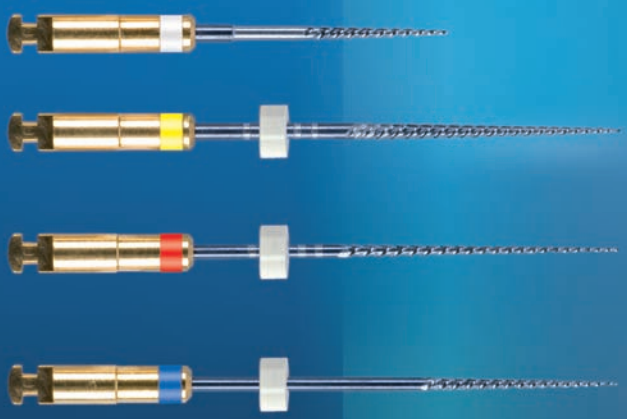
C·M·A®

CORONAL · MEDIAN · APICAL

SAFETY and SIMPLICITY



CMA:
a revolutionary system for your everyday practice

A reduced number of instruments.

4 nickel-titanium rotary endodontic instruments for a simplified sequence.

Only one sequence for root canal shaping and removal of filling material.

Refill of 6 NiTi rotary instruments			Taper	Tip ø	Ring	Total length
C	**C**oronal		10%	0.25 mm	White	17 mm
M	**M**edian		6%	0.25 mm	Yellow	21 mm 25 mm
A	**A**pical **1**		4%	0.20 mm	Red	21 mm 25 mm 29 mm
	Apical **2**		6%	0.20 mm	Blue	21 mm 25 mm 29 mm

Additional instruments.

Refill of 6 NiTi rotary instruments		Taper	Tip ø	Ring	Total length
Presequence		2%	0.17 mm	Mauve	21 mm 25 mm
Apical **3**		6%	0.30 mm	Green	21 mm 25 mm 29 mm
Apical **4**		7%	0.40 mm	Black	21 mm 25 mm 29 mm

Only one sequence for simple, curved and narrow canals.

Clinical case by Dr. Stéphane Simon

(1) Pre-op X-ray

(2) (3) Post-op X-ray

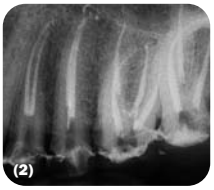
Clinical case by Prof. Roger Rebeiz

(1) Maxillary first molar: narrow canals; dentine heavily mineralised.

(2) Constant and regular conicity obtained using CMA instruments.

Clinical case by Dr. Roland Arsan

(1) Pre-op X-ray: maxillary premolars and molars.



(2) The same CMA sequence was used for all 11 canals. All root canal trajectories respected.

(3) Same teeth, seen from another angle.
Only 4 instruments were needed to shape all these canals.

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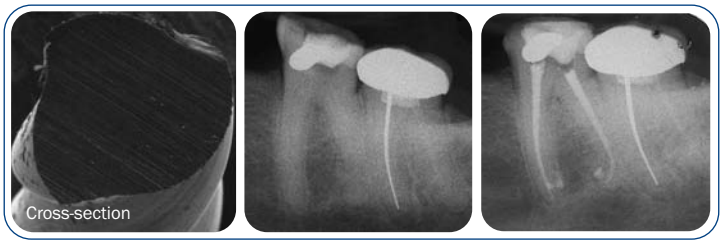
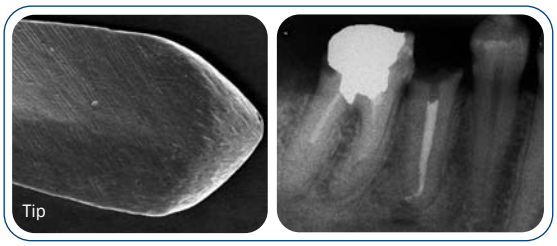
Safer, more secure and reliable rotary instruments.

