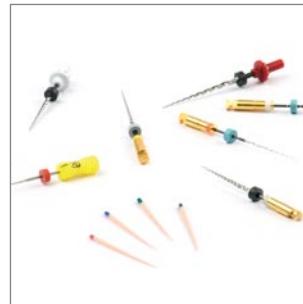


MM-ENDObook

Your Endo guide



Your Endo Specialist™



MM-ENDObook

- 04 Working length
- 07 Speed and torque
- 10 Endodontic treatment
- 22 Endodontic retreatment
- 25 Obturation



ISO 13485

ISO 13485: 2004 Certification

Distributed in over 125 countries, our products meet the requirements of European Directive 93/42/EEC and are CE marked.

Supporting you...

MICRO-MEGA®, a hundred-year-old French company, possesses know-how that is recognized worldwide in the fields of the design, manufacture and sale of dental surgical instruments (root canal instruments, obturation, hand instruments and instrument hygiene).

MICRO-MEGA®'s know-how in the design and construction of its own production machinery has helped to achieve a predominant position in the dental instrument world. Over the years, MICRO-MEGA® has become a leader and undisputed specialist in **endodontics**.

Its mission is to innovate in this field, setting the standards for general dental practitioners throughout the world and offering the dental market a unique range of technical and scientific expertise. Its motto "*Your Endo Specialist*" perfectly reflects this mission.

The *MM-ENDOBook*, dedicated to endodontics, will guide you through each stage of the treatment, retreatment and obturation.

“
Simple to use
Reliable
Time-saving
”

Working length

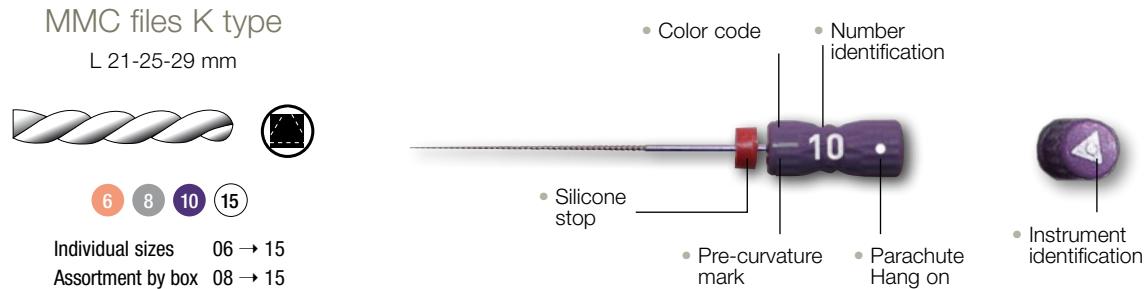
- The first exploration of the root canal is done with a pre-curved steel hand instrument, which provides information on canal anatomy. The importance of the mineralisation of the root canal lumen and the curve determine the difficulty of the treatment and therefore the choice of the sequence best suited to the clinical case.
- Apex locators have become indispensable tools in endodontics. They allow you to reliably determine working length and their results complement those obtained by pre-operative x-rays and the manual determination carried out with a K file (MMC n°10 L21 mm for example).



MMC files

How to effectively assess the root canal anatomy?

Passing a manual file coated with MM-EDTA Cream is the first indispensable step in any successful endodontic treatment. The use of MMC files offers extreme precision and simplicity.



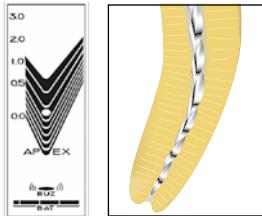
- Ergonomics of the handle: excellent file grip.
- Silicone stop for perfect adjustment to the working length.
- Radiopaque silicone stops.
- For use in combination with apex locators (Apex Pointer™ +).

Apex Pointer™ +

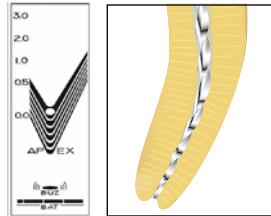
How to accurately measure the working length?

Apex Pointer™+ allows the apex to be located easily, quickly and as accurately as possible. Therefore, its reliability makes each stage of the treatment safer, whatever the root canal anatomy is.

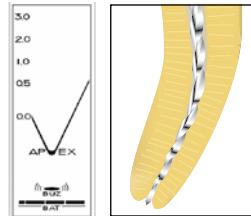
Pre-apical zone



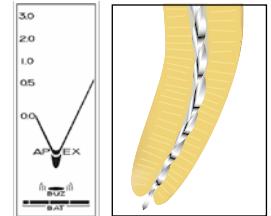
Apical constriction zone



Apical zone (foramen)



File beyond the apex



- 1** Carefully insert the file into the canal. The V-shaped scale lines indicate the location of the file tip with respect to the apical constriction and the apex.
- 2** The scale is divided into 5 segments between the apical constriction and the apex. Inserting the file deeper will increase beep sensitivity. One segment has a clear round spot towards the bottom of the scale. This means a reading of 0.5 and indicates the apical constriction.
- 3** When the apex is reached, the V-line marked with 0.0 starts to flash and an intermittent beep alerts the dentist.
- 4** When the apex is intruded, an extra indication below the word APEX starts to flash and the beep becomes continuous.



- Compact, lightweight and wireless.
- High precision: high single frequency.
- Precise measurement of root canal length: constant current amplitude.
- Accurate apex location in dry or humid environments.
- Rapid: no calibration.
- Easy to operate.



Speed and torque



- The use of Nickel-Titanium files requires total compliance with the recommended protocol and speed, in order to optimize the effectiveness of your instruments and limit the risk of breakage in the canal.



Endo Contra-angles



AX'S Endo®

The AX'S Endo® offers multiple advantages such as better visibility, manoeuvrability and reliability in each of your treatments.

■ 3 reduction ratios

- AX'S Endo® 04 (100:1)
- AX'S Endo® 06 (75:1)
- AX'S Endo® 08 (50:1)



- Slim neck design, ergonomic, balanced for maximum visibility.
- 20° angle, for 180° vision.
- Automatic locking of the root canal instrument.



