

Short guide

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Diamond burs

Applications

- Cavity, inlays, onlays preparation and finishing
 - Crowns and bridges preparation, finishing
 - Finishing and polishing of composite fillings (F+C)
 - Adjustment of prostheses
 - Removing of old crowns and metal fillings (SG)
-

Clinical sequence of a cavity preparation

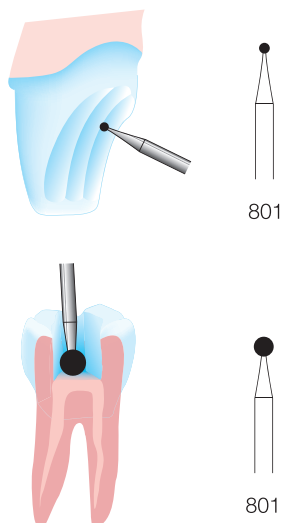
- Opening, enlarging and shaping (primary preparation)
- Excavating
- Finishing (secondary preparation)
- Cleaning and drying
- Placing the fillings
- Shaping of restoration

Fillings materials

- Amalgam: "Undercut"
- Composite
- Cast fillings: "No undercut"

Cavity classification

- Class I: fissure caries
 - Class II: proximal caries posteriors
 - Class III: proximal caries anteriors
 - Class IV: proximal caries with loss of incisal edge
 - Class V: cervical caries
-



Type 801-801L: Cavity burs

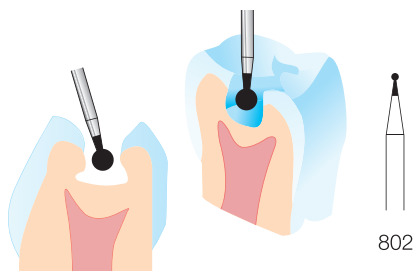
To treat decays, amalgam or composites cavities.
Remastering of fissures after preparation with plastic filling or ceramic inlays.

Small diameter:

- to eliminate decay from sulcus and decay infiltrated in pits and fissures.
- for small decays close to incisors and canines that require tiny and retentive cavities.
- for cavity retentions in those teeth with bigger decays.

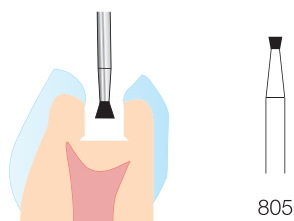
Big diameter:

- to eliminate badly decayed cavities, essentially on (018-021) molars or for concave shaping of crowns in the incisal area (029-035) allowing an optimal stress distribution.
-



Type 802: Cavity preparation class I-III (plastic filling materials)

The cylinder diameter allows to get straight walls, whereas the round bur enlarges the retentive cavity in depth, according to the decay destruction shape.



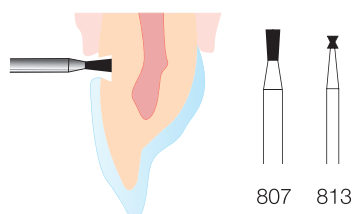
Type 805: Cavity preparation class V (plastic filling materials)

Its shape provides very retentive and not too deep cavities, or adds retention inside an existing cavity.



Type 806: Cavity preparation class V (plastic filling materials)

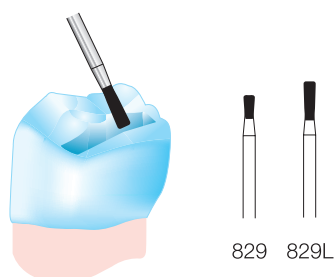
To obtain the classic straight wall cavity but with a retentive zone (convergent to the occlusal face) in depth.



Type 807 / 813: Cavity preparation class II

The walls of the cavity obtained with the type 807 are convergent to the occlusal face.

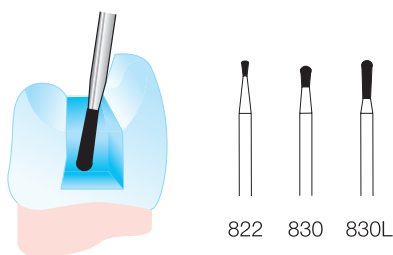
Type 813 allows cavity preparations with an optimal fixation of glass ionomer cement or composite in the posterior region.



Types 822 / 829 / 830: Cavity preparation class I

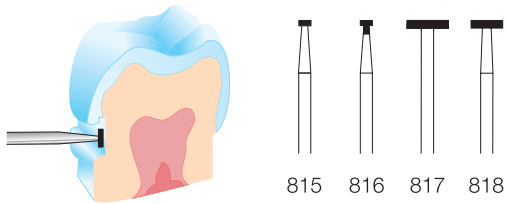
Types 829L / 830L: Cavity preparation class II

The round tip of the inverted pear bur allows a convergent cavity avoiding sharp edges and therefore fracture risks.



Type 815 / 816 / 817 / 818: Occlusal reduction

For micro-retentions in depth of the cavities made for condensed fillings: amalgam, resin composite. For depth marking, shaping the fissures of ceramic inlays and for teeth separating (817).



