FKG

swiss endo

2013 - 2014

# Catalogue

# ► Foreword

Dear customers,

FKG Dentaire SA continues its strategy of innovation, developing instruments based on your expectations, you dentists and endodontists. Our engineers are constantly in tune with dental practitioners, marketing products that make your work easier whilst increasing patient comfort.

This is why the Rooter motor was launched, a little high-tech gem that allows ease of treatment even in complex situations. Among other features, it has ten programmable working memories, unequalled freedom of use due to battery operation and a powerful LED to illuminate the working area, making the Rooter undoubtedly the champion among micromotors for endodontics.

FKG is also happy to announce the gradual introduction of its Race instruments packed in nonsterile blisters and in a sterile version from mid-2013.

In its first part, the 2013 catalogue presents each family of FKG products, with their special features and advantages and the best way of using them. In the appendix, you will find an exhaustive list of the products with their reference number, availability and their different options. The specialists at FKG Dentaire are at your disposal at any time to provide any additional information you might need.

I am looking forward to including you among FKG's loyal customers and to providing you with the effective tools that will allow you to lavish your cares in the best possible conditions and in your concern for the well-being of your patients.

Best regards,

Thierry Rouiller
**CEO**

# ► **FKG Dentaire,**
## an innovative company

FKG Dentaire SA, a Swiss company founded in 1931, is in the forefront of the development, manufacture and distribution of products for dentists, endodontists and laboratories. With its high-precision focus, FKG is naturally at home in the heart of the “Watch Valley”, the land of microtechnology and cradle of watch-making.

FKG Dentaire undertook a new expansion in 1994 when Jean-Claude Rouiller took over the company. As a visionary CEO, he defined a strategy focused on innovative products and on the design of machines specifically dedicated to the world of dentistry. In parallel with this, he broadened the distribution network to more than 80 countries worldwide. FKG Dentaire is certified according to international regulatory standards and requirements.

FKG Dentaire’s dynamism, spirit of innovation and quality of its products were rewarded in 2012 by the Swiss Venture Club, which awarded it the “Western Switzerland company of the year 2012”.

# A. **Endodontics**
## What is endodontics?

Endodontics is the branch of dentistry that treats diseases of the endodontium, the interior part of the tooth. Its main aim is to save natural teeth so that they keep all their masticatory functions and appearance of a healthy tooth. To remove all infected tissues and all bacteria, chemical and mechanical treatment of the canal system is required, and this is where FKG stands out with its range of instruments.

Root treatment takes place in four stages: opening and accessing the canals, glide path, preparation and root filling. Retreatment may also be necessary if a previous treatment has to be corrected or improved. We will review these different stages below, while presenting the solutions offered by FKG Dentaire.

# 01

# Motor

### 1.1 Rooter

Rooter, the new reference when it comes to high-quality motors, developed by FKG, will revolutionise endodontics. The motor offers an impressive range of technical innovations, all designed to enable work in the most comfortable of conditions even during complex operations.

- Enhanced visibility due to its white LED.
- Wide range of speeds: 250-1200 rpm.
- Autoreverse disengage mode.
- 10 programmable torque/speed memories.
- Thoughtfully designed ergonomics and lightness.


Rooster
FKG


The motor offers an impressive range of technical innovations, all designed to enable work in the most comfortable conditions - even during complex operations.

**“Rooter ensures an optimal, efficient and safe root treatment.”**

Whether you’re working Crown-Down or Single Length, Rooter ensures an optimal, efficient and safe root treatment, thanks to its powerful white LED focused on the work zone, as well as its exceptional handling. Its ergonomic design, with a small head contra-angle and giving the possibility to work through 360° in 5 positions, helps make your work less tiring.

Cordless, Rooter gives you freedom of movement, while its Lithium-Ion battery guarantees a stable rotation speed and allows you to treat some 30 patients before recharging.
The motor offers a vast range of speeds, from 250 to 1200 rpm, and its torque can be set precisely to 9 settings from 0.5 to 3.5 Ncm.