InGeT®

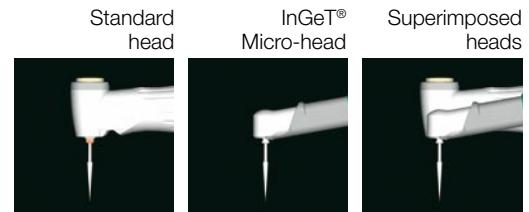
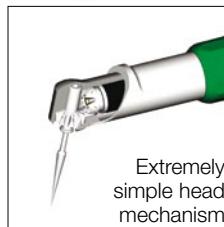
Its extremely simplified mechanism (the driving gear is integrated into the file) saves a maximum of space and offers perfect ergonomics.

■ 3 reduction ratios

- InGeT® 04 (100:1)
- InGeT® 06 (75:1)
- InGeT® 08 (50:1)



- Improved visibility of the operating field.
- Lightweight, perfect ergonomics, even easier to handle.
- Exceptional working comfort.



Endo Motors

ENDOAce®

Endo motor with torque and speed control + integrated apex locator: the ideal all-in-one!



- Torque control + automatic reverse rotation system = prevents file breakage!
- Latest generation integrated apex locator = avoids exceeding the limit!
- Contra-angle in high performance composite = unbeatable strength!



- Programmes are preset or can be customized for working sequences.
- Automatic system reversing the direction of rotation to free the instrument (Auto Reverse or Auto Stop).
- A separate apex locator is no longer needed.



Speed and torque



ENDOAce® Torque

New endo motor with torque and speed control: one single motor for your root canal preparations and obturations!

- Customizable light intensity for unsurpassed visibility.
- 8 fully customizable presets: 3 obturation and 5 endo settings.
- 3 reaction modes: Auto Stop, Auto Reverse, Auto Reverse Forward.
- Detachable motor holder: can be assembled on the left or on the right side of the unit.



- User friendly touch screen.
- ENDOAce® Torque micro motor: the shortest dental micro motor in the world.
- Motor speed range from 100 rpm to 40'000 rpm.





Endodontic treatment

- Reliable and practical tools to make every step of treatment easier by conforming to the biological requirements of disinfecting and shaping.
- Simple protocols for more efficiency.
- Saving time at every stage.

Scientific articles:

Revo-S™

"The development of new NiTi instruments, based on an asymmetry of the blades, has allowed to perform a simplified instrument sequence in order to answer to both the biological (efficient shaping and cleaning) and ergonomic (simplification and safety) imperatives which are crucial to perform initial endodontic treatments in general practice. The Revo-S™ sequence performs efficient root canal cleaning and shaping without altering the coronal section and enabling a hermetical canal obturation".

J.P. MALLET, F. DIEMER

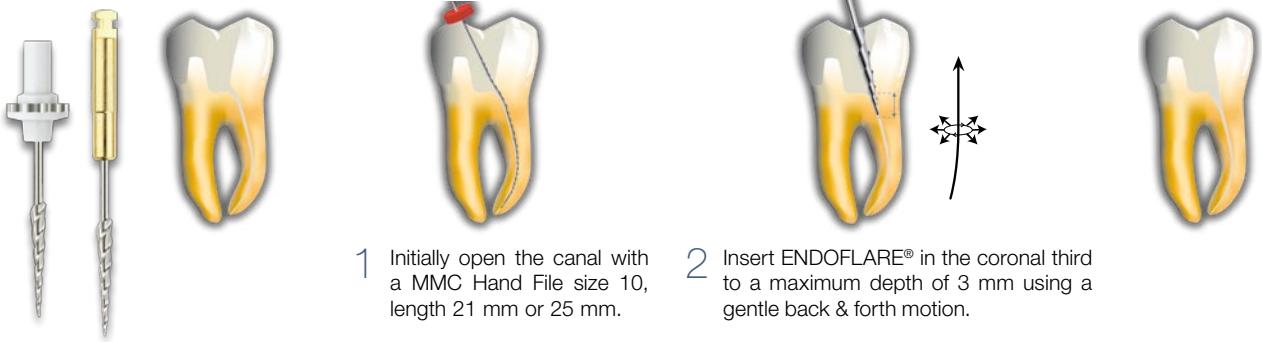
An instrument innovation for initial endodontic treatment: the Revo-S™ sequence.

Clinic - Vol. 29 - November 2008.

ENDOFLARE®

How to efficiently prepare canal entrances?

ENDOFLARE® removes coronal constraints, improves access to canal entrances and facilitates the insertion of preparation instruments.



1 Initially open the canal with a MMC Hand File size 10, length 21 mm or 25 mm.

2 Insert ENDOFLARE® in the coronal third to a maximum depth of 3 mm using a gentle back & forth motion.

3 Irrigate generously.

4 In complicated cases, press lightly against the chamber walls in order to selectively debride the area.

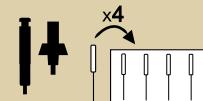
Speed of rotation: 300 - 600 rpm



- Wide taper (.12 n°25).
- Short: access and manoeuvrability facilitated.
- Inactive tip: respects canal anatomy.
- Active: cutting cross-section to widen the canal.
- Excellent debris evacuation: no plug formation.



Classics or InGeT®
.12 - n°25 - L 15 mm



How to prepare access for rotary instruments rapidly and in complete safety?

Glide path development is an essential but time-consuming step in endodontic treatment. G-Files™ are based on an innovative design to help the clinician safely save time in endodontic procedures. The superior cross-section of the G-Files™ combines efficiency and innovation. Along the length of the instrument, the G-File™ has cutting edges on three different radiuses leaving a large and efficient area for upward debris removal.

Used after hand files have measured working length, G-Files™ safely enlarge the glide path in preparation for RCT with rotary instrumentation system.



Only **2** instruments!

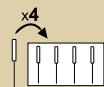


- Superior flexibility due to their small instrument diameters (n° 12 and n° 17) and their slight .03 taper.
- Non-working (safety) tip.
- Electro-polished to optimize their efficiency in apical progression while aiding in upward debris removal.
- Enhanced circulation of the irrigation solution beginning from the initial phase of treatment.
- Quickly and safely enlarge the canal passageway to the apex.