Type 811: Shaping of occlusal surfaces of posteriors

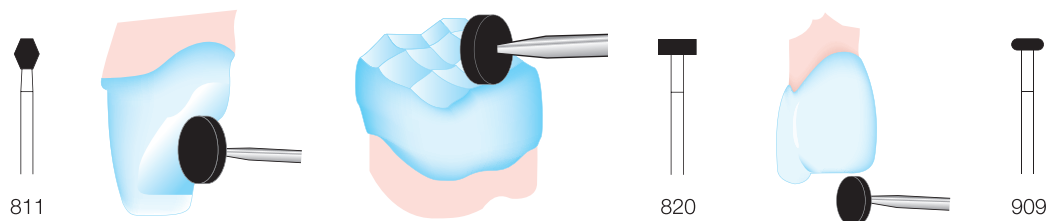
Shaping of occlusal surfaces of posteriors (shaping of cusps) also during tooth preparation of crown. With turbine it allows fast reduction of great amounts of dental substances.

Type 820: Fast occlusal reduction of tooth volume

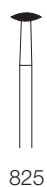
Fast occlusal reduction of the tooth volume (mostly used for trimming, to wear off all materials (teeth, metal, ceramic, etc.) during tooth preparation.

Type 909: Concave grinding of crowns, occlusal material reduction

Surface grinding.



Type 825: Shaping fissures of ceramic inlays

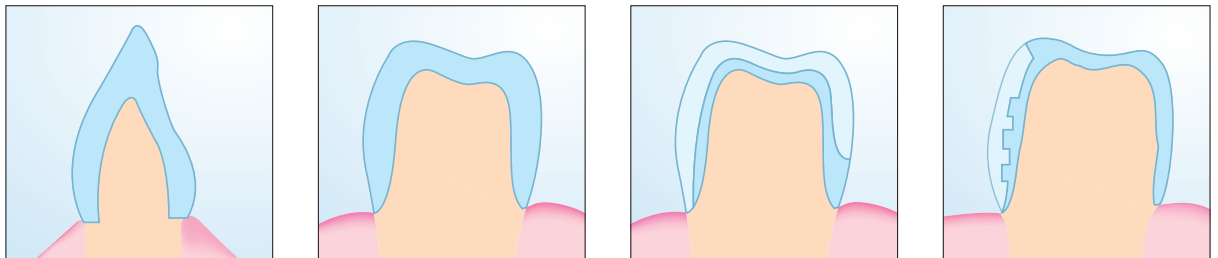


Clinical sequence of crown preparation

- Elimination of proximal contact
- Determination of preparation depth
- Primary preparation:
 - circular material reduction
 - determination of preparation shape
 - If necessary, shaping of material and lingual anterior surfaces
- Secondary preparation:
 - finishing crown core
- Further measures

Types of Crowns

- All-cast crown: metall alloy
- Venner crown: ceramic venner and acrylic venner
- Jacket crown: ceramic and acrylics



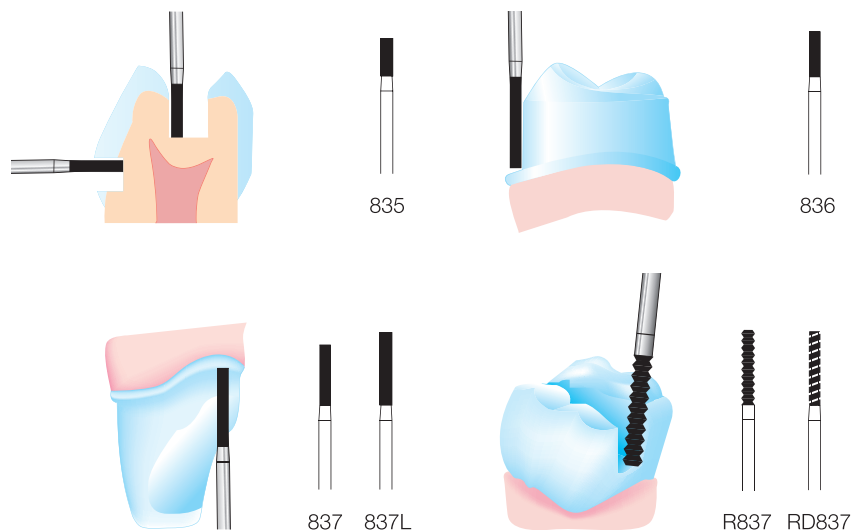
Type 835: Inlay preparation

Short burs are easy to use on molars whenever mouth opening is reduced.

Type 836: Inlays / onlays preparation, crown preparation

Type 837 / 837L: Shoulder preparation (crown), trimming of long anterior teeth

Allow a better view of the working axis.

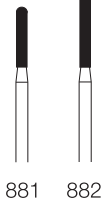
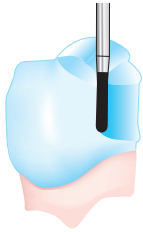




Type 838 / 880: Inlay preparation, cavity preparation with cast fillings

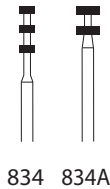
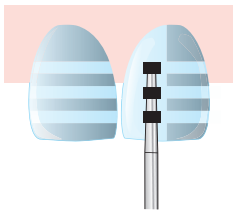
Amalgam and resin composite.

The flat tip will conform cavities, full shoulders, flat cavity floors, allowing the efficient placing of inlays / onlays.



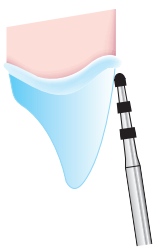
Type 881: Peripheral crown preparation

Chamfer or cervical margin.