In order to lighten your work, Rooter allows you to preset 10 different torque/speed programmes in its internal memory. 3 memory locations are pre-programmed into the Rooter in our factory - namely the iRace and BioRace sequences, as well as D-Race instruments.

FKG kept a tight focus on safety during product development. Rooter automatically activates reverse rotation in case of blocking or in case the file goes beyond the programmed torque. In this case,

the file is stopped, and starts turning gently in the opposite direction at up to 100 rpm.

- Optional: oscillating contra-angle with an amplitude of 80° (40°/40°).


| | Rotation speed rpm | Torque in Ncm | Instruments or sequence |
|---|---|---|---|
| **Programm 1** | **600** | **1.5** | **iRace - D-Race DR2** |
| **Programm 2** | **600** | **1.0** | **BioRace** |
| **Programm 3** | **1000** | **1.0** | **D-Race DR1** |

All the components, motor, contra-angle, LED, battery pack, charger and transformer, are available separately.

# 02

## Opening and accessing the canals

The opening stage of the tooth is paramount and this procedure should be minimally invasive to spare dental tissue and to avoid weaken the crown.
The occlusal part must be hollowed out and, working progressively downward, the entire pulp tissue must be removed to clear entrance to the canals.
Once the straight line access is free, you will find all the necessary instruments in the FKG range to carry out root canal treatment.

## 2.1 F-Search

After the pulp chamber has been opened, the steel F-Search file is used to locate and clear the entrance to the canals.

2.1.1 F-Search. Rigid (ISO 20, taper0.05), the file is endowed with a cutting tip.

## 2.2 Gates und Peeso

The Gates and Peeso instruments are reamers used to widen and straighten the coronary part of the canals allowing better access for shaping instruments. Their use is strictly limited to the straight portion of the canals.

- The risk of perforation is significant if they are used in a curved canal or when cutting laterally.

2.2.1 Gates. The Gates instruments are oval shaped, with a guiding rounded safety tip and sharp cutting edges.

- Recommended speed 1200 rpm.

2.2.2 Ultrashort Gates XS . Thanks to their compact size, the ultra-short Gates XS instruments allow better access to posterior teeth. Their short handle (10 mm) is particularly well adapted to small headed contra-angles.

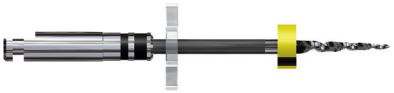
- Recommended speed 1200 rpm.

2.2.3 Peeso. With parallel cutting edges and a guiding rounded safety tip, the Peeso reamers are more rigid and aggressive than the Gates.

- Recommended speed 1200 rpm.

### ® 2.3 PreRace

The PreRace files ensure the same operation as the Gates and Peeso but more safely thanks to their anti-screwing in design, rounded safety tip and larger taper.



2.3.1 PreRace. Available in Steel or NiTi, the PreRace files allow a side to side milling motion without being too invasive or risking perforation. They are used in the coronary and straight part of the canal to remove interferances and to facilitate access to the canal.

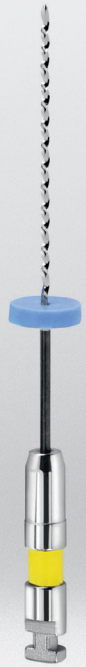
Recommended speed 600 rpm.

# 03

## Glide Path

After opening the cavity access, localising and widening the canal entrance, the canal can be penetrated with Steel or NiTi, manual or rotary files to allow probing and debridement of the canal.

- To determine and confirm the working length (WL), use x-rays and an apex locator.

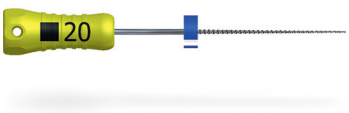


### 3.1 Hand files

In Steel or NiTi, the standard ISO sizes 6 to 40 in hand endodontic files have a rounded safety tip which is an exclusive FKG feature and also have an ergonomic handle, the SafetymemoGrip (SMG). Thanks to its larger rear diameter, the ergonomic handle offers a better grip. Situated on the end of the handle, there is an 8 segmented “use” indicator. After each treatment, a segment is scratched thus preserving information concerning the number of cycles of use and sterilisation. When all segments are scratched the instrument is discarded.