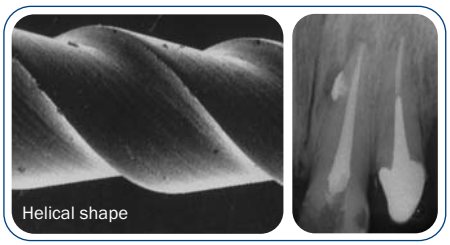
>> Cross-section of 3 cutting edges ensures **greater cutting efficiency.**



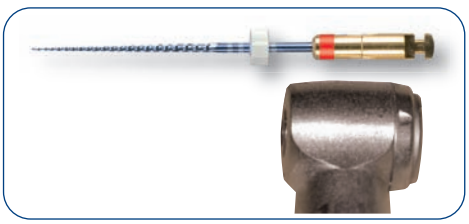
>> Non-cutting tip: **ensures the trajectory of the root canal is respected.**



>> Their shape facilitates the **removal of debris from the canal.**

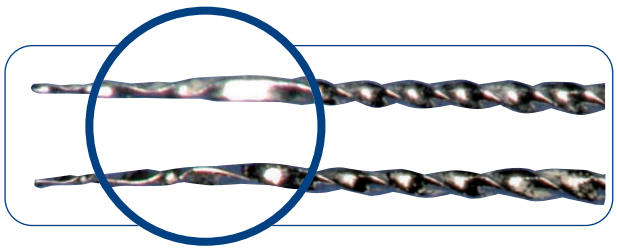


>> Short handle: **improves the access to molars**.



Guaranteed Safety

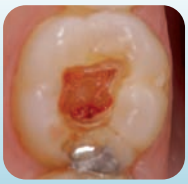
>> Stronger hard wearing NiTi alloy.
>> Deformation immediately visible to the naked eye.



Operating instructions
for root canal shaping

Pre-op X-ray.

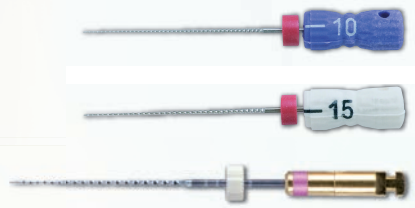
Opening of the pulp chamber.



Step 1

Exploring the coronal 2/3 of the canal and making it permeable:

Instruments used:
Manual N° 10 and 15 steel files and/or **Presequence.**
Used until they move freely in the canal.



Objective:
• Secure and prepare the coronal 2/3 of the canal for the use of CMA.

Step 2

Flaring the coronal and middle part of the canal:

Instruments used:
CORONAL
Flares out the coronal part of the canal.

MEDIAN
Enlarges the middle part of the canal.

Objective:
• Straighten and enlarge the root canal entries to provide continuity between the pulp chamber and the canals, so the tools can freely access the apical one-third.

Recommendations

- CMA instruments are recommended for use with **endo motors featuring an auto-reverse function**.
- Use NiTi in a portion of the canal which has been previously explored and prepared with a manual N° 15 file and/or Presequence.
- **Examine the instruments** before and after each use. Discard the tool if there is even the slightest deformation.
- **Time:** 5 to 10 seconds per rotary instruments.
- **Movement:** progression towards the apex by continuous short (1 to 3 mm) and rapid up-and-down strokes, finishing off with a sweeping movement up against the root canal walls.
- NiTi instruments **must never be forced**.
- **Clean** the instrument properly **after each removal** with a compress.
- The canal must be **copiously irrigated** with sodium hypochlorite each time the instrument has been inserted.
- Use of chelating gel is advised in order to ease work with the tools.
- If progress with **A1** is blocked, use the K 15 file and **M** again. If it is blocked when using **A2**, use the K 15 file and **A1** again.

Additional recommendations for retreatment

- NiTi instruments can remove fillings of materials which **can be softened with solvents. They cannot be used to remove fillings of insoluble resin paste.**
- As the tool moves further towards the apex, use less solvent and irrigate more liberally.

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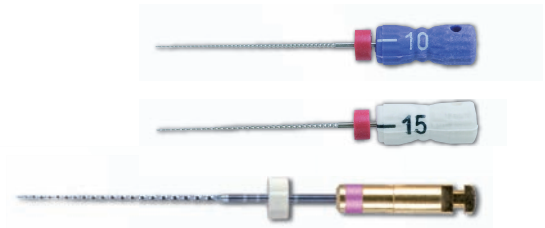
Step 3

Determining the working length:

Instruments used:
Manual steel files N° 10 and 15, and/or **Presequence.**
Used until they move freely in the canal.



Objectives:
- Determining the working length.
- Preparing for the nickel-titanium rotary instruments to pass safely all the way to the apical one-third.