Type 834, 834A, 868B, GF844: Veneer preparation

The orientation grooves define the maximum substance removal desired, thus determining the level of the definitive preparation. The smaller (834/016-018) create a 0.3 – 0.35 mm depth on the central incisors and canines, while the larger (834/021) head size creates a 0.5 mm depth on lateral incisors. The x-large (834A/031) creates a 1.05 mm depth. With 850/016 or with the two-grit instruments (fine grit/coarse grit) GF844/014-016 we reduce the facial tooth structure to the pre determined depth.

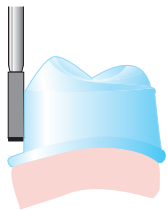


868B



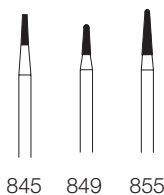
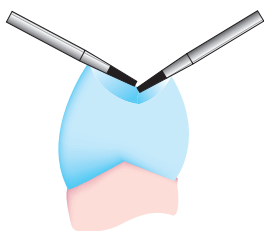
GF 844

Labial orientation grooves can also be created with the new depth markers 868B/018-020, starting at the cervical third of the labial surface. The narrow diamond coated parts of the working element allow easy creation of orientation grooves without excessive heat generation. Even when applied at too steep an angle, the tapered shape of the working element and its rounded tip safely prevent excessive penetration.



Type 839: Crown preparation

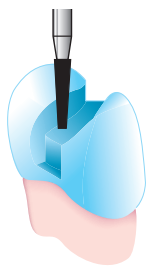
Shoulder adjustment.



Type 845: Inlay preparation

Type 849: Inlay preparation

Type 855: Inlay / onlay preparation



Type 846: Inlay / onlay preparation, crown preparation

The flat tip will conform cavities, full shoulders, flat cavity floors, allowing the efficient placing of inlays / onlays.

Type 847: Crown preparation, tangential or with shoulder

Type 848: Crown preparation, convergent peripheral reduction

Including shoulder.

Convergent peripheral reduction of the tooth creating a full shoulder cervical margin for a ceramo-metallic crown. The cone-shaped bur creates the convergence and therefore allows the insertion and desinsertion of the prosthetic crown.

The flat tip conforms a full shoulder cervical margin. Tapered (flat conical) burs are also used to prepare the tooth for inlays / onlays.



847



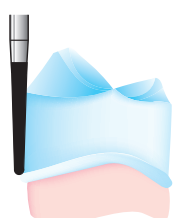
848



R848



RD848



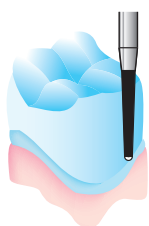
856



850

Type 856: Crown preparation

Type 850: Crown preparation and trimming elongated teeth



851

Type 851 / 857: Crown preparation without altering the cervical margin

Non-cutting tip.

It can also be used for root-canal preparation like 859E.

Type 852: Gingival curettage, cavity preparation with cast fillings

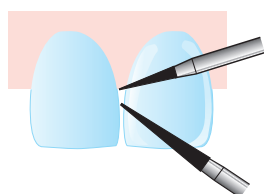
Creates bevel edges.

Type 858: Crown preparation (tangential)

Only for all-cast crowns with minimal space available.

Type 859: Crown preparation (tangential), trimming of very long teeth

Marginal seals causes problems.



852

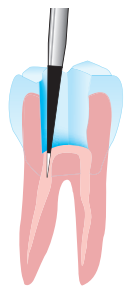


858



859

Used to prepare the crown periphery during the conformation of the proximal surfaces. It's so fine that it does not damage the adjacent tooth. The varying lengths are fantastic for easy removal of interproximal excess flash, smoothing and refining of the facial and lingual surfaces.



859E

Type 859E: Endodontic burs

For root-canal preparation (non-cutting tip).

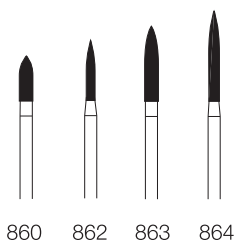
Type 860: Cavity preparation with cast filling

Composites cavities chamfer

Type 862 / 863: Crown preparation and trimming of very long teeth

Create a fine chamfer cervical margin, less harmful for the tooth (indicated for metal crowns which thickness can be very small at this level).

Type 864: Occlusal trimming and finishing of acrylic fillings



860

862

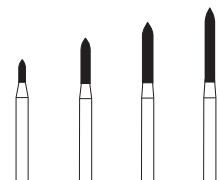
863

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Type 875 / 877 / 878 / 879: Crown preparation

Peripheral convergent reduction of the tooth.

An uncommon chamfer is obtained.



875

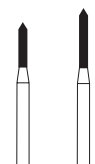
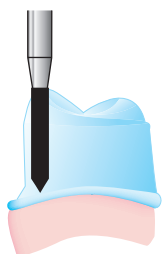
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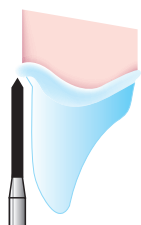
Type 884 / 885 / 886: Crown preparation (tooth peripheral reduction)

Same remarks as for type 881 but obtaining a knife-edge or bevel preparation margin, more open and angular. Shoulder with distinct preparation line; mainly for all-cast (metal alloy) and veneer (ceramic and acrylic) crowns.



