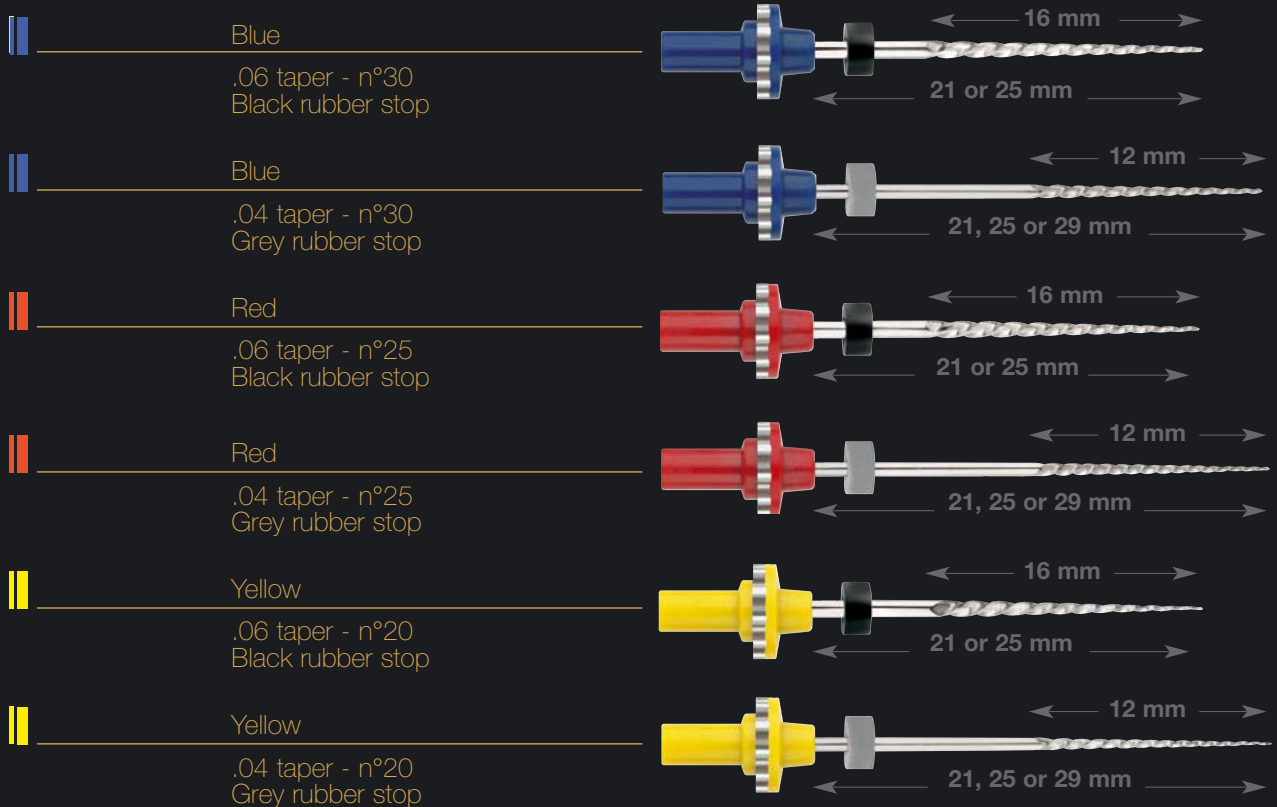


Classics

AX'S Endo® contra-angle

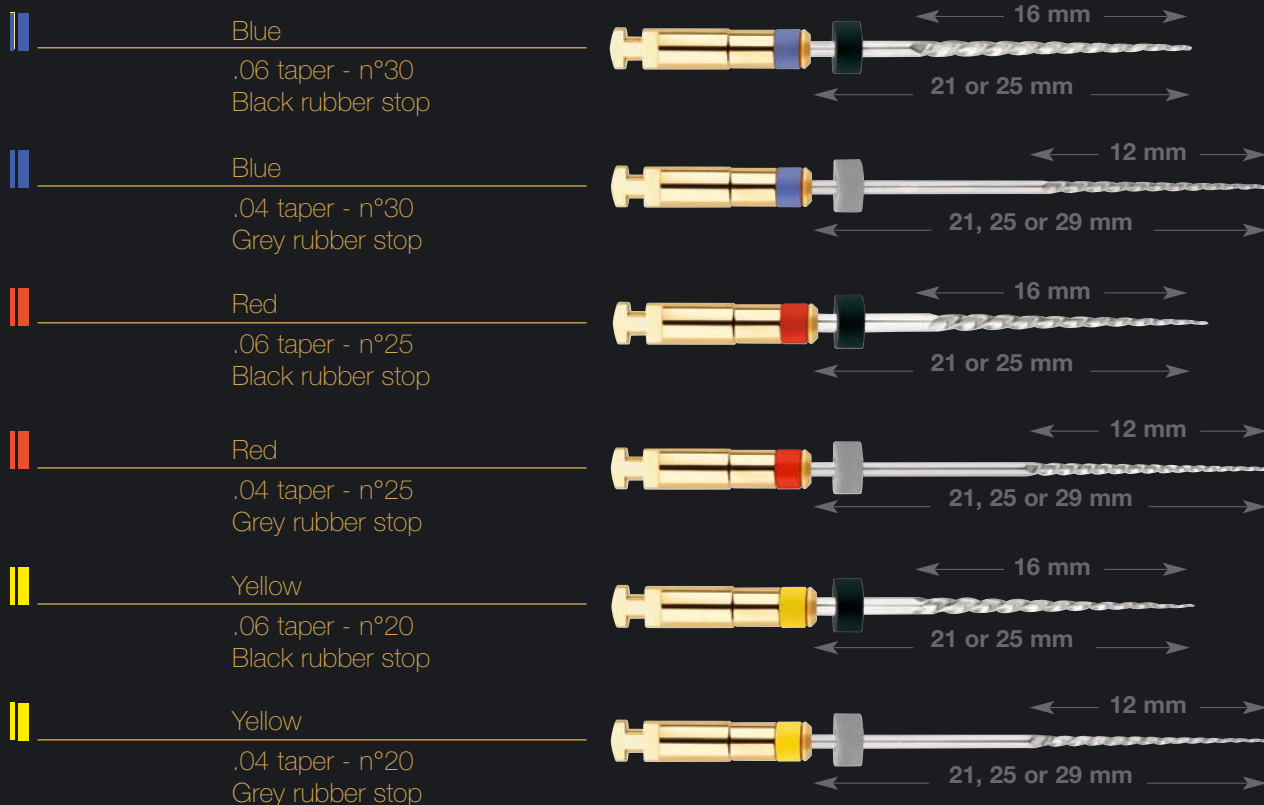
instruments

HERO Shaper® InGeT® series



instruments

HERO Shaper® Classics series



Instrumentation sequences

Protocol

Yellow sequence

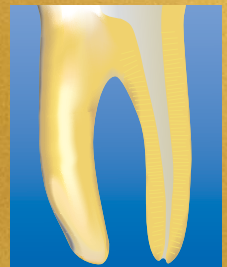
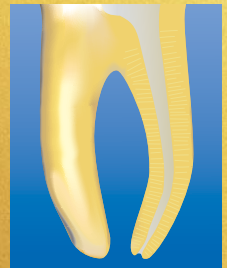
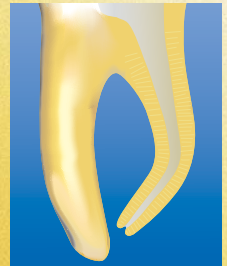
Difficult canals, severely curved, possibly with significant hypercalcification, making any first penetration tricky with the finest hand files.

