ADVANCED CROWN, BRIDGE, VENEER PREPARATION KIT by MIK DENTAL.

This is a bur kit designed by Dr. Moez I. Khakiani on the tenet that the most important aspect of a bur is its tip. Knowing the shape and dimensions of the bur used (especially at its working tip) is of prime importance in order to ensure the desired margin architecture and the desired amount of tooth reduction can be achieved on a predictable basis.

The 19 (gold series) burs in this kit are strategically divided into 7 clusters, each designed for a specific prosthetic material purpose.

For ease of recognition and communication, the burs are named on the basis of either their tip design (e.g. MS for Modified Shoulder, DC for Deep Chamfer, etc.) or on the basis of their function (e.g. OR for Occlusal Reduction, IR for Incisal Reduction, etc.).

In addition, the number associated with each bur indicates the diameter of the bur at its tip or its functional length, e.g. DC 1.4 bur is a Deep Chamfer bur with tip diameter of 1.4 mm, IR 2.0 is an Incisal Reduction bur with a functional length of 2 mm.

Described next are individual burs in the kit with their design concept and protocol for use.

CLUSTER 1: PFM MARGIN (1st Row: Left)

1. MS 1.0

This is a Modified Shoulder bur with a tip diameter of 1.0 mm.

The classic shoulder bur creates a sharp internal line angle (butt) at the preparation margin. This area is prone to stress concentrations, possibly leading to abutment fracture at the neck region.

The MS bur has been designed as a flat tip bur, but with rounded edges that produce a smooth junction between the finish line and the axial walls. Such a modification helps reduce stress concentrations at this vulnerable part of the preparation.

This bur is to be used by sinking the tip to its full depth, thereby leaving a 1.0 mm groove in the tooth.

Use: For preparing buccal/labial margin for a PFM prosthesis.

2. DC 1.0

This is a Deep Chamfer bur with a tip diameter of 1.0 mm.

This bur is to be used only half its depth in order to avoid formation of a lip of enamel at the margin. Thus when used correctly, the 1.0 bur leaves a 0.5 mm groove in the tooth.

Uses: For preparing the lingual/palatal margin when planning a PFM prosthesis with a lingual/ palatal metal collar.

It is also used for preparing all the margins (360°) when planning a monolithic zirconia or a monolithic metal prosthesis and for a PLV preparation.

3. MS 1.3F

This is a Modified Shoulder Finishing bur with a tip diameter of 1.3 mm.

This bur is used by sinking the tip slightly short of its full depth, thereby developing a margin that is 1-1.2 mm in width.

 $\mbox{Use:}$ For finishing buccal/ labial and proximal margins when preparing the tooth for a PFM prosthesis.

4. DC 1.2F

This is a Deep Chamfer Finishing bur with a tip diameter of 1.2 mm.

As this is a deep chamfer design, it is to be used only half its depth to avoid formation of a lip of enamel at the margin. Thus when used correctly, this bur leaves a 0.5-0.6 mm deep chamfer margin.

Uses: For finishing the lingual/ palatal margin when preparing the tooth for a PFM prosthesis with a metal collar.

It is also used for finishing all the prepared margins (360°) when planning a monolithic zirconia or a monolithic metal prosthesis.

In addition, it is also used to finish the proximal and palatal/lingual margins for a PFZ or a LiDiSi prosthesis, especially for anterior teeth.

CLUSTER 2: METAL FREE MARGIN (1st Row: Right)

5. DC 1.4

This is a Deep Chamfer bur with a tip diameter of 1.4 mm.

This bur is also to be used only half its depth. Thus when used correctly, it leaves a 0.5-0.7 mm deep chamfer margin.

Use: For preparing all the margins (360°) when planning for a PFZ or a LiDiSi prosthesis.

6. DC 1.8F

This is a Deep Chamfer Finishing bur with a tip diameter of 1.8 mm.

This bur is also to be used only half its depth. Thus when used correctly, it leaves a 0.8-0.9 mm deep chamfer margin.