884

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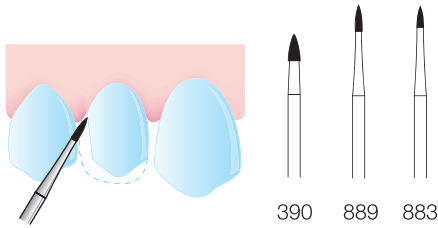
886

Type 390: Finishing bur for amalgam fillings

Type 883 / 889: Crown preparation (interproximal bur)

Type 889 creates a subgingival or gingival cervical chamfer. The long shank allows an easy access to this deep area and the flame shape allows the creation of a long and regular bevel edge and even passes to areas close to cervical.

The fine grit version is recommended when we try to avoid the risk of a too marked bevel edge, looking for a better finishing and an accurate work.

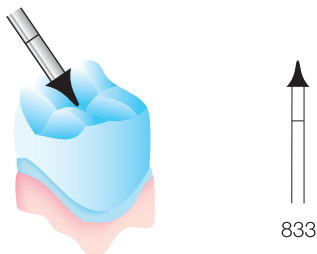
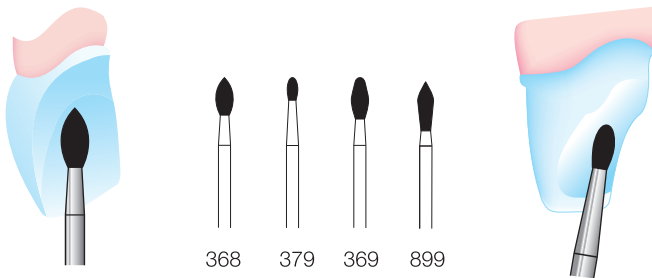


Type 368 / 379: Reduction of the lingual surfaces of incisives / canines, as well as the occlusal surface and cusps on posterior teeth.

Sometimes used to make short bevel edges.

With fine and extra fine grits they are used for composite finishing.

Type 369 / 899: Grinding of palatal surfaces, surface grinding of restoration materials



Type 833 / 833A: Reworking molars' cusps

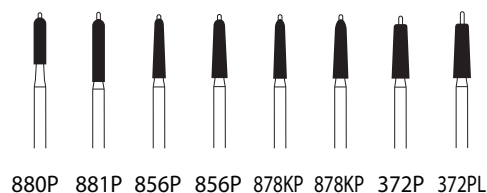
Type 880P, 881P, 856P, 878KP, 372P, 372PL: Crown preparation with guide pin

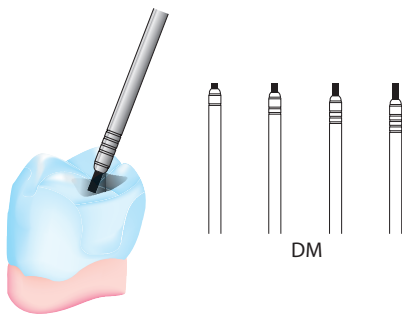
Pin-Diamonds allow for a non-traumatic, tissue-friendly placement of the crown margin.

The uncoated guide pin serves as a horizontal distance keeper and prevents excessive preparation. What's more, in sub-gingival preparations the guide pin also assures that a predefined distance to the periodontium is kept.

Advantages:

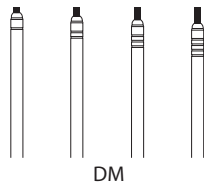
- Controlled preparation with a defined, even cutting depth
- Damage to the biological width is almost entirely avoided
- Precise cutting depth at the crown margin





Type DM: Axial reduction

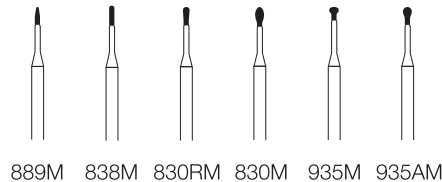
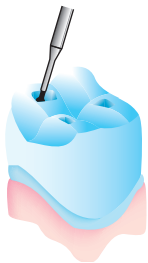
Special depth marking instruments for all areas of crown and bridgework. The success of a restoration depends to a high extent upon the compliance of the minimal wall thickness of the restoration. With these four instruments it is possible to define the prepared margin at the depths of 0.6 mm; 1.0 mm; 1.5 mm and 2.0 mm. The DM instruments have ring markings stating each individual depth. This way you can see the differences even when in the bur stand. With these instruments all preparations are possible, with any technically or physically required depth.



Micro-preparation burs

Type 889M / 838M / 830RM / 830M / 935M / 935AM

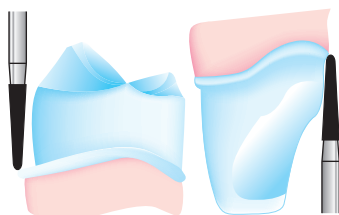
- long slender necks made of high-tensile steel allow a minimally invasive shaping of the cavities and a maximum preservation of the sound tooth structure
- better vision during preparation
- precise material reduction due to the choice of different grit sizes
- maximum enamel protection



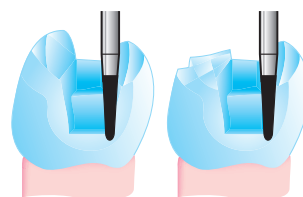
Type 868K / 869K / 877K / 878K / 879K: Crown preparation

Peripheral reduction of the tooth.