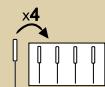
• Classics
or InGeT®

Pack of 4 assorted instruments

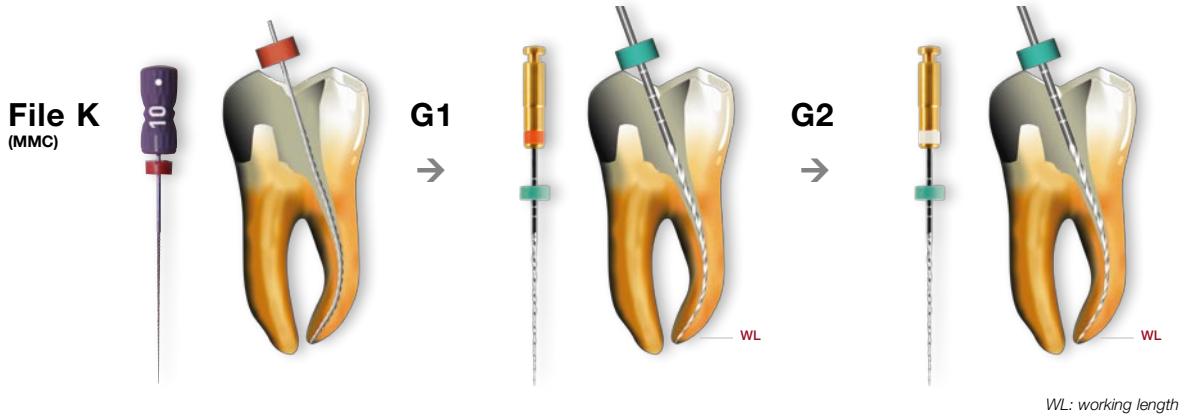


• G1 x 2 + G2 x 2
L 21, 25 or
29 mm

Pack of 4 identical instruments



Protocol for use



1 Determine the working length with a small diameter precurved stainless-steel instrument (MMC 08 and 10 files).

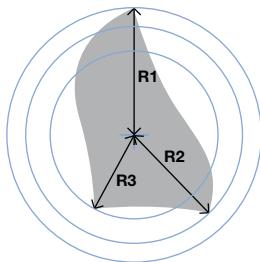
2 The rotating G1 instrument is introduced into the canal, progressing with a slow movement without any apical pressure until the working length has been reached.

3 After irrigation, the G2 instrument is used in the same way; then the last hand file is used again to check canal patency and confirm the working length.

Speed of rotation: 400 rpm – Max. torque: 1.2 N.cm

Note: It may be necessary to use ENDOFLARE® to allow easy direct access of the G-Files™ to the entrance of the canal.

Unique innovative cross-section



- The cross-section varies throughout the length of the instrument.
- The 3 cutting edges are on 3 different radiuses relative to the axis of the canal.
 - More space for better elimination of debris.
 - Excellent cutting action.

Non-working Tip



SEM view: Dr Franck Diemer, Toulouse, France.

- Preserves canal anatomy

NEW!

One Shape®

How to realize your endodontic treatment with one single instrument in continuous rotation?

Simplifying your endodontic procedures with complete safety and effectiveness is our primary concern.

MICRO-MEGA® now offers you One Shape®, the one and only NiTi instrument in continuous rotation for quality root canal preparations.

One Shape® allows for curved canal negotiation with an instrumental and easy dynamic. Its non-working (safety) tip ensures an effective apical progression avoiding obstructions which are often preceded by instrument separation.

One
Shape®

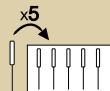


THE new asset in endodontic instruments. Simplicity and safety...



• Classics

Blister of 5 identical instruments



• .6 - n°25
L 21, 25
or 29 mm



- Quality root canal shaping with one single instrument with remarkable design.
- No need to buy an additional specific motor. You can use your traditional endo handpiece placed on your unit or any other endodontic motor with continuous rotation.
- Sterile and single use: time saving, facilitated handling for assistants and controls risks of infections.

1 single instrument

- Remarkable design.
- Rapid treatment.
- Simplification of the endodontic sequences.

Sterile

- Scored blister.
- Time saving.
- Facilitated handling for assistants.
- Controls risk of infections.



In continuous rotation

- An economic principle: no need to buy an additional specific motor.
- A dynamic and instrumental behaviour you may have previously experienced

Single use

- Minimal fatigue along the length of the file virtually eliminates the risk of separation.
- Simplified handling of instrument sequences.
- It is recommended to use the One Shape® instrument for the treatment of only one tooth*.



** Dispose of all instruments that show a sign of unwinding, wear or premature fatigue after the treatment of one or two root canals.*

The instrument with variable section*

- An original and innovative instrument design.
- A MICRO-MEGA® innovation: the instrument presents a variable cross-section along the blade.
- One Shape® principle: 3 different cross-section zones.

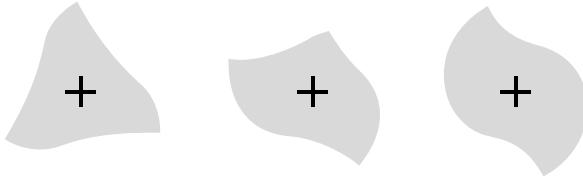
The first zone presents a variable 3-cutting-edge design.

The second (transition zone) has a cross-section that progressively changes from 3 to 2 cutting edges.

The last (coronal) is provided with 2 cutting edges.

* Patent Pending

- Examples of instrument cross-section evolution.



- Guided down the glide path by 3 cutting edges, One Shape®'s flexibility assures a perfect respect to the original canal path and curvature.
- One Shape®'s variation of cross-sections offers an optimal cutting action in 3 zones of the canal.
- The variable pitch of One Shape® reduces instrument screwing effects.
- ABC (Anti Breakage Control) is a safety bonus: the instrument will unwind to avoid separation.