The hand files are also available with the Ergoflex handle. Its particular ergonomics, rounded section followed by a flat section, facilitate gripping when filing and prevent rotation above 180°.

- Stainless steel hand files, ISO 6,8 and 10 are for single use only and are marked ②



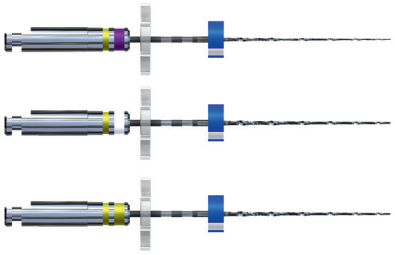

3.1.1 K (Kerr) files. K-Files are particularly well adapted for probing and permeabilization during canal preparation. In Stainless Steel or NiTi, K-Files are more rigid instruments than reamers, therefore more effective for penetration.


3.1.2 H (Hedström) files. Sharp edged, H-Files are used for probing, permeabilization or extraction of debris. Made of Stainless Steel or NiTi, these files can only be used in traction because of their helical profile. Consequently, their use is essentially for widening after passage of the K-File of the same number and for evacuating created debris and organic tissue.


3.1.3 Reamers. Made of Stainless Steel or NiTi, the reamers instruments are used for probing and permeabilization during filing and for removal of organic and mineral waste during final phases of preparation.

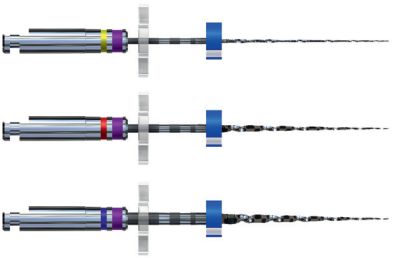
### 3.2 Rotary NiTi instruments for mechanised scouting

NiTi rotary instruments allow a quicker and more reliable passage preparation than hand instruments. Greater respect of the anatomy of the middle and apical thirds is observed without transport or formation of a stop. Due to their slight taper and extreme flexibility, NiTi rotary instruments follow perfectly the anatomy of the canal and are used without pressure up to the working length (WL), allowing better shaping of the canal.



® 3.2.1 ScoutRace. Used for the mechanised scouting of high curvature or S-shaped canals, ScoutRace is a sequence of 3 Race instruments with a taper of .02 and ISO diameters 10, 15 and 20. First passage instruments, these are used after the working length (WL) has been determined with hand K-Files or an apex locator. Root canal preparation is completed using iRace or BioRace sequences.

Recommended speed 800 rpm (minimum speed 600 rpm).



® 3.2.2 Race ISO 10. 3 instruments make up the Race ISO 10 range, all with a size of ISO 10 and with .02, .04 and .06 taper. They are intended for reaching the WL when hand ISO 6 or 8 K-Files can no-longer advance in calcified or very narrow canals. Root canal preparation is completed using iRace ou BioRace sequences.

Recommended speed 800 rpm (minimum speed 600 rpm).

3.2.3 S-Apex. S-Apex is a NiTi rotary instrument with inverted taper, an ideal addition to every Endo sequence, ensuring greater safety in high curvature, narrow or sclerosed canals. If the breaking limit is exceeded, S-Apex, because of its inverted taper (ISO diameter D1 > D2) breaks or bends at its safety point, that is, 16mm from the tip. The broken part of the file can easily be removed from the canal with tweezers thanks to the exclusive anti-screwing in design which prevents any blockage or permanent fixation.

It facilitates penetration of irrigant and disinfectant solutions up to the apex, even in curved and narrow canals. Finally, it creates an “apical stop”, permitting effective and reliable obturation.

