



## Expert Set | 4573/4573ST



### Expert Set for ceramic crowns.

Based on the successful Expert Set 4562/ST for ceramic inlays and partial crowns, this set is designed for the preparation of crowns allowing for the special requirements of ceramics. Likewise, this set was compiled in cooperation with six renowned experts from dental clinics and practices.

The key instrument contained in this set is figure 856 (tapered round), which is available in different sizes and grit types.

The experts opted for this instrument, as it is perfectly adapted for preparing a distinct chamfer featuring rounded interior angles. Sinking the instrument up to half of its diameter into the tooth creates a distinct chamfer with a 0.8 mm radius, which assures sufficient substance removal and rounded interior angles.

Both aspects are considered major requirements for a successful ceramic preparation. On one hand, the large radius helps to avoid a lip preparation. On the other hand, the large diameter 021 produces smooth surfaces without grooves or scratches, especially during finishing. The ideal amount of substance removed to assure sufficient material thickness is between 1.0 and 1.5 mm. It is therefore sufficient to include instruments with 2 diameters in this set: 021 for larger teeth and 018 for smaller teeth. The instrument is provided with a cone angle of  $2^\circ$ . This allows the creation of a total angle of  $4^\circ$  ( $2 \times 2^\circ$ ) in case of a circular preparation without having to swivel the instrument.

The below recommendations aim to enable the dentist to safely prepare the crown in preparation for a ceramic restoration and to avoid frequently made errors.



## All-ceramic lateral crown\*

1. The instrument 6837KR.314.012 is used to prepare a 1 mm uniform shoulder approx. 0.5 – 1 mm above the future preparation limit.

2. Interdental separation using the instrument 6856.314.012, preparing a thin, proximal enamel wall for the time being. The adjacent tooth can be protected additionally with a steel matrix.

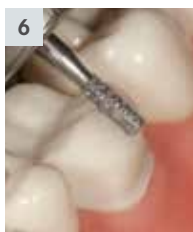
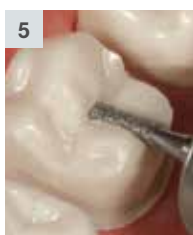
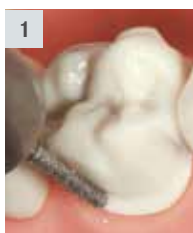
3. Subsequent to the interdental separation, the initial shoulder preparation is carried out using the diamond instrument described under point 1. For the time being, parallel substance removal is carried out by holding the instrument in vertical position.

4. The occlusal view clearly shows the 1 mm sized, circumferential shoulder following the anatomical contour of the root.

5. Reduction of the occlusal surface using the instrument 6836KR.314.014. A minimum substance removal of 1.4 mm can easily be achieved by completely introducing the instrument. An occlusal substance removal of up to 2 mm is possible.

6. With the occlusal reduction, please make sure to prepare a simplified replica of the anatomic cusps. To this end, the instrument described under point 5 is applied to premolars and molars from 4 different directions.

7. To protect the gingiva, it is recommended to place a retraction cord after carrying out the initial preparation.



8. Final shaping of the preparation limit to achieve a chamfer with a 0.8 mm radius. The larger instrument 6856.314.021 is used for easy to access oral and vestibular areas. When using the large instrument (021), please make sure not to damage the adjacent teeth.

9. If the adjacent teeth do not require preparation, it is recommended to first use the thinner instrument 6856.314.018 for creating the chamfer in the interdental areas.

10. Definition of the final preparation limit using the finishing instruments of matching shape, i.e. 8856.314.018 and 021.

11. If there is sufficient interdental space, it is also possible to use the finishing instruments described under point 10. Please make sure not to damage the adjacent teeth.

12. Check the completed preparation for sufficient interocclusal clearance. With all-ceramic restorations, all sharp edges and corners have to be rounded off. Our flexible polishing discs (e.g. the Komet® Compo-Clips®) are especially adapted for this purpose.

## All-ceramic anterior crown\*

1. Interdental separation with the thin instrument 6856.314.012 (tapered round, green ring).

2. Preparation of a 1 mm sized, uniform shoulder approx. 0.5 – 1 mm above the future preparation limit, using the instrument 6837KR.314.012.