The one...
and only

Advice and recommendations

Initial canal preparation

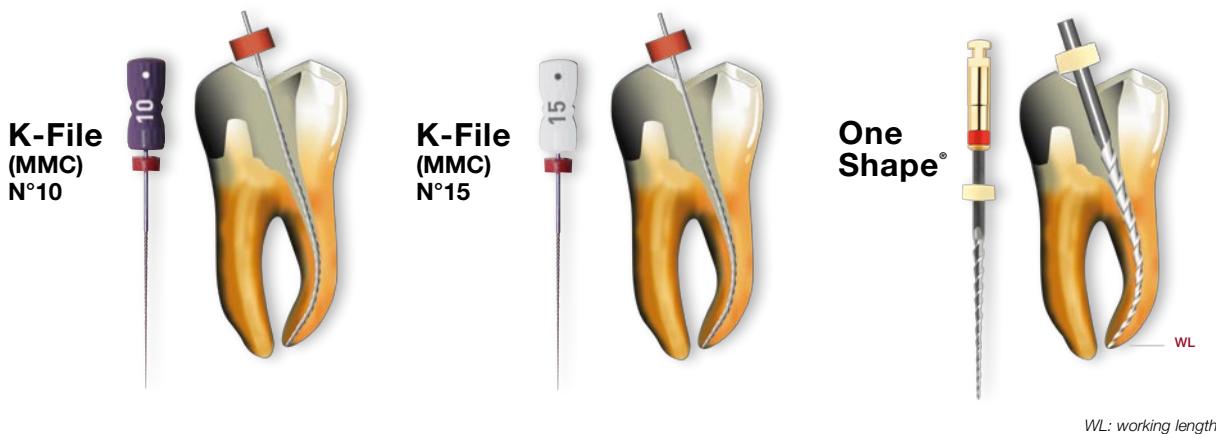
- Once the access cavity is reached (access directly to the canal orifices and suppression of overhangs), the working length is determined with a small diameter precurved stainless-steel instrument (MMC files 10-15), which provides information of the root canal anatomy along with preoperative radiographs and/or apex locator.
- If it is not possible to reach the apex with a 15 hand file (MMC 15), then use the G-Files™ (G1+G2) to quickly and easily establish the canal pathway to the apex.
- The removal of coronal constraints can be accomplished by the use of ENDOFLARE®.

Simple and efficient instrument dynamics

- Use a slight pecking motion until the working length has been achieved. To reduce resistance in tight canals, use a slightly longer stroke in a pecking motion to achieve additional upward debris removal. If significant resistance is encountered in difficult or curved canals, remove and clean the instrument, replace the irrigant in the canal, and achieve patency with a small hand file (MMC 10) before continuing the root canal treatment.
- If necessary, perform an upward circumferential filing.
- Check apical patency if necessary.
- Irrigate thoroughly with sodium hypochlorite.
- The use of MM-EDTA Cream (EDTA cream) is recommended.

Speed of rotation: 400 rpm

Protocol for use



How to simplify your endodontic treatment?

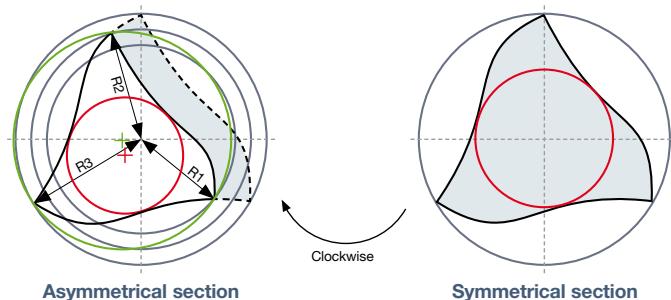
This new sequence with only 3 Nickel-Titanium instruments simplifies the initial endodontic treatment and optimizes the cleaning. The asymmetrical cross section of the Revo-S™ facilitates penetration by a “snake-like” movement and offers a root canal shaping adapted to the biological and ergonomic imperatives. This sequence has a cutting, debris elimination and cleaning cycle which optimizes the root canal cleaning by improving the upward removal of the generated dentine debris. It also offers the choice of the apical finishing (AS30, AS35 and AS40) best suited to the anatomical and ecological criteria of the canal.



- Enables a better root canal penetration due to a “snake-like” movement = better progression of the instrument toward the apical region of the root canal.
- Facilitates the elimination of debris upward the coronal thanks to the increased available volume for debris.
- Avoids the grooves to be obstructed and thus avoids the extrusion of debris beyond the instrument tip and apical foramen.
- Reduces the stress on the instrument thanks to the rippling movement of the file along the canal walls: no screwing effect, more flexibility, better ability to negotiate curves.

The instrument works in a cyclic way:

- 1) Cutting
- 2) Debris elimination
- 3) Cleaning



The 3 cutting edges are located to the canal axis on 3 different radiuses: R1, R2 and R3.