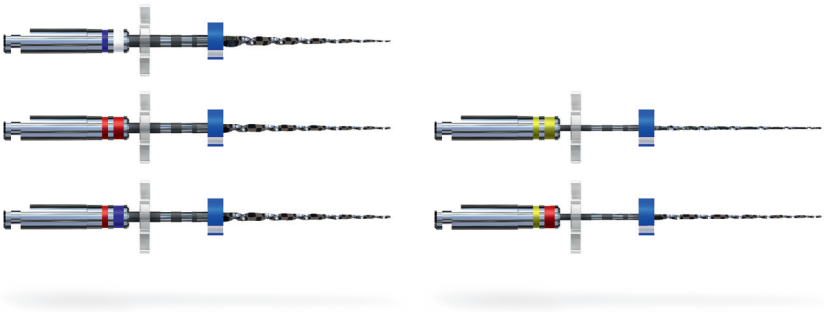
Ⓟ
- S-Apex instruments are used after access preparation with PreRace instruments.
- Pass the first S-Apex instrument ISO 15 as far as the apex, then successively the following sizes until the desired size for the final preparation of the apex is reached.
- Canal preparation is completed using iRace or BioRace sequences.

- The size of the first shaping instrument should be smaller than that of the last S-Apex used.
- Recommended speed 800 rpm for sizes ISO 15 to 40 and 600 rpm for sizes ISO 50 to 80.
- Available sizes, see at the end of the catalogue.

# 04

## Root canal preparation and retreatment

Canal shaping is achieved by removing the maximum amount of organic and mineral substance. It should allow irrigation solutions to reach the apical part of the canal so as to remove micro-organisms and pulp debris. This should also favour the obturation and watertight sealing of the root canal.



## ® 4.1 iRace sequence

Due to their exclusive characteristics, only three iRace NiTi rotary instruments are needed to treat the majority of cases (straight, slightly curved or wide canals). The iRace sequence allows preparation up to a diameter of ISO 30/.04. Easy to put into practise and use, significant time is spared.

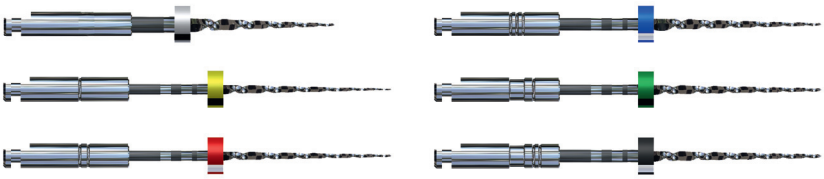
Ⓟ **Follow this procedure after scouting.**

1. Introduce R1 rotating and progress up to the WL. However, if R1 cannot achieve the WL, do not force further but proceed to step 1 of the iRace Plus procedure.
2. Continue working with R2 up to the WL.
3. Finish with R3 up to the WL.

Additional set iRace Plus. In addition to the basic sequence, two highly flexible instruments (with taper of .02) allow treatment of more difficult cases (highly curved, narrow or calcified canals).

Ⓟ
1. Use R1a up to the WL; continue with R1b up to the WL.
2. Once WL is reached, resume step 2 of the iRace procedure.

With the Rooter motor, select memory no. 1 for the iRace sequence.

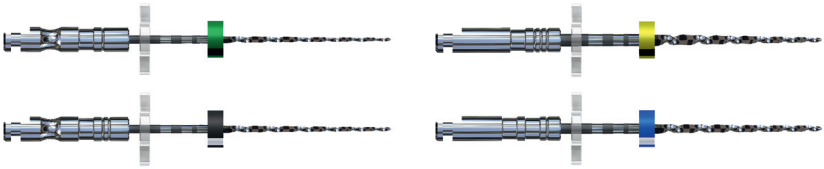


## ® 4.2 BioRace sequence

BioRace Basic Set is an extremely reliable sequence of 6 instruments, completed by the BioRace Extended Set of 2 instruments for cases involving extreme curvature and 2 for wide canals. In the majority of cases, it has been found that, to achieve adequate elimination of bacteria from the root canal, the apical third of the canal should be treated with the minimum given sizes, ISO 35 or 40. The BioRace sequence has been specially designed to achieve the required apical size without need for additional steps or files. Using the BioRace system, the biological aim of the root canal treatment is attained without compromising efficiency.