Red sequence

Canals of average difficulty with a moderate curvature and/or more hypercalcification, making first penetration with a n°10 K file hard to achieve.

Blue sequence

Easy canal preparation, low curvature, orifice and canal large enough to allow a n°15 K file to reach the apex.



according to canal type

Rotation speed

- The rotation speed must be 300 to 600 rpm.

First penetration

- The first penetration is performed with a conventional hand instrument (usually a n°10 K file-MMC n°10/21 mm). This is used to confirm the working length (WL), canal anatomy and diagnosis from the pre-operative X-ray.
- Canal mineralisation and curvature will determine the treatment difficulty and thus the most suitable instrumentation sequence for the clinical case.

Penetration levels

- .06 taper files are brought to 2/3 of the working length. .04 taper files are brought to WL. An accurate determination of the working length between the passage of the .06 and .04 file is strongly recommended.

Operating procedure

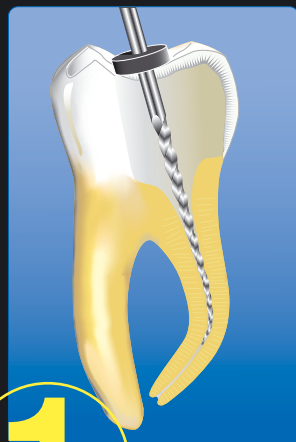
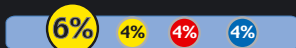
- HERO Shaper® is positioned at the canal entrance. The motor is started and maintained at constant speed whilst the file is working and until it is completely withdrawn from the canal.
- The file is inserted to the desired working length with a short in and out movement using light pressure.
- HERO Shaper® also allows circumferential filing to be achieved which permits the canal anatomy to be taken into account and in particular to shape lateral zones.

Irrigation

- It is important to thoroughly irrigate the canal between the passage of successive instruments.

6%
2/3 WL

4%
WL



1

n° 20 - .06 taper

Bring the HERO Shaper®
n°20 - .06 taper to the 2/3 of WL.



2

n° 20 - .04 taper

Bring the HERO Shaper®
n°20 - .04 taper to WL.



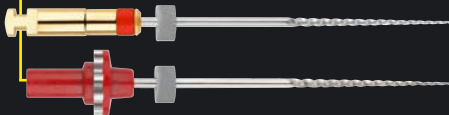
6% 4% **4%** 4%



3

n° 25 - .04 taper

Bring the HERO Shaper®
n°25 - .04 taper to WL.



6% 4% 4% **4%**



4

n° 30 - .04 taper

Bring the HERO Shaper®
n°30 - .04 taper to WL.



Red sequence

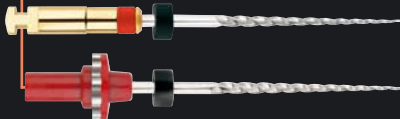
Intermediate cases



1

n° 25 - .06 taper

Bring the HERO Shaper®
n°25 - .06 taper to the 2/3 of WL.



2

n° 25 - .04 taper

Bring the HERO Shaper®
n°25 - .04 taper to WL.



3

n° 30 - .04 taper

Bring the HERO Shaper®
n°30 - .04 taper to WL.



Blue sequence

Simple cases

1



n°30 - .06 taper

Bring the HERO Shaper®
n°30 - .06 taper to the 2/3 of WL.



2



n°30 - .04 taper

Bring the HERO Shaper®
n°30 - .04 taper to WL.



Questions & Answers

What are the benefits of the InGeT® system?