A customized treatment using 3 instruments

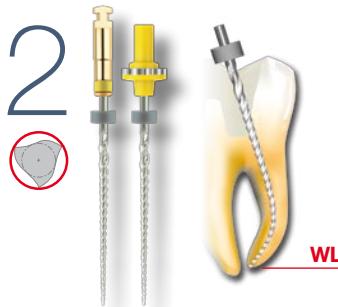
SC1

(Shaper® & Cleaner 1)
N°25 .06
L 21 mm



SC2

(Shaper® & Cleaner 2)
N°25 .04
L 21, 25 or 29 mm



SU

(Shaper® Universal)
N°25 .06
L 21, 25 or 29 mm



Speed of rotation: 250 - 400 rpm

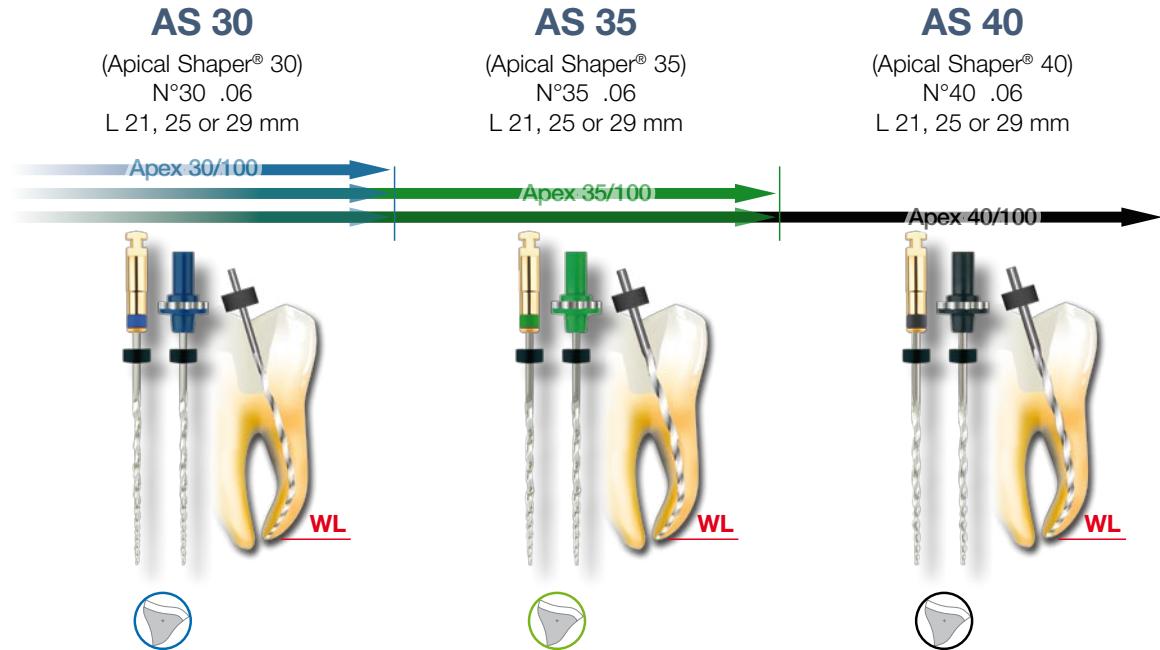
WL: working length



- Excellent cleaning.
- Adapted active length.
- The extended cutting part in the coronal region increases instrument flexibility.
- Facilitates the upward elimination of dentine debris.

How to realize an efficient apical finishing?

For a successful canal preparation, apical finishing is essential: MICRO-MEGA® offers an optional adapted solution with specific instruments: AS30, AS35 and AS40.



WL: working length



- Shaping down to the working length: more accurate finishing of the apical 1/3.
- Efficient disinfection: The irrigating solution penetrates to the apical 1/3.
- The extended helical machining up to the coronal region enables a continuous bending of the instrument.

Advice and recommendations

Initial penetration

- The first step consists of an initial penetration of the canal using a conventional stainless steel hand instrument (usually a K file N°10 – MMC n°10 L21 mm) which provides information about the canal anatomy complementary to that obtained by the pre-operative X-rays.
- The use of ENDOFLARE® is recommended (see p.11).
- The G-Files™ safely enlarge the glide path in preparation for RCT with rotary instrumentation system (see p.12).
- The instruments should be removed frequently from the canal and cleaned using a compress in order to eliminate the dentine debris.

Operative dynamics

- Revo-S™ instruments should be used with a rotation speed ranging between 250 and 400 rpm.
 - Use SC1 with slow and unique downward movement in a free progression and without pressure.
 - Use SC2 with a progressive 3 wave movement (up and down movement).
 - Use SU with a slow and unique downward movement in a free progression and without pressure. Then check apical patency and if necessary, perform an upward circumferential filing movement.
- The AS instruments should be used without apical pressure, after using the SU. Their penetration depth corresponds to the working length. This length is shortened in thin root canals or with a marked curvature. They are then used in a step back motion (AS at WL, AS35 at WL – 0.5 mm, AS40 at WL – 1 mm if necessary).

Irrigation

- The canal should be thoroughly irrigated using sodium hypochlorite (2.5% to 5%) between the use of each instrument. The use of a chelating colloid gel (MM-EDTA Cream recommended, see p. 37) is advised for instrument lubrication and dentine debris removal.



• Classics or InGeT®

Pack of 6 assorted instruments

- x6
- SC1 + SC2 + SU + AS30 + AS35 + AS40

Pack of 6 identical instruments

- x6
- SC1, SC2, SU, AS30, AS35 or AS40

	L 21 mm	L 21, 25 or 29 mm
	.06	.04 .06
N°25	SC1	SC2 SU
N°30		AS30
N°35		AS35
N°40		AS40

Pack of 3 assorted instruments

- x3
- SC1 + SC2 + SU, AS30 + AS35 + AS40



Endodontic retreatment

- Endodontic retreatment (ERT) is indicated following the failure of an initial endodontic treatment.

Scientific articles:

"Effectiveness, flexibility adapted to each canal zone, parietal cleaning of root canals, respect of the initial canal path, rapidity, operating comfort, simplicity and ergonomics, safety and finally asepsis are the major advantages of the R-Endo® concept, which allows endodontic retreatments to be carried out with a great deal of serenity."

J.P. MALLET, E. DEVEAUX

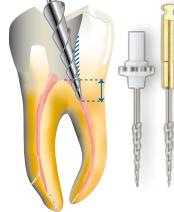
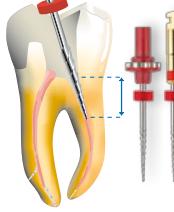
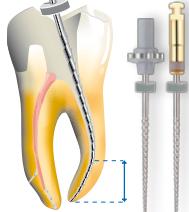
Nickel-Titanium and endodontic retreatment: a new concept for mechanised instrumentation.
Clinic 2004 - Vol. 25 - N°6 - Pages 353 - 363.

How to make a retreatment effectively with complete safety?

R-Endo® InGeT® or Classics, a single method for a simple protocol offering maximum safety.

Phase 1: Pre-operative analysis: 1 Pre-operative X-ray. 2 Placing of rubber dam. 3 Removal of coronal restorations and posts. 4 Access re-opening. 5 Visual and tactile analysis of filling material(s). 6 Solvent choice.

Phase 2: Operative sequence: a protocol in 5 main steps.