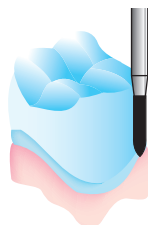
Same remarks as for types 875 / 879 but the conical shape allows a marked convergent axial preparation with a subgingival margin.



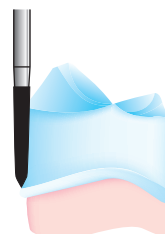
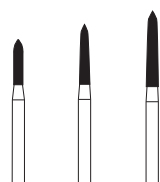
868K



869K



877K 878K 879K



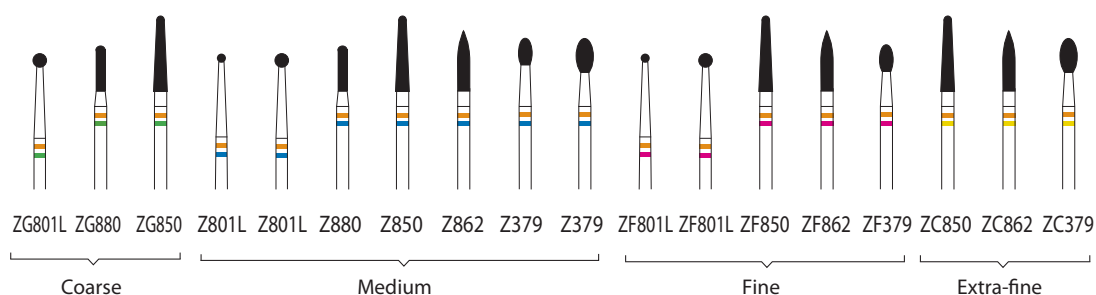
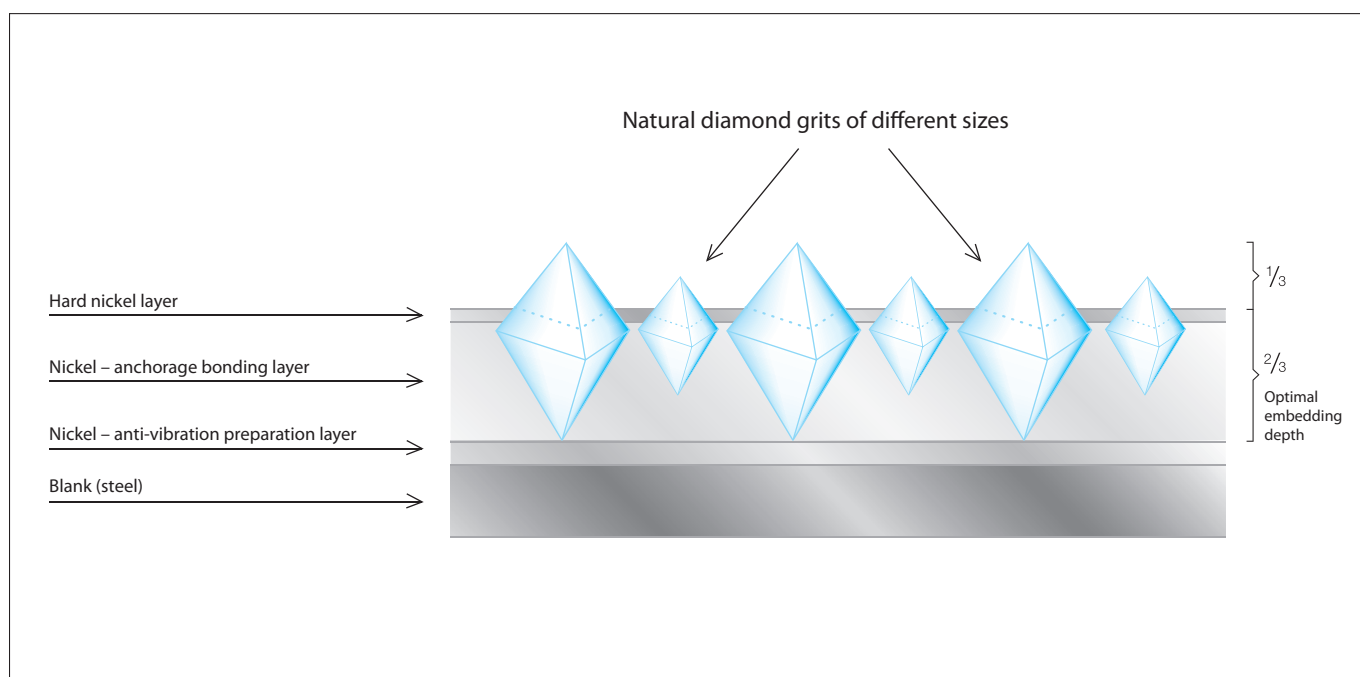


Special coating and higher density of diamond grains for efficient working on ZrO₂ in the dental practice

Zirconium oxide has proven to be the perfect material for modern dentistry due to its reliable and durable properties. The grinding of ceramic abutments, trepanation, removal or fitting of ceramic restorations made of ZrO₂ are very difficult to manage with conventional instruments. The special coating features a considerably higher operating life and material reduction compared to conventional diamond instruments.

Advantages:

- Special coating for durable bonding of the diamond particles
- High substance removal
- Longer service life than conventional diamond instruments
- Shapes adapted to practice requirements
- Trepanation with round bur to create access for root canal treatment
- Recommended speed: 160.000 min⁻¹ with a spray cooling of 50 ml/min.