Use: For finishing the buccal/labial aspect when preparing tooth for a PFZ or a LiDiSi prosthesis.

CLUSTER 3: MODIFIED INTERDENTAL (2nd Row: Left)

7. MI 0.8

This is a Modified Interdental bur with a tip diameter of 0.8 mm.

The Modified interdental bur is safe ended (no diamonds at the tip).

This prevents the bur from slipping gingivally as one moves from the labial/ buccal towards the lingual/palatal surface.

This prevents gouging of the margin and trauma to the gingival col, a common occurrence during interproximal reduction.

When using this bur, it is important to start above the interdental papilla on the buccal/ labial aspect and then running it across the inter-proximal tooth structure.

Use: For opening interproximal contacts when preparing the tooth for a PFM prosthesis, especially for molars.

8. MI 0.5

This is a Modified Interdental bur with a tip diameter of 0.5 mm.

This bur is also safe ended and is to be used in the same manner as that described for the ${\sf MI0.8}\,{\sf bur}.$

Use: For opening interproximal contacts when preparing the tooth for a PFZ, a LiDiSi, a monolithic metal or a monolithic zirconia prosthesis, especially for anterior and premolar teeth.

CLUSTER 4: OCCLUSAL REDUCTION (2nd Row: Center)

9. OR 1.6

This is an occlusal reduction bur with a diameter of 1.6 mm through its entire length (straight bur).

It is used by sinking the bur to its full depth, ensuring the bur follows the preexisting cuspal incline; thereby allowing anatomic reduction of the occlusal aspect.

Use: For occlusal reduction of the functional cusps when preparing a tooth for a PFM prosthesis.

10. OR 1.2

This is an occlusal reduction bur with a diameter of 1.2 mm through its entire length (straight bur).

Uses: For occlusal reduction of non-functional cusps when preparing a tooth for a PFM prosthesis.

Also used for reducing the entire occlusal table (both, functional and nonfunctional cusps) when preparing a tooth to receive a PFZ, a LiDiSi, a monolithic metal or a monolithic zirconia prosthesis.

CLUSTER 5: CINGULUM REDUCTION (2nd Row: Right)

11. CR 2.3

This is a Cingulum Reduction bur with a diameter of 2.3 mm at its widest circumference.

It is used by positioning the bur such that its widest portion sits into the deepest concavity on the palatal/lingual aspect of the tooth being prepared.

Use: For reduction of the lingual fossa when preparing the tooth for a PFZ, a LiDiSi or a PFM facing prosthesis, especially maxillary lateral incisors and mandibular anteriors.

12. CR 2.8

This is a Cingulum Reduction bur with a diameter of 2.8 mm at its widest circumference.

This bur is used following the same protocol as that mentioned for the CR 2.3 bur.

Use: For reduction of the lingual fossa when preparing for a PFM prosthesis, especially maxillary central incisors and maxillary canines.

CLUSTER 6: ALLIED (3rd Row)

13. EC 1.4F

This is an End Cutting Finishing bur with a tip diameter of 1.4 mm.

This bur has diamonds incorporated only at its tip and has a non-cutting shank. The non-cutting shank of the bur allows for it to be used on proximal surfaces of the prepared tooth, without the fear of inadvertent damage to the adjacent teeth.

This bur is to be used with pull strokes only, as a push stroke carries the risk of ploughing/digging the bur into the prepared margin.

Use: For removing irregular/unsupported tooth structure around the prepared margins.

14. IR 2.0

This is a self-limiting Incisal Reduction bur with a working length of 2.0 mm and a tip diameter of 1.0 mm

This bur is used by holding its shank flush with the incisal edge of the tooth and then moving it straight through from the labial into the palatal/ lingual aspect (in one sweeping motion). When used correctly, it leaves a groove that is 2.0 mm deep and 1.0 mm wide.

Use: For preparing depth grooves, when reducing the incisal edge for all types of prosthetic materials.