<p>1 Lime Rm N°25 .04</p> 	<p>2 Re N°25 .12</p> 	<p>3 R1 N°25 .08</p> 	<p>4 R2 N°25 .06</p> 	<p>5 R3 N°25 .04</p> 
<ul style="list-style-type: none"> ■ 1/4 turn with pressure directed towards apex. ■ Removal. 	<ul style="list-style-type: none"> ■ Canal penetration: 1 to 3 mm under pulp chamber floor without having to force the instrument. ■ Apical pressure control, stop as soon as instrument requires force to penetrate. ■ Circumferential filing. 	<ul style="list-style-type: none"> ■ Canal penetration through repeated limited pushing actions in apical direction (push and retain). ■ Preparation from the coronal third to the beginning of the middle third. 	<ul style="list-style-type: none"> ■ Canal penetration through repeated limited pushing actions in apical direction (push and retain). ■ Preparation from the middle third to the beginning of the apical third. Never pass the length reached with the MMC. 	<ul style="list-style-type: none"> ■ Canal penetration through repeated limited pushing actions in apical direction (push and retain). ■ Insert R3 to WL or near WL according to the canal anatomy.

Advice and recommendations

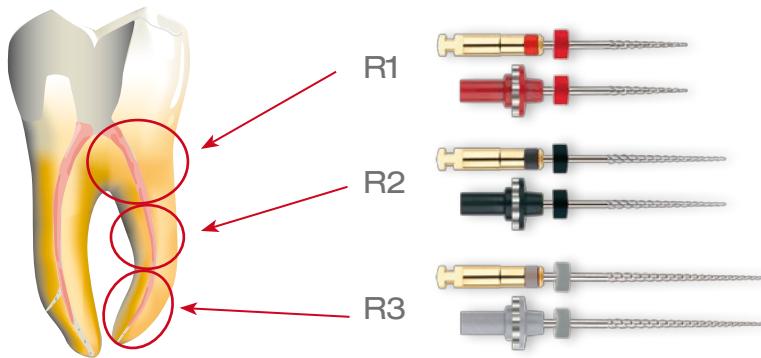
- Rotation speed: 300 to 400 rpm.
- Frequent solvent renewal.
- Use alternately solvent and NaOCl. The nearer you get to the apex use less solvent and more NaOCl.
- Check the working length as soon as possible.
- If possible check the apical patency.
- At the end of the preparation, ensure the complete removal of the debris from the previous filling using an X-ray.
- In curved canals:
 - Same precaution as for any kind of NiTi instrument must be observed to avoid false canal creation.
 - Introduction of a pre-curved hand file MMC n°10 is necessary prior to penetration with R-Endo® files.

R-Endo[®]

Why using R-Endo[®]?

This method will enable you to remove filling and shape the root canal using only 4 NiTi instruments. There is no need to use a complementary shaping method after the R-Endo[®] instruments.

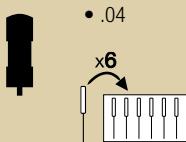
You access each level of the radicular zone progressively.



- Files specially designed for ERT.
- Rapid: only 4 NiTi instruments (Re, R1, R2, R3).
- Simple: a protocol that is easy to memorize.
- Safe: inactive tips.

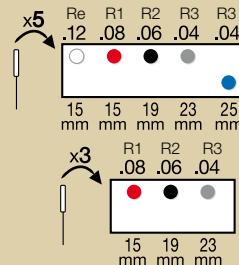


Pack of 6 Rm hand files



Introductory package

- Pack of 5 assorted R-Endo[®] InGeT[®]
- Pack of 3 assorted R-Endo[®] Classics



Pack of 6 identical R-Endo[®]

- InGeT[®]
- Classics



Obturation

- Obturation guarantees the three-dimensional sealing of canals and conditions the success of the endodontic treatment in the long term.
- Whether temporary or permanent, obturation is an important stage for which MICRO-MEGA® has developed reliable, practical tools that will make your job easier.

Scientific articles:

"Comparatively to similar techniques and materials, the modifications added to the HEROfill® are likely to improve its success, allowing a quick and simple three-dimensional obturation."

S. ZOUITEN, N. DOUKI ZBIDI, N. ZOKKAR, C. BACCOUCHE

HEROfill®: A third generation of Root Canal Filling.

Dental News - Vol. 12 - N°3.

MM-MTA™

Root canal repair cement

The introduction into the market of MTA (Mineral Trioxide Aggregate) in the 90s has been a veritable revolution that allows successful repair of iatrogenic accidents while reducing the associated pathological complications.

Currently, clinically approved MTA products are available within the dental marketplace. However, MTA traditionally has a long setting time and an often grainy consistency which makes placement more difficult.

MICRO-MEGA® now offers the “State-of-the-Art” MM-MTA™, an endodontic repair cement that has excellent physiochemical characteristics delivered in innovative packaging. MM-MTA™ incorporates a faster set time with a pasty consistency for easy handling and placement.



- Biocompatibility.
- Formation of a protective waterproof layer, resistant to bacterial infiltration.
- Excellent adhesion to the dentine.
- Optimal results, even in humid conditions.
- Radiopacity.

Intended uses

MM-MTA™ is used in the following cases:

- **Repair of root perforations.**
- **Root-end fillings (retro and apexification endodontic surgeries).**
- **Pulp capping.**
- **Repair of internal resorptions.**



MM-MTA™ Cap contains liquid and 0.3 gr of MM-MTA™ powder. Each capsule is wrapped in a hermetic aluminium pack.



Innovative characteristics

Thanks to its unique characteristics, MM-MTA™ offers indisputable advantages compared to other existing materials:

An adapted packaging:

- Consisting of capsules containing MM-MTA™ powder and liquid, automatic mixing is achieved quickly with a vibrating mixer. In addition, the resulting MM-MTA™ blend is extremely homogenous with transformation properties which are always optimal and reproducible.
- Each capsule contains the exact dosage of MM-MTA™ to avoid waste.

A homogenous consistency:

- MM-MTA™ packaging insures a consistently high-quality product mix for simple handling and easy placement within the root canal.

A reduced setting time (20 minutes):

- The addition of calcium carbonate (CaCO₃) considerably reduces the setting time and also allows filling in the same session.