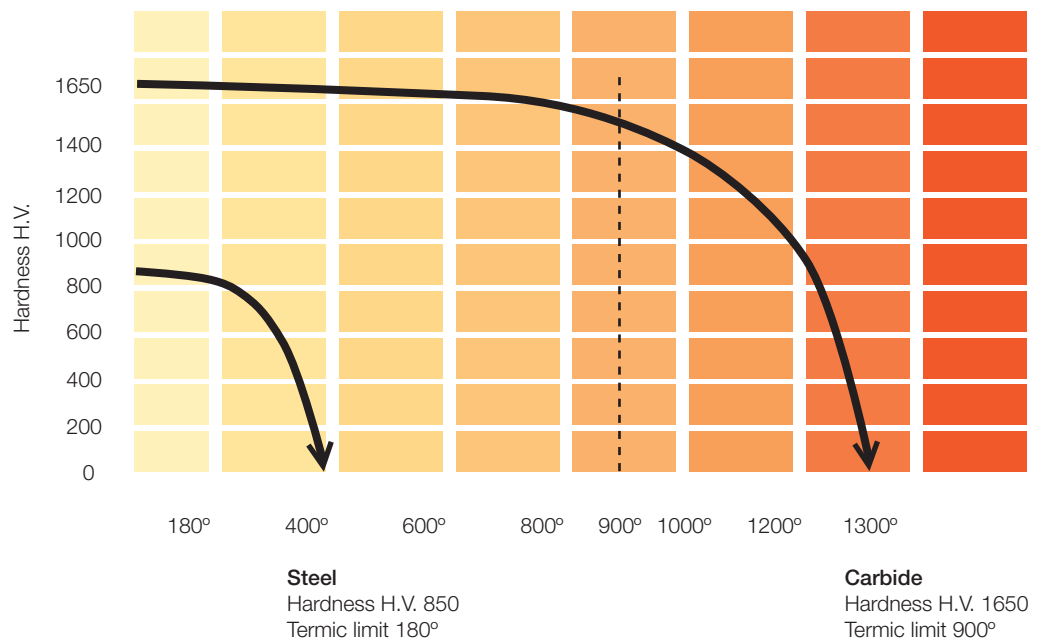
Tungsten carbide & ceramic burs

Application

- Removal of crowns and bridges
- Trimming and finishing of acrylics (Composites) and all conventional filling materials
- Excavating (removal of amalgam)
- Bone cutting surgical burs
- Ceramic Soft Tissue Trimmer for surgical use

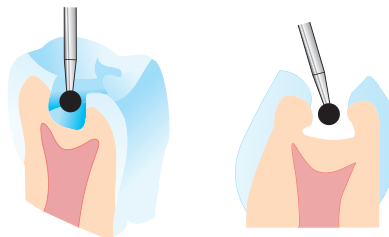
Tungsten carbide burs

- Does not oxidize (no black stains when being sterilized)
- Correct application of tungsten carbide burs will guarantee an excellent efficiency and a ten times longer cutting half-life of the instrument
- The figure below illustrates the main differences between steel and tungsten carbide burs.

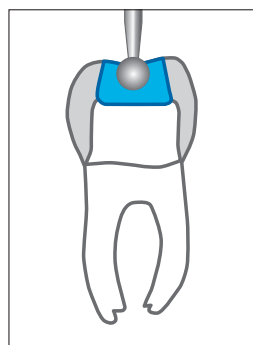


Type 1S, Q1: Excavating burs

Removal of amalgam and composites.



Main advantages of 1S & Q1

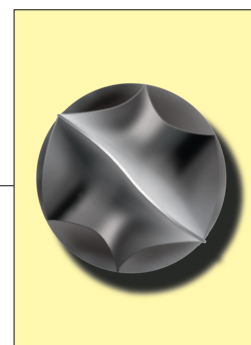


Round shape

with screwshaped blades (1S) & sharp tip transversal eccentric (cross-cut) blades (Q1).

They do not have a dead angle, thus allowing:

- Optimal axial penetration
- Low resistance while conservative excavating
- Strong reduction of vibrations for patient's and dentist's comfort
- Prevention of pulp's thermal trauma by excavating without applying pressure and operating at low-speed using a green contra-angle



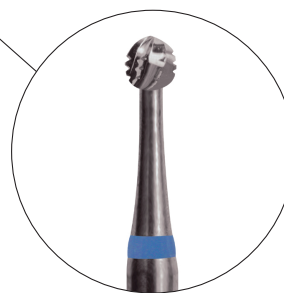
Type 1S



The screwshaped blades ensure:

- Immediate axial penetration
- Low resistance during penetration
- High cutting efficiency, comfortable

Type Q1

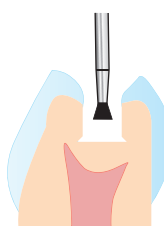


The sharp tip transversal eccentric (cross-cut) blades ensure:

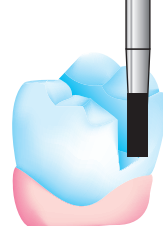
- Strong reduction of vibrations for patient's and dentist's comfort due to the staggered toothing on the lateral surface of the instrument
- Surface with higher retention
- High confort, efficient

Type 2, 7 & 21

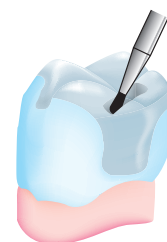
Removal of caries and old fillings



2



21



7



Type 21R & 31R

Removal of amalgam and composites.