After the use of the **C** and the **M**, interference in the cervical area and coronal curves is eliminated, which further frees the way to the apical one-third.

Step 4

Enlarging the apical portion of the canal:

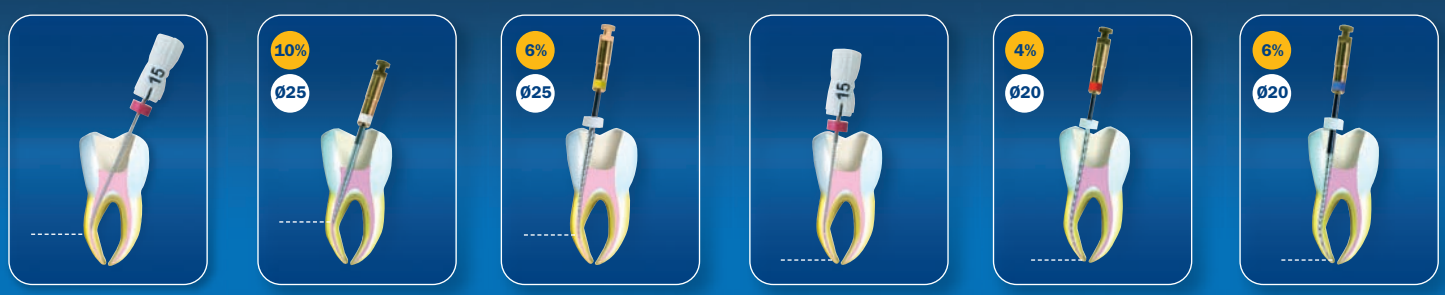
Instruments used:
APICAL 1 is used on the whole length of the root canal, followed by **APICAL 2.**

Objectives:
- Preparing the apical portion.
- Making a space where the irrigation solutions can collect.
- Providing the apical taper which will give the best obturation.
- Keeping apical diameter small.

Prof. Roger Rebeiz

(1) Gutta points in place.
(2) (3) Root canal obturation seen from different angles.

Treatment



- Exploring
- Coronal flaring
- Enlarging the middle part
- Working length
- Apical preparation
- Finishing before filling

Speed: 300 to 400 rpm – **Torque:** 1.3 to 2.3 N/cm

Operating instructions
for retreatment

Preoperative X-ray

Access cavity.
This must provide a clear view of the root canal entries and adequate access.

- Cleaning out all traces of filling material.

- Use of an ultrasonic scaler is recommended.

- Application of an appropriate solvent in the pulp chamber.

Coronal Step

Removal of filling material and flaring of the coronal portion of the canal:

- **Manual penetration** (e.g. using a N° 10 steel file shortened by a few mm), to pierce the filling material and create a 2-3 mm channel.
- **Use of CORONAL** to widen the canal entries and remove filling from 2-3 mm with a withdrawal movement, pressing against the wall(s).
- **Irrigation** and solvent renewal.
- **Manual penetration** using a N° 15 steel file going a few millimetres deeper.
- **Use of MEDIAN** which works deeper than the CORONAL.
  This tool works using traction.
- **Irrigation** and solvent renewal.

Apical Step

Preparation and filling removal the apical portion of the canal:

- **A pre-curved manual N° 15 file** is used to explore this portion of the canal.
  If feasable, the length of the canal may be measured at this stage.
- **Copious irrigation**.
- **APICAL 1** is used on the whole length of the root canal that has been made accessible using the N° 15 file.
- **Copious irrigation.**
- **APICAL 2** is used to remove the filling material and clear the canal.
- **Check passage** to the apex using a N° 10 K file just beyond the extent of the work.

Same instruments used for the removal of a root canal filling and for shaping.

Clinical case by Prof. Roger Rebeiz

Clinical case by Dr. Roland Arsan

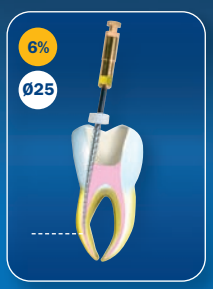
(1) Pre-op X-ray
(2) Post-op X-ray

Retreatment

CORONAL

- Flaring and removal of filling material

MEDIAN



- Flaring the middle part

APICAL 1

- Removal of filling material and apical preparation

APICAL 2

- Flaring and finishing

Speed: 400 to 600 rpm for C and M - 300 to 400 rpm for A1 and A2 – **Torque:** 3 N/cm for C and M - 1.3 to 2.3 N/cm for A1 and A2