### Ⓟ After glide path

- Use BR0 – only 4 gentle back-forth movements, clean the file.
- Repeat until the coronal part is prepared to approximately 4-6 mm. Irrigate following use of the BR0.
- Recapitulate with an ISO 15 SSt file to the WL.
- Fill the canal and pulp chamber with the irrigant solution.
- Use the BR1 with 4 gentle back and forth movements. If the file does not reach the WL, clean the instrument and repeat until the WL is reached. Use BR2 and BR3 as described for the BR1.
- **DO NOT USE** the BR3 up to WL in highly curved canals or if resistance is felt. For this case, proceed to point 1 of the procedure BioRace Extended set.
- Use BR4 and BR5 as explained for the BR1. In the majority of cases, final apical preparation is achieved.



In addition, BioRace Extended Set includes 2 instruments for canals with severe curvature and 2 for large canals:

Ⓟ **1. Canals with severe apical curvature**

- Use successively BR4C and BR5C files intended for final apical preparation. If the BR4C does not achieve the WL with the 4 gentle back and forth movements, do not force the instrument further. Withdraw it, irrigate the canal, and then restart the procedure. Once WL is reached, pass on to BR5C.

For particularly complicated curves, use of additional FKG instruments (e.g. S-Apex, Scout-Race or hand files) is recommended.

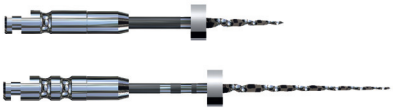
Ⓟ **2. Large canals**

- Use the two additional files BR6 and BR7 of the BioRace Extended Set in the same manner as explained for the BR1.

With the Rooter motor, select memory no. 2 for the BioRace sequence.

## ® 4.3 Retreatment.

In some circumstances, the canal must be retreated. Thus, as much as possible of the root filling material must be removed before beginning the retreatment itself.



4.3.1 D-Race. D-Race instruments are used to remove most of the old root filling material from the canals such as gutta-percha, obturators or resin-based material.

The D-Race set consists of two NiTi files – DR1 and DR2. The first instrument, DR1, has an active tip to allow engagement of the root filling material and is used in the first millimetres of the coronal and straight part of the canal. Once the access is cleared with the DR1, the second instrument, DR2, is used to reach WL. As this instrument is highly stressed, it is intended for single use. The final shape is obtained with the iRace or BioRace sequences.

**General information prior to removal of root filling material:**

- Take two x-rays from different angles.
- Draw up an accurate assessment of the anatomy of the canal (very important).
- Find the entrance to the canal and access the root filling material.
- If necessary, prepare a 1-2 mm cavity with DR1 and pour in solvent to soften the root filling material. Use a warm plugger or ultrasound if necessary.

Ⓟ **Preparation of the coronal third**

- Engage the DR1 gently in the root filling material at a speed of 1000 rpm (recommended torque 1.5 Ncm). The active tip of the DR1 facilitates initial penetration.

**Working the middle and apical thirds**

1. Insert the DR2 at a speed of 600 rpm, torque of 1 Ncm.
2. Do not force the passage, use back and forth movements, and clean and check the file regularly.
3 Continue to advance apically as long as root filling material remains visible on the file.
4. If necessary, add solvent to assist removal of the root filling material.
5. Establish the final working length and finish shaping with standard Race NiTi instruments.

When the Rooter motor is used, memory programme no. 3 for D-Race DR1 should be selected. For the D-Race DR2, memory programme no. 1 should be selected.

# 05

## Obturation

Obturation allows prevention of any recontamination while sealing the canal system three-dimensionally to ensure sustained impermeability. There are a number of filling techniques. FKG offers solutions for the two most widely used types of condensation, that are lateral and vertical.


### 5.1 Lateral condensation

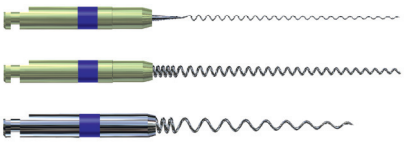
5.1.1 Spreaders. The Spreaders are manual instruments with a conical tip used for lateral filling. They are available in steel or NiTi.


### 5.2 Vertical condensation

5.2.1 Pluggers. The Pluggers are manual instruments with a flat tip used for vertical filling. They are available in steel or NiTi.