FG31R is one of the mostly used tungsten carbide bur for amalgam removal:

- Cross-cut for optimal confort
- Transversal excentric blade for easy axial penetration
- Low heat generation



31R



Main advantages of FG31R compared to a normal helicoidal bur



FG31R

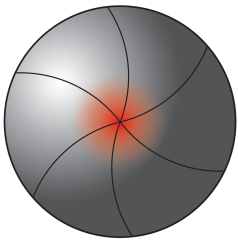
Flat transversal cutting edge cause:

- Heating of the blades
- Deterioration of the working conditions
- Bur's breakage : accumulated particles are difficult to evacuate
- Uncomfortable for the patient

Transversal blades cross-cut

Function as independent blades and reduce the necessary effort. The small production of particles ensures an optimal cooling. Old amalgam fillings are removed in no time with low heat generation, releasing a minimum of potentially toxic mercury vapour, protecting the health of both patients and members of the dental practice team.

- Better cutting efficiency
- Low heat generation
- Better precision
- Better protection of the patients and dentists



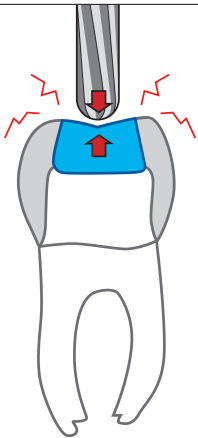
Concentric cutting segments cause:

- Dead angle at the tip of the bur
- No axial penetration possible

Round tip of the bur

Guarantees high precision while working on restorations. Vibrations are eliminated for the dentist's and patient's confort.

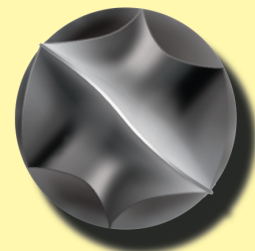
- Better precision
- Better confort
- Gain of time and easy handling



Transversal eccentric (wavy) blades

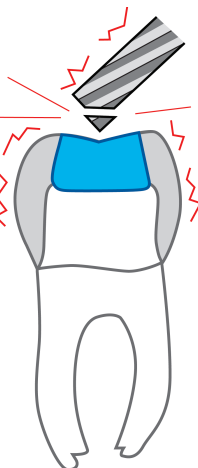
No dead point allowing:

- Optimal axial penetration
- Low resistance during penetration



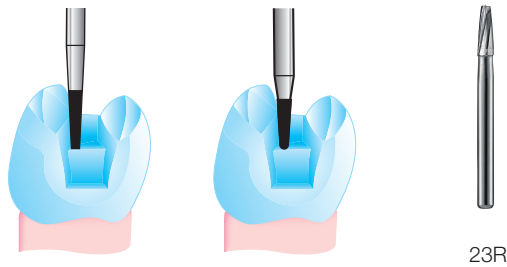
Due to the flat extremity, restoration has to be done sideways, causing:

- Desagreable vibrations
- Easy breaking of the burs
- Unconfort for the patient



Type 23, 23L, 23R, 23RL, 33, 33L & 33R

Removal of amalgam and composites.



Type 21RX, 36R & 17

Removal of crowns and bridges made of metal alloys, titanium and veneers made of ceramic as well as old fillings.

Type FG21RX

For turbine at high speed.

Type FG36R

For red contra-angle: high efficiency with low vibration.



General characteristics:

A distinctive characteristic is the tip-transversal blade creating an end-cutting tip which gives the 21RX & 36R its impressive axial drilling ability and ensures low resistance to penetration. The blade configuration features a large chip space which provides optimal cutting action – all these properties are preconditions for the effortless and quick use of these burs.

- Compared to frequently used diamond abrasives, the 21RX & 36R will not clog, thus preventing the otherwise unavoidable generation of excessive heat.
- Another positive feature is the high resistance to fracture due to stable bur head and the strong joint at the shank.
- In addition, the reduced vibrations ensure a much more comfortable treatment.

Trimming and finishing burs 12 & 30 blades

- Trimming and finishing of acrylics (Composites) and for gold and amalgam (12 blades).
- Removal of adhesive used in orthodontic (30 blades).
- Finest finishing of composites and cements as well as optimum smoothing of the cavity margin.

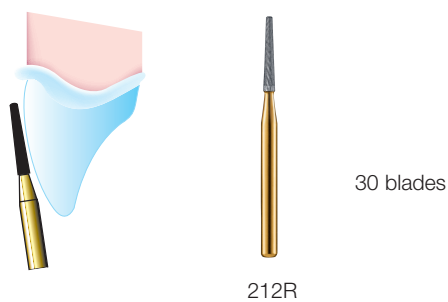
Perfect shape for lingual contouring and finishing



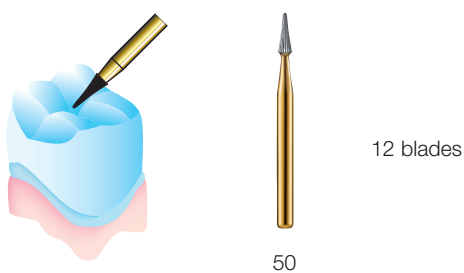
For interproximal surfaces.