A miniaturized head

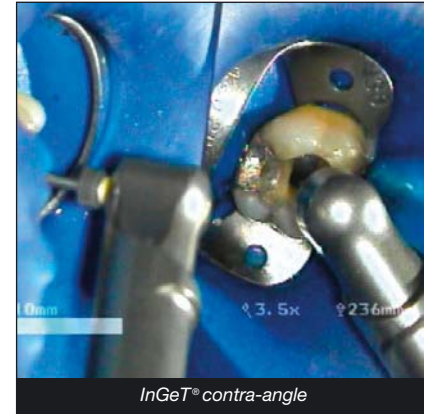
- Very compact head: 6.5 mm diameter and 7.5 mm high.
- Increased visibility of the operative field.
- Better visibility of the instrument when it is inserted in the canal and a better vision of the instrument while working. This is particularly useful when treatment is made under magnification (magnifying loupe or microscope).
- Considerable reduction of the total length of the instrument + contra-angle head in the mouth.
- Exceptional working comfort.

Reduced visibility



Traditional contra-angle

Wide visibility



InGeT® contra-angle



Actual size

Ergonomics

- Excellent stability in the hand.
- Straight handle as an extension of the hand:
 - Better tactile sensitivity.
 - Easy access to the operating field.
 - Better access to posterior teeth.
 - Increased working accuracy.
- A head angle especially designed for an excellent visibility and easier work in the most difficult access zones.

Extremely simple head mechanism:



- Less interfaces more reliability.
- Reduced maintenance.



- Less vibration.
- Greater ease of cleaning.
- Increased safety.

Questions & Answers

■ When should I confirm the working length?

An initial estimation of the WL can be determined based on the pre-operative X-ray and after the first penetration of the N° 10 K file (MMC). After this, the HERO Shaper® .06 file can be safely used to prepare the coronal third of the canal. Once most of the interferences have been eliminated, the WL can be determined with greater precision and the HERO Shaper® .04 file can be safely used to prepare the apical third.

■ How do I measure the WL?

WL is measured using an apex locator such as Apex Pointer™ and/or a pre-operative X-ray.

■ Is it necessary to pass a hand MMC file between each HERO Shaper®?

Passing a small-tip-diameter manual file (N° 10 or 15) between each HERO Shaper® makes it possible to determine whether dentine chips or pulp debris are blocking the canal. The use of a hand file is mainly recommended for difficult cases, especially fine canals.

■ Should I verify apical patency? If so, how?

Apical patency should be verified at the end of the preparation. A slightly pre-curved hand MMC N° 10 file is especially suitable, generally sufficient and non aggressive for this procedure.

■ Should I always follow the recommended sequences?

You do not necessarily have to follow the recommended sequences, but it is preferable to do so. However, when an operating difficulty has been over or underestimated, the preparation sequence may be changed for one that uses a sequence of instruments that is better adapted to the difficulty.

■ Is the rotation speed of great importance?

HERO Shaper® files, like all Ni-Ti preparation instruments, are used at a low rotation speed. The choice of speed is left to the practitioner, but must be between 300 and 600 rpm. It is, however, very important that the rotation speed remains constant and regular.

■ Why the adapted pitch?

The concept of the adapted pitch used for HERO Shaper® files involves varying the length of the pitch or the cutting portion as a function of taper. The resulting instruments are thus very flexible and perfectly adapted to the work required of them.

■ Why is there no .02 taper as with the HERO® 642 system?

Since HERO Shaper® files are very flexible, a file with a .04 taper can be introduced down to the apical limit with no danger of deviation, which increases the flare of the canal and thus facilitates cleaning and filling.

■ Is there any risk of screwing effect with highly tapered instruments?

No, because the increased pitch of the .04 taper instrument considerably reduces the screwing risk.

■ What should I do if I want to widen a large canal beyond n° 30?

If the canal is straight, the preparation can be continued down to the apex with a .06 file. If not, specific instruments must be used, i.e., HERO Apical® files.

Questions & Answers

■ Why is the use of a torque control contra-angle or motor unnecessary?

A torque control contra-angle or motor is used to limit torque. In the event of major constraints, for example when the instrument is forced or becomes stuck, the rotation stops. Since the design of the HERO Shaper® files makes them very resistant to breakage, using a torque control contra-angle or motor is not necessary. In addition, the Anti Breakage Control allows the instrument to “unwind” in the event apical blockage occurs, considerably reducing the need for torque control.