### 5.3 Paste fillers

5.3.1 Standard paste fillers. Paste fillers allow distribution of the obturation paste and sealing cement in to the canal down to the apex or application of calcium hydroxide as a temporary medication.



Different standard paste fillers are available:

Lentulo paste filler
Spring paste filler
IC filler for reconstruction cements

5.3.2 Exclusive paste filler: Sensipast. Sensipast is the only paste filler with an automatic safety clutch that allows working without stress. Sensipast reacts before the constraints of metal elasticity limits are passed. When its active part blocks, the automatic clutch reacts avoiding the wire rupture. The miniature clutch is housed in the Sensipast handle, a unique design allowing it to be used with most contra-angles on the market.

### 5.4 Paper points and gutta percha

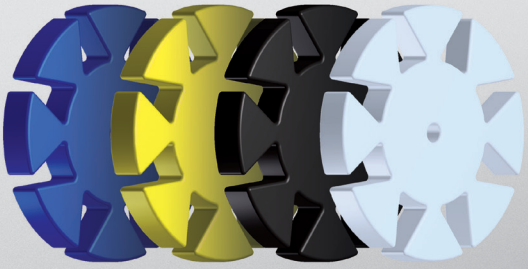
Paper points are used to dry the canals and allow better adhesion of the sealing and obturation materials. Gutta percha is a product obtained from natural latex. The chemical composition of gutta percha points is notably enhanced for instance by the addition of zinc oxide or resins.

5.4.1 Paper points. Rolled without a binding agent, the paper points are highly absorbent, rigid and flexible at the same time. A large range of ISO sizes and packs is available.

5.4.2 Gutta percha. Rolled precision points produced in accordance with the strictest hygiene requirements. Rigid, they do not bend during insertion but remain flexible enough for use in curved canals. Their malleability is also ideal for optimal filling. Our gutta percha points are radiopaque (without cadmium) and come in a large variety of ISO diameters and packs.

# 06

## Accessories



### 6.1 SafetyMemoDisc (SMD)

The SafetyMemoDisc (SMD) are fixed to Race files as a standard and are available separately for manual instruments. Following the below recommendations, SMD allow an optimised management of use and control over metal fatigue of instruments. The SMD can be sterilised and never leave the instrument, ensuring that the usage information is kept.

6.1.1 Manuel instruments. For manual instruments, the SMD records the number of uses or sterilisations cycles.

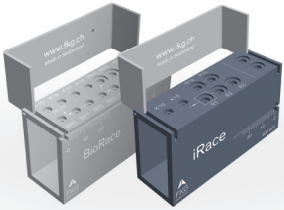
6.1.2 Rotary instruments. For rotary instruments, one to four petals are removed from the flange after each treatment. The number of remaining petals indicates the further possible uses:

Ⓟ

- 1 petal corresponds to simple cases (S), that is, straight, slightly curved or wide canals.
- 2 petals correspond to moderately complex cases (M), that is, more curved or narrow canals.
- 4 petals correspond to difficult cases (D), i.e. canals with extreme curvature, S-shaped, very narrow or calcified.

## 6.2 Endo stands

FKG Endo stands allow all instruments for canal treatment to be kept at hand in the order of their use. Endo stands are robust and tolerate almost all types of sterilisation.




6.2.1 Dedicated Endo stands. There is an Endo stand adapted for each iRace, BioRace, EasyRace and XtremeRace working sequence.

6.2.2 Freestyle Endo stand. Adapted to individual working methods, the Freestyle Endo stand allows the basic sequences to be completed with additional instruments of different ISO sizes, according to the canal anatomy.

It offers 14 positions for organising instruments in a personal way.

# B. **Reconstruction and laboratory**

# 1. Reconstruction

### 1.1 Matrixes

These are compatible with all reconstruction materials. FKG offers matrixes of different sizes and thicknesses as well as perforated matrixes and matrix bands.

### 1.2 Screw posts

These come in steel or titanium and have a crosshead. A hollow wrench and a screwdriver are included. Choice of 10 different lengths.

### 1.3 Screw reamers

Pilot reamer of 32 mm length, handle 13 mm, Sst.
4 diameters from 0.7 mm to 1.3 mm.