Perfect shape for feathering the facial surfaces of anterior teeth.



3 finishing burs with varying lengths which allows a great versatility in finishing and contouring anterior composites.



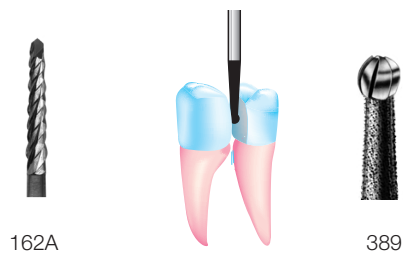
Surgical Burs

Endodontic burs for root-canal preparation



Surgical burs for tooth's roots separating

Due to their efficient cutting ability these instruments are suited for cutting hard tooth substance, in particular to separate tooth's roots.



Surgical burs for bone cutting (Lindemann)

Due to their smooth cutting ability these instruments are specially suited for bone cutting.



Surgical bur for bone cutting

- Low vibration
- No rost



CSTT – Ceramic Soft Tissue Trimmer

Applications:

1. CSTT as a soft tissue trimmer

- Gingival modelling
- Freeing deep cavities
- Laceration of interradicular granulation tissue
- Papilectomy / removal of hyperplastic gingiva
- Exposure of intraosseous implant sections and retined teeth

Before using the CSTT any blood and pus must be rinsed away and the area must be dried by means of a cotton sponge or by an air-syringe. The point of the CSTT must be moved through the tissue with small "brushstroke" movements in a 30-45° degree, avoiding to force the point of the trimmer in the tissue or cutting too deeply in only one cut.

2. CSTT used for opening of sulcus, e.g. for impressions

Before using the CSTT any blood and pus must be rinsed off and the area must be dried by means of cotton sponge or by an air-syringe. The CSTT is moved in the sulcus with an even and slow sliding motion of the necessary depth. To avoid any tissue loss, it is important to preserve the epithelium of the marginal gingiva.

Using the CSTT correctly, with all its applications, you will find that the CSTT is often able to replace not only electro-surgery and surgical blades, but also in many cases the use of retraction cord.

IMPORTANT

User information's

CSTT (Ceramic Soft Tissue Trimmer) is used under rotation in the air turbine handpiece (300'000 – 500'000 min⁻¹). Correctly used the kinetic energy causes a heat-coagulating effect without "burning" the tissue. When using the CSTT, avoid excessive contact to tooth or bone tissue.

Cooling

To be used **without** any water / spray cooling.

Cleaning

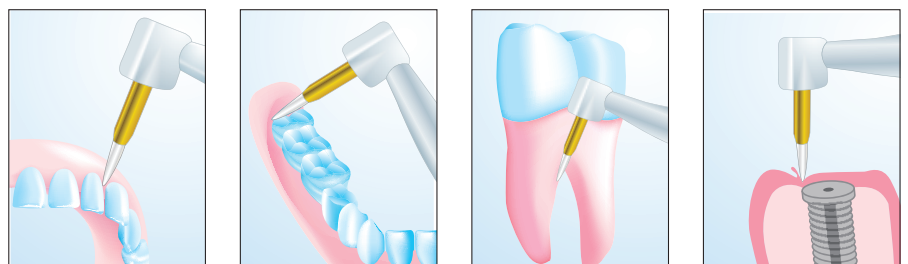
Water and detergent. **Warning:** do not use any solvent for cleaning purpose.

Sterilisation

Sterilise in dry heat at 180°C max. or by steam autoclave at 134°C for 18 minutes.



Example



User informations

Use adequate supply of water spray in order not to damage the tooth and contiguous tissues. The water should be used throughout the entire length of the working part. A deflection of the cooling spray can cause heat related damages.

- Additional cooling is required for FG instruments with a total length exceeding 19 mm and for instruments with a head diameter exceeding 2 mm.
- Immediately remove any instruments that are damaged, bent or do not run concentrically.
- Pressure should be 0.3 – 2N (30 – 200p) for FG instruments and 2 – 5N (200 - 500p) for HP instruments, in other words work with as little pressure as possible.
- The turbine, contra-angle and handpiece must be in perfect technical conditions.
- Insert the instruments carefully and without using strength. Miniature instruments should not be inserted further than the end of the cylindrical part.
- Avoid canting or levering when grinding.
- Observe the recommended speed indicated in the table below and on packages.
- Full speed should be reached outside the mouth of the patient. Technicians should run the handpiece at full speed before application to the product on which it is being performed.

Hygiene recommendations

Desinfection, cleaning, sterilization and storage of the instruments.

- FG instruments must always be disinfected, cleaned and sterilized before being used on patients.
- Immediately place used instruments in a special anti-corrosive disinfectant bath for a short time, otherwise their colour code may come off. Do not use products that are too aggressive (hydrochloric acid, hydrogen peroxide,...), as they may corrode the instruments.
- Clean the instruments in an ultrasonic bath or under running water (preferably distilled water).
- After cleaning, immediately dry the instruments otherwise they may rust.
- Before sterilization, place the instruments in stands and trays suitable for sterilization.
- Sterilize the instruments. Autoclave: 18 min. 134°C, 2 bars. Hot air: 180°C
- After sterilization, keep the instruments in a dust-free place. Instruments used for surgery should ideally be kept in sealed containers.