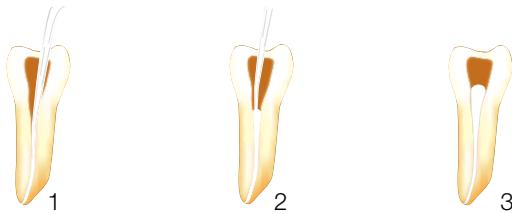
Simple, quick...

MM-Paste

How to temporarily obturate reliably and precisely?

MM-Paste for:

- Temporary antiseptic obturation of infected canals (acute or chronic infection).
- Temporary obturation between sessions.
- Temporary obturation of canals in the case of root fracture.



- After preparing the root canal, clean it and dry it. Fit a single-use nozzle on the syringe and introduce it into the canal (**1**). Press on the piston and completely fill the canal, withdrawing the nozzle from the latter gradually (**2** and **3**). Clean away the excess coronal paste using sterile cotton wool.



- Excellent antibacterial activity for canal antiseptics.
- Water-soluble for easy cleaning prior to final filling.
- Barium sulphate content, radiopaque.
- Syringe for quick and easy application.
- Flexible tips for precise and controlled access to root canals.
- Single-use tips prevent cross-contamination.

Pastinject®

How to perfectly coat the canal walls?

Pastinject® for perfect application of sealing cements, calcium hydroxide and paste. The helical shape of the instrument creates a translational movement, facilitates transport and guarantees the perfect application of the filling material onto the walls.

Pastinject®

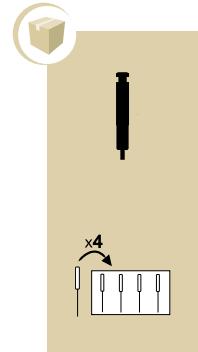
Plastic handle
L 21-25-29 mm



15 20 25 30 35 40

Individual Sizes 15 → 40
Assortment by box 25 → 40

• Plastic handle Classics type



- Its great flexibility allows it to perfectly follow the shape of the canal.
- Excellent resistance to breakage.
- Thanks to its rounded tip, there is no contact with the radicular canal walls.

How to obturate quickly and reliably?

The HEROfill® is an endodontics obturation system expanding on the principle of a solid plastic core coated with thermoplastic gutta percha. The enhancements found in the HEROfill® system add accuracy and dependability to the well documented apical seal that may be obtained with endodontic obturators.



- 1 Select the appropriate size HEROfill® obturator. Generally this will be the same size as the last file used at the apex of the canal.
- 2 Confirm the selected obturator size by inserting the matching HEROfill® Verifier into the canal to the working distance.
- 3 The chosen obturator is placed in one of the slots by its colour-coded handle. Activate the timer by pressing the ON icon.
- 4 While the obturator is heating, mix and place any heat resistant sealer (MM-Seal™ recommended). Using the HEROfill® Verifier, place a thin coating of sealer on the wall of the canal.
- 5 After the tone, remove the HEROfill® obturator. Without twisting the handle, immediately insert it into the canal to the working distance.
- 6 Allow the gutta percha to cool for 3-4 minutes. Confirming radiographs may be taken during this time.
- 7 Remove the handle by twisting it. Cut away excess plastic core with a small inverted cone bur and trim away the extra gutta percha.

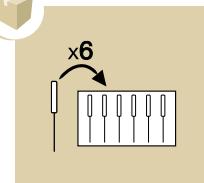
Obturators



Verifiers



- Detachable handle.
- Adjustable working length.
- Easy control owing to the HEROfill® Verifiers.
- Rapid heating with HEROfill® Oven.
- Easier post space preparation.



MM-GP Points

How to perfectly obturate radicular canals?

MM-GP Points are gutta percha points with .02, .04 and .06 tapers used to obturate root canals prepared with NiTi instruments.

Individual sizes 15 → 40
 Taper .02



Packs of 120 points. L29 mm

Individual sizes 15 → 45
 Taper .04



Packs of 60 points. L29 mm

Individual sizes 15 → 40
 Taper .06



Packs of 60 points. L29 mm



- Radiopaque.
- Optimal biocompatibility.
- Easy to place.
- High plasticity and very flexible to mould perfectly to canal walls without bending.
- Coloured top for quick and easy ISO number identification.
- Cadmium-free fabrication using high quality raw materials.
- Shape that adapts to cold, hot and thermo-mechanical condensation techniques.

Revo-S™ Obturation

| How to accomplish perfect obturation after Revo-S™ treatment?

Revo-S™ Paper Points

Improved efficiency owing to the Revo-S™ Paper Points! Their taper perfectly matches canals shaped with Revo-S™ files and thus guarantees quick, efficient and safe drying.

Four paper points, perfectly matching the Revo-S™ files.

Revo-S™ Paper Points SU
Revo-S™ Paper Points AS30
Revo-S™ Paper Points AS35
Revo-S™ Paper Points AS40

Packs of 60 points. L29 mm.



- Easy-to-identify owing to the same colour code as Revo-S™.
- For quick, efficient and economical drying: Less paper points are needed to dry the canals thanks to their adapted taper.
- Shaped for easy and reliable penetration to the apex.

Revo-S™ GP Points

The new Revo-S™ GP Points have been designed with specific tapers and diameters perfectly matching the Revo-S™ files.



For vertical condensation technique: a single reference regardless of the last preparation Revo-S™ file.

Revo-S™ GP Points 25 .06

Packs of 60 points. L29 mm.

For lateral, thermomechanical or combined condensation techniques: one specific reference for each Revo-S™ file.

Revo-S™ GP Points SU
Revo-S™ GP Points AS30
Revo-S™ GP Points AS35
Revo-S™ GP Points AS40

Packs of 60 points. L29 mm.



- Manufactured without cadmium using only the finest high quality material for optimum tissue tolerance.
- Flexible for perfect adjustment to all root canal anatomies without bending.
- Highest precision for all filling techniques: cold, warm or thermomechanical condensation technique.

Revo Spreaders

NiTi Spreaders

The Revo Spreaders have an excellent gutta percha plugging ability and are meant for lateral condensation obturation technique after use of the Revo-S™ files.