■ Should I clean the grooves between two passages?

Yes. When the grooves are loaded with debris and sludge, HERO Shaper® files are much less efficient. In addition, the risk of “unwinding” rises because the debris-filled grooves prevents the cutting edges from working efficiently.

■ How should I clean the grooves of the HERO Shaper® files?

You can clean the HERO Shaper® between two passages using a compress soaked in a sodium hypochlorite solution.

■ How many sterilisation cycles can HERO Shaper® files withstand?

Metal fatigue of HERO Shaper® files is caused more by the number of times the files are used than by the number of sterilisation cycles, so long as the recommended sterilisation conditions, time and temperature are respected.

■ How many canals can I treat with a HERO Shaper® file?

From 6 to 10 canals can generally be treated with a single HERO Shaper® file. However, major constraints can cause premature metal fatigue, which is most often seen with the “unwinding” of the grooves (Anti Breakage Control). It is thus essential to comply with the recommended technique and, especially, to avoid any pressure on the head of the contra-angle causing “unwinding”. It is also important to scrupulously check the files after cleaning and sterilisation. Instruments that show signs of wear and “unwinding” should be discarded.

■ Why the HERO Shaper® are not multi-tapered instruments?

The HERO Shaper® system is designed for use with the crown-down technique to progressively remove interferences and flare the canal. The system is made up of files with different tapers, each of which is designed for a specific use, i.e., to prepare a specific portion of the canal. Thus, progressive flaring of the canal is achieved. This limits the screw in phenomenon, which generates high stresses and can lead to instrument breakage.

■ Can HERO Shaper® files be used for endodontic retreatment (ERT)?

HERO Shaper® files are not designed for ERT. Their great flexibility means they can be used to prepare any canal, even the most difficult. However, they are not designed to deal with the stresses encountered when ERT is performed. The R-Endo® files, on the other hand, are designed specifically for ERT.

Drawings: C. RONCHINI.
SEM photos: Dr. M. GUIGAND - Equipe Biomatériaux en Site Osseux, UMRONRS6511, France.

“Unwound” instrument should not be used as it will likely result in the breakage of the instrument.
MICRO-MEGA® cannot be held liable for any breakage caused by abnormal use of the instrument.

Clinical Cases

Case 1

Canal treatment of a second lower molar (37). The debridement technique takes account of the flared form of the coronal half.



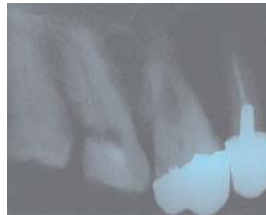
Pre-operative X-ray



Post-operative X-ray

Case 2

Pulpectomy and endodontic treatment of the upper right molar (17) that respect the initial canal axis perfectly.



Pre-operative X-ray



Post-operative X-ray

Case 3

Endodontic treatment of a second lower left molar. The curve in the apical portion of the mesial canal was negotiated without difficulty. The apical third was flared using a HERO Apical® .06 and .08 sequence.