Calibration drill of 33 mm length, handle 13 mm, Sst.
4 diameters from 1.2 mm to 1.9 mm.

Recommended speed 1200 rpm.

### 1.4 Root posts

For root anchorage, made of steel, with a tapered shape and grooves for a better retention.

### 1.5 Calcinable impression posts

For taking an impression, conical shape, opaque or transparent, rapid combustion without waste.

- The calcinable posts have a diameter slightly inferior than the stainless steel root posts to compensate the variations in mass of the materials used in the laboratory.

### 1.6 Mooser reamer for impression posts

Helical trimming reamer of steel, with sharp cutting blade for optimal calibration. Inactive point to avoid the risk of via falsa.

## 2. Laboratory

FKG provides specific material for laboratories, such as ball retaining hooks, mandrels for polishing discs and lingual bars (see appendix).

# C. **Quality assurance**

### 1. Aims of our quality policy

To guarantee the safety of our medical devices in order to limit the risks for the patient. To make every effort to provide our customers with high-quality, innovative and efficient products. To meet once needs and continuously improve the effectiveness of the quality management system.

### 2. International certification

FKG Dentaire is certified in accordance with ISO 13485, ISO 9001, CE93/42 and Japan MHLW M.O. No. 169.

### 3. Sterilisation procedure for reusable medical devices

The full cleaning and sterilisation procedures for medical devices are available at www.fkg.ch.

(see p. 36)

### 4. General information

- NiTi instruments contain nickel and should not be used for patients with known allergic sensitivity to this metal.
- Instruments marked ② are intended for single use.
- “Single patient” use of instruments is recommended to avoid the risk of cross-contamination.
- Sterilization with chemical sterilizers or a hot air oven has not been validated by FKG Dentaire. Please refer to the manufacturer’s instructions for the duration of the cycle. Our instruments nevertheless tolerate these methods and a maximum temperature of 200°C.

## Sterilisation procedure for reusable medical devices

### Ⓟ First use

**Non-sterile products**
Follow the steps “Cleaning and sterilisation” steps below carefully.

- **Cleaning and sterilisation**

1. Manual cleaning with or without the assistance of ultrasound. Good cleaning is a basic condition for quality disinfection and sterilisation.
2. Rinse with demineralised or distilled water for at least 1 min.
   Dry the instruments.
3. Inspection - control: discard broken or deformed instruments.
4. Packing: place the instruments in a sterilisation bag that complies with ISO 11607-1.
5. Sterilisation with an autoclave according to protocol EN/ISO 17664: 134°C/273°F, 2.2 bar for 18 min. Always refer to the manufacturer’s instructions for the duration of the cycle.
6. Storage: keep the instruments in their sterilisation bag in a clean dry place.

**Sterile products**

- Open the packaging.
- Extract the instrument (use of gloves is obligatory).
- Use the instrument according to good dental practice.

### Ⓟ Second and subsequent use

1. Disinfection: submerge the instruments directly after use in a disinfectant solution and if necessary brush them manually.
2. Rinsing:  under running water for at least 1 min. Dry the instruments.
3. Follow steps 1 - 6 above “Cleaning and sterilisation”.

**Precautions regarding disinfection**
Do not use solutions containing:

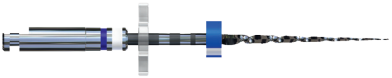
- Phenol (corrosion), Aldehyde (fixation of blood) and Di-/triethanolamine  (corrosion).

# New finish for rotary instruments

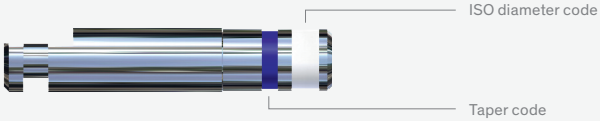
A new finish for metal handles (for contra-angles) and depth marks will be introduced gradually from mid-2013, especially in the Race range of instruments.

### 1. CI metal handles for contra-angle

The aim is to provide easy identification of the ISO diameter (wide ring) and taper (narrow ring). The information remains visible when the instrument is inserted in the head of the contra-angle.