Additional instruments and accessories

PRESEQUENCE

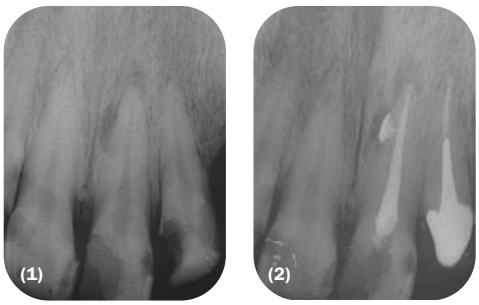
- **PRESEQUENCE** is used to explore the root canal or to determine the working length.
- The use of PRESEQUENCE improves the root canal vacuity.

Dr. Roland Arsan

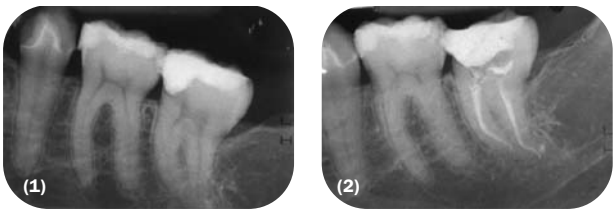
(1) PRESEQUENCE instrument in place
(2) Root canal obturation

APICAL 3 and APICAL 4

- **APICAL 3** is used after APICAL 2 in medium and large root canals, or in the step-back technique.
- **APICAL 4** is used after APICAL 3 in large root canals, or in the step-back technique.



(1) Pre-op X-ray
(2) Post-op X-ray (Use of A3 and A4)

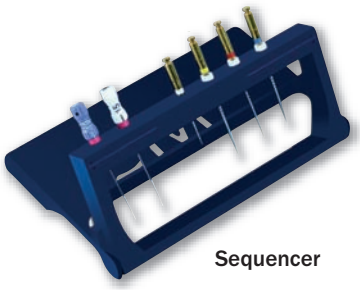


Prof. Roger Rebeiz

(1) Pre-op X-ray
(2) PRESEQUENCE allows you to reach the apex.
Double curvature treated with APICAL 3 with step-back technique.

Paper Points

Gutta Percha Points



Sequencer

Endo-Clean Discs

Endo-Clean Holder

CMA®

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4 instruments, only one sequence!

Product	Content
CMA NiTi **START KIT A** Length 25 mm	• **4 NITI instruments:** 1 **C**ORONAL, 1 **M**EDIAN, 1 **A**PICAL **1**, 1 **A**PICAL **2** • **2 manual steel files** n° 10 & n° 15
CMA NiTi **START KIT B** Length 21 mm	• **4 NITI instruments:** 1 **C**ORONAL, 1 **M**EDIAN, 1 **A**PICAL **1**, 1 **A**PICAL **2** • **2 manual steel files** n° 10 & n° 15
CMA NiTi **START KIT C** Length 29 mm	• **4 NITI instruments:** 1 **C**ORONAL, 1 **M**EDIAN, 1 **A**PICAL **1**, 1 **A**PICAL **2** • **2 manual steel files** n° 10 & n° 15

Refill of 6 NiTi rotary instruments			Taper	Tip ø	Ring	Total length
C	**C**oronal		10%	0.25 mm	White	17 mm
M	**M**edian		6%	0.25 mm	Yellow	21 mm 25 mm
A	**A**pical **1**		4%	0.20 mm	Red	21 mm 25 mm 29 mm
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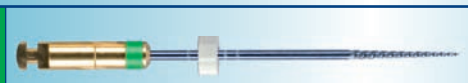
Refill of 6 NiTi rotary instruments		Taper	Tip ø	Ring	Total length
Presequence		2%	0.17 mm	Mauve	21 mm 25 mm
Apical **3**		6%	0.30 mm	Green	21 mm 25 mm 29 mm
Apical **4**		7%	0.40 mm	Black	21 mm 25 mm 29 mm

Instruments developed by Prof. Roger Rebeiz and Dr. Roland Arsan.
Illustrations and comments by Prof. Youssef Haikel.

CE 0120
CMA SYSTEM is manufactured according to European Directives 93/42/CEE and 2007/47/CE.
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www.endo-cma.com