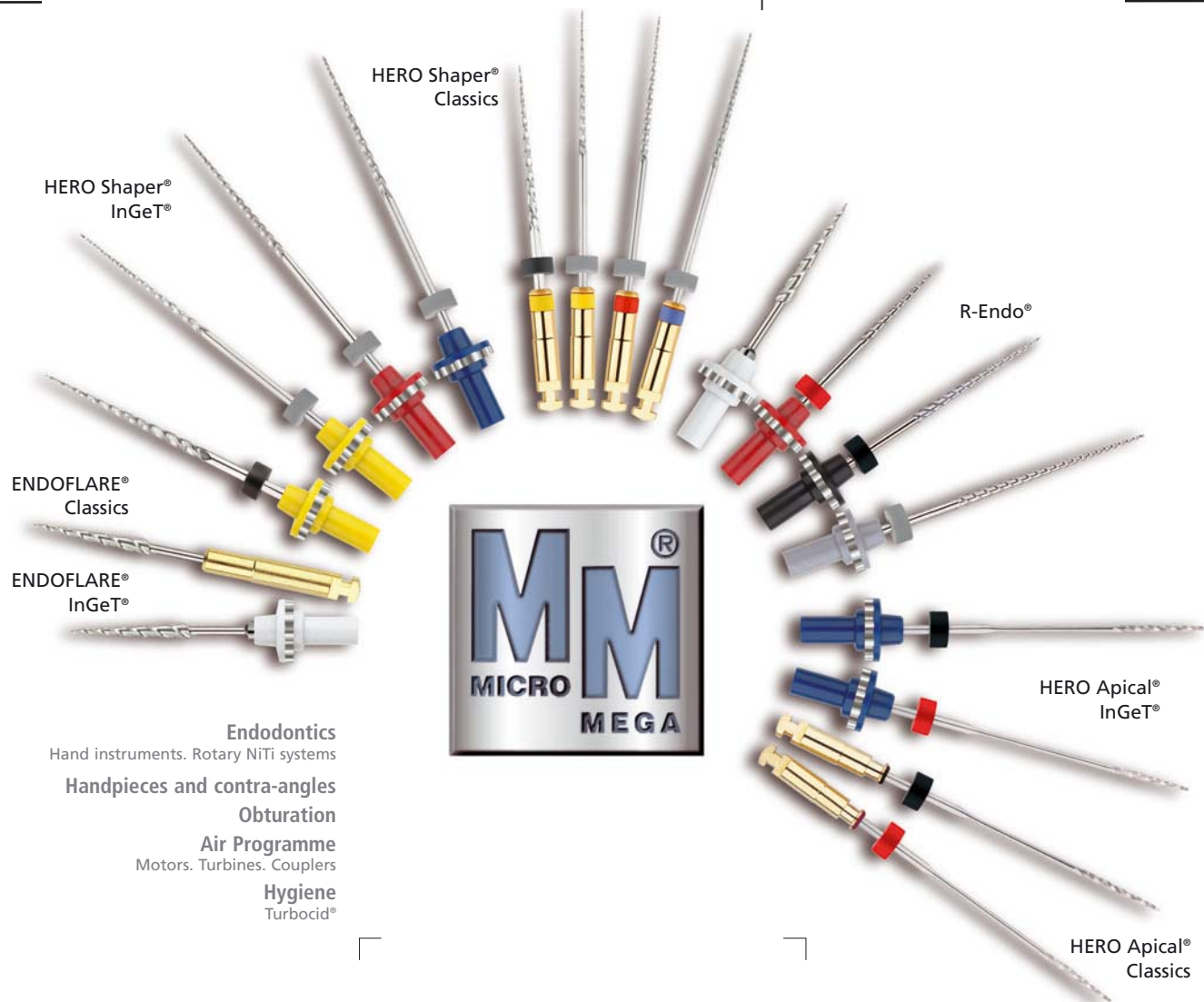
Pre-operative X-ray



Post-operative X-ray

Clinical cases: Prof. Paul CALAS.

MICRO-MEGA®'s products



Endodontics
Hand instruments. Rotary NiTi systems

Handpieces and contra-angles

Obturation

Air Programme

Motors. Turbines. Couplers

Hygiene

Turbocid®

MICRO-MEGA® France Distribution

5-12 rue du Tunnel

F - 25006 BESANÇON cedex

Tel.: +33 (0)3 81 54 42 36 - Fax: +33 (0)3 81 54 42 39

commercial@micro-mega.com

MICRO-MEGA® International Distribution

133 rue de Genève

CH - 1226 THÔNEX

Tel.: +41 (0)22 860 85 30 - Fax: +41 (0)22 860 85 31

mmid@micro-mega.com

www.micro-mega.com