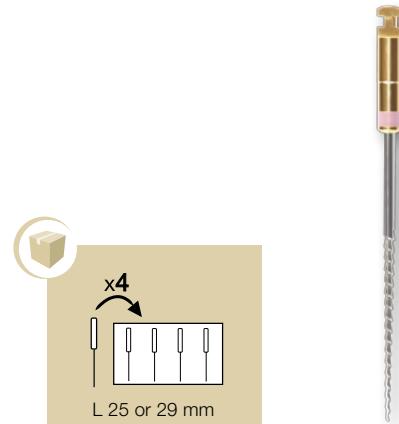


- High flexibility and excellent root canal curve negotiation owing to NiTi = more safety!
- .04 taper for optimal sliding of the spreader along the gutta percha cone.
- 90° point for optimum gutta percha plugging.

Revo Condensor

NiTi Thermocompactor

The Revo Condensor is the ideal instrument for thermomechanical condensation technique: The gutta percha is heat plastified through friction. The Revo Condensor's inverted H-type file profile guarantees an efficient transport of the gutta percha inside the root canal.



- More safety and flexibility thanks to NiTi.
- Simple to use: Only one instrument is used whatever the root canal preparation and apical finishing might be.
- Increased taper for more safety and less risk of breakage.

Revo-S™ Obturation

Lateral condensation technique



- 1 Select the master cone (Revo-S™ GP Point) corresponding to the last Revo-S™ file used and try it in a humid environment (2.6% NaOCl). Dry the canal using paper points (Revo-S™ Paper Points) and coat the canal walls with endodontic sealer MM-SEAL™.



- 2 Condense laterally using the biggest Revo Spreader (N°20, N°25 or N°30) allowing to reach WL -2 mm.



- 3 Then insert an accessory cone corresponding to the Revo Spreader until the level of the latter is reached and condense laterally. Repeat this operation (insertion and condensation of an accessory cone) until the endodontic space is completely filled.



- 4 Eliminate the excess Revo-S™ gutta percha in the pulp chamber with the heated part of a plugger for vertical condensation. Maintain the pressure on the remaining Revo-S™ gutta percha with the flat and cold part of the plugger.

Thermomechanical condensation technique



- 1 Select the master cone (Revo-S™ GP Point) corresponding to the last Revo-S™ file used and try it in a humid environment (2.6% NaOCl). Dry the canal using paper points (Revo-S™ Paper Points) and coat the canal walls with endodontic sealer MM-SEAL™.



- 1 Insert the master cone corresponding to the last Revo-S™ file used for canal preparation into the canal until WL or WL -0.5 mm is reached.
- 2 Insert the Revo Condensor into the root canal, set the motor speed at 10 000 - 15 000 rpm and slightly press against the master cone until its plastification.



- 3 Slowly pull the Revo Condensor out of the root canal using a slight up and down movement and performing light pressure on a canal wall.



- 4 Eliminate the excess Revo-S™ gutta percha in the pulp chamber with the heated part of a plugger for vertical condensation. Maintain the pressure on the remaining Revo-S™ gutta percha with the flat and cold part of the plugger.

Combined condensation technique



- 1 Select the master cone (Revo-S™ GP Point) corresponding to the last Revo-S™ file used and try it in a humid environment (2.6% NaOCl). Dry the canal using paper points (Revo-S™ Paper Points) and coat the canal walls with endodontic sealer MM-SEAL™.



- 2 Condense laterally using the biggest Revo Spreader (N°20, N°25 or N°30) allowing to reach WL - 2 mm.



- 3 Then insert an accessory cone corresponding to the Revo Spreader until the level of the latter is reached and condense laterally. Insert the Revo Condensor into the root canal, set the motor speed at 10 000 - 15 000 rpm and slightly press against the cones until their plastification. Slowly pull the Revo Condensor out of the root canal using a slight up and down movement and performing light pressure on a canal wall.



- 4 Eliminate the excess Revo-S™ gutta percha in the pulp chamber with the heated part of a plugger for vertical condensation. Maintain the pressure on the remaining Revo-S™ gutta percha with the flat and cold part of the plugger.

WL: working length



The MICRO-MEGA® +

HERO Shaper®

Root canal preparation

HERO Shaper® gradually eliminates interferences and flares the canal. The varying helical pitch and length of the cutting portion of the files provide them with an excellent combination of efficiency, flexibility and strength.



- Root canal shaping is facilitated. Limits the risks of breakage thanks to the use of Nickel-Titanium. With tapered canal preparation, the inactive tip respects canal anatomy.
- HERO Shaper® can be used in 3 sequences so as to cope with any curve of the root.
- HERO Shaper® guarantees simple, quick and efficient canal preparation.

HERO Apical®

Apical finishing

HERO Apical® can be used in the case of a canal infection in order to eliminate the smear layers in the apical third contaminated by bacteria. It enables you to effectively widen the canal taper to facilitate obturation and thus constitutes an indispensable tool for a complete and perfectly successful canal treatment.



- Perfect dentine excision thanks to its adapted cutting power.
- Reversed taper on the non-active part: no sudden bending behind the cutting part, great flexibility of use.
- Limits constraints thanks to the segmentation of the work: prepares only the apical third.

MM-Seal™

Root canal sealer

MM-Seal™ is a high quality, epoxy resin-based paste/paste sealer for permanent filling of root canals. Its outstanding chemical and physical properties provide excellent sealing of root canals. Eugenol-free, biocompatible and radio-opaque. It can be used for all gutta percha obturation techniques.



- Dual-syringe design for accurate dispensing.
- Homogeneous, free of air bubbles and easy to mix.
- Penetrates superbly into the smallest lateral canals.
- Low solubility in soft tissues.
- Can be worked for 35 minutes at 23°C.
- Sets in 45 minutes at 37°C, allowing stress-free placement of gutta percha cones.



MM-EDTA Cream

EDTA Cream

MM-EDTA Cream ensures effective cleaning and shaping of the root canal system. Its lubricating action smoothes file penetration and facilitates the removal of debris.



- Facilitates the cleaning and shaping of the root canal system.
- Lubricates.
- Facilitates instrument access and penetration.





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