15. CA 1.6F

This is a Ceramic/ Composite Adjustment bur with a diameter of 1.6 mm at its widest circumference.

The tip of this bur is shaped like a semi-circle (half round) and is to be used for adjusting static occlusal interferences. The remainder of its length is to be used for reducing incline interferences during excursive movements.

Use: For reducing interferences on porcelain crowns and bridges during the occlusal adjustment (bisque) appointment.

16. DC 1.0SS

This is a Super Short Shank bur with a tip diameter of 1.0 mm and a Deep Chamfer tip design.

When used correctly, this bur leaves a 0.5 mm deep chamfer margin. **Use:** For tooth preparation in difficult to access areas of the oral cavity, e.g. distal margin of a maxillary 2nd molar.

CLUSTER 7: PORCELAIN LAMINATE VEENER (4th Row)

17. PLV 0.3

This is a single tier, self-limiting depth gauge bur with a working diameter of 0.3 $\,$ mm.

This bur has a non-cutting shank that extends above and below the working surface. This ensures that depth grooves of 0.3 mm are created, regardless of the labial curvature of the tooth.

Use: To scribe depth grooves when preparing the tooth for Porcelain Laminate Veneers. Ideal for use on the cervical aspect of the tooth where the enamel is thinnest.

18. PLV 0.5

This is also a single tier, self-limiting depth gauge bur with a working diameter of 0.5 mm.

Works on the same principle as that described for the PLV 0.3 bur. It ensures the depth grooves achieved are 0.5 mm deep, regardless of the labial curvature of the tooth.

Use: To scribe depth grooves when preparing Porcelain Laminate Veneers that require comparatively more reduction.

19. DC 1.2EF

This is an Extra Fine Deep Chamfer Polishing bur with a tip diameter of 1.2 mm and is the only yellow ring bur in this kit.

Use: To polish the Porcelain Laminate Veneer preparations.

Close adaptation between the PLV and the underlying tooth structure is extremely important for ensuring long term success with this treatment protocol. A smooth polished surface helps achieve this requirement.

In order for this kit to serve its desired function, it is important that each bur be returned back to its respective slot once used. The Crown, Bridge, Veener preparation kit by MIK Dental is available in 10 different colors (black, blue, grey, green, yellow, red, orange, violet, pink and brown) to fit into the color scheme of your practice.

Tooth preparation burs should be frequently replaced, as a clogged/ dull bur often prompts the operator to apply excessive pressure against the tooth. The combination of heat and increased lateral force is extremely detrimental for the pulp and is a leading cause of irreversible pulpal inflammation and sensitivity following tooth preparation. Such excessive forces may also prematurely damage the handpiece cartridge, often requiring replacement.

The MIK Dental kit is a contemporary and technical approach for achieving consistent tooth preparations for all material categories used in fixed prosthodontics. The use of such a controlled method of reduction (with bur tips of specific designs and diameters) takes the guess work out of tooth preparation, thereby ensuring predictability to the workflow.

BURKAT





CHECKING FOR ADEQUACY OF CLEARANCE ACHIEVED

Although clinicians are aware of the amount of clearance desired, it is routinely difficult to precisely gauge this amount intra-orally. Clinically, occlusal clearance is usually estimated on the basis of visual inspection of the 'space' available between the antagonist teeth when in MIP. This can be extremely subjective, as teeth have cuspal slopes that can obscure the view of lingual/palatal reduction.

A simple, yet effective solution to this problem would be the use of **'PrepGauge'** from MIK Dental. Contact MIK Dental for further information.

Also check out the unique book **"Clinical Fixed Prosthodontics"** by **Dr. Moez I. Khakiani**. It has 23 chapters that are spread over 400 pages with more than 1700 colored illustrations and clinical images. For further details contact **Excel Publication** on +91 9833400664.





+91 8433599800 / +91 9111212912 / +91 9742501587 www.mikdental.com