► Handle length 12 mm with Crominox surface, paint marking of ISO and taper codes




| | Narrow ring taper | Wide ring Ø ISO 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pre-Race 19 mm | .10 | | | | | | | ● | | | | | | |
| | .08 | | | | | | ● | | | | | | | |
| | .06 | | | | | ● | | ● | | | | | | |
| Race 21/25/31 mm | .06 | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | .04 | ● | ● | ● | ● | ● | ● | ● | | ● | | | | |
| | .02 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| S-Apex 21/25/31 mm | | | ● | ● | ● | ● | ● | ● | | ● | | ● | ● | ● |

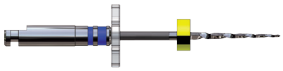
- Available only in some countries, depending on regulatory approvals.
- The SMD disc are transparent for all the Race range.

### 2. Depth marks

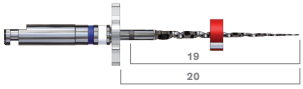
The depth marks are used to recognise the position of the WL in the tooth and are additional to the Rubber Stop. The depth marks are applied on all instruments in the Race range.

- Depth marks applied on instruments of length 21 mm/ 25 mm/ 31 mm

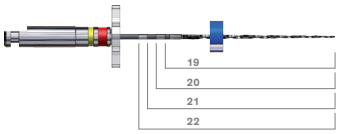

Examples of instruments with the new finish:



- 19 mm instruments, no marks.



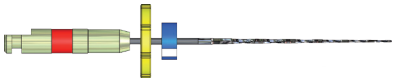

- 21 mm instruments, marks at 19 and 20 mm.




- 25 mm and 31 mm instruments, marks at 19, 20, 21 and 22 mm.

## CM metal handles for contra-angle

The colour ring on the handle indicates the ISO diameter and the SafetyMemoDiscs (SMD) specify the taper of the instruments.



Ring Ø ISO

| 6 | 8 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 70 | 80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Taper (SMD)

| .02 | .04 | .06 | .08 | .10 |
|---|---|---|---|---|

## Silicone Endo stop

To mark working length, radio opaque

- The stroke identifies the original tip direction in the root canal (SSt instruments)
- ISO Colours indicate the file length

19 mm  21 mm  25 mm  31 mm

# ® Customer benefits

Unique performance provided by all instruments in the Race range, for enhanced safety of use:

- Unique rounded safety tip for a precise guidance and centring of instruments.
- Patented design of alternated cutting edges to avoid screwing-in effect and to reduce the risk of breakage.
- Sharp cutting edges for an optimal cutting efficiency.
- Exclusive electrochemical polishing to increase resistance to torsion and cyclic fatigue of NiTi.
- SafetyMemoDisc (SMD) reliable monitoring of metal fatigue and number of uses.

## Golden rules for optimal use of Race instruments

- Speed: 600-1000 rpm - torque: 0.5 to 1.5 Ncm, depending on instruments.
- Broad back and forth movements without using force.
- Light hand, let the instrument do the work.
- Work for 3-4 seconds, remove.
- Clean the blade and irrigate the canal.

## Which motors can instruments of the Race family be used with?

Unit motors, to reach the minimum recommended sped of 600 rpm:

- Air motors 20,000 rpm: use a contra angle 32:1 reducer
- Electric motors 40,000 rpm: use a contra angle 64:1, 70:1 reducer

Endodontic motors, corded or cordless like the Rooter:

- Set the speed to 600-1000 rpm and the torque to 0.5 to 1.5 Ncm

## As a reminder, how many times can a Race be used?

The following are the instructions for the SafetyMemoDisc:

- 1 petal corresponds to simple cases, that is, straight, slightly curved or wide canals.
- 2 petals correspond to moderately complex cases, that is, more curved or narrow canals.
- 4 petals correspond to complex cases, that is, canals with extreme curvature or S-shaped, very narrow or calcified canals.

- Although Race instruments can be sterilised and reused several times, it is recommended to use them according to the “single patient” principle to avoid the risk of cross-contamination.

Ⓡ Pictogram refers to Race range

Ⓟ Pictogram points out instructions for use

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