3. The occlusal view clearly shows the 1 mm sized, circumferential shoulder following the contour of the root.

4. Reduce the labial surface of the sagittal curve of the crown by 1 mm, using the same instrument as mentioned under point 2.

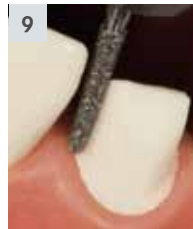
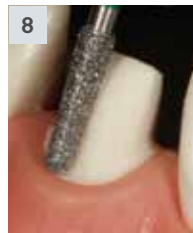
5. Incisal reduction with 6836KR.314.014 (short cylinder with rounded edges, green ring). When completely introducing the instrument, a minimum substance removal of 1.4 mm can easily be achieved. An occlusal substance removal of up to 2 mm is possible.

6. Palatal reduction by at least 1 mm, using the egg shaped instrument 6379.314.023 (green ring).

7. To protect the gingiva, it is recommended to place a retraction cord after carrying out the initial preparation.

8. Final shaping of the preparation limit to achieve a chamfer with a 0.8 mm radius. The larger instrument 6856.314.021 is used for easy to access oral and vestibular areas. When using the large instrument (021), please make sure not to damage the adjacent teeth.

9. If the adjacent teeth do not require preparation, it is recommended to create the chamfer in the interdental areas using the thinner instrument 6856.314.018 first.



10. Definition of the final preparation limit using the finishing instruments of matching shape, i.e. 8856.314.018 and 021.

11. Finishing the palatal surfaces using the eggshaped fine grit instrument 8379.314.023 (red ring).

12. Check if sufficient substance has been removed using a silicone index.

13. Completed preparation. With all-ceramic restorations, all sharp edges and cornes have to be rounded off. Our flexible polishing discs (e. g. the Komet Compo-Clips) are specially adapted for this purpose.

### Speed:

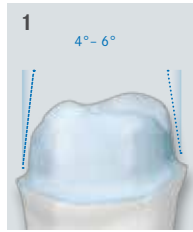
- During preparation:
  - ⌚<sub>opt.</sub> 160.000 rpm, red contra-angle,
  - ⌚<sub>opt.</sub> 20.000 rpm

### \* Note:

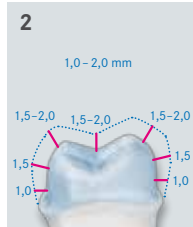
The use of the instruments is shown on a model. It is possible to change the order of the shown preparation steps, according to your personal preference.

**Graphic illustrations of the most important rules to be observed during preparation**

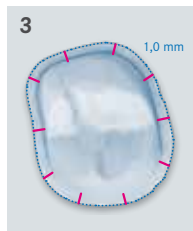
1. Create a stump with a 4 – 6° cone. Round off all the transitions within the preparation, to avoid disadvantageous tensions underneath the restoration material.



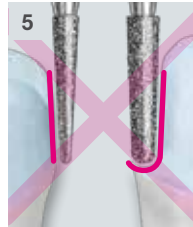
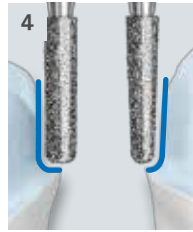
2. If the position of the tooth does not require correction, the outer contour of the crown is reduced by 1.5 mm, the occlusal surface by 1.5 – 2 mm and the margin by at least 1 mm, without mimicking the crown equator.



3. The preparation depth at the edges should be at least 1 mm.



4. A step preparation with rounded inner angles or a pronounced chamfer can be created. The edges of the preparation should be reworked with finishers of a matching shape (red ring).



5. Make sure to avoid tangential, spring edge or lip preparations as they are contraindicated with allceramic restorations. Therefore, exercise special care when using instruments with a round tip and do not introduce them any further than up to half their diameter at maximum! Please note that tangential preparations are technically unfeasible and would result in too thin, i. e. instable and overcontoured, crown margins.






**Set 4573**  
In a plastic instrument tray



**Set 4573ST**  
In a bur block suited for sterilisation

**Content of Set 4573/4573ST**

	
● 6837KR.314.012	● 6836KR.314.014
	
● 6856.314.021	● 8856.314.018
	
● 6856.314.018	● 8856.314.021
	
● 6856.314.012	
	
● 6379.314.023	● 8379.314.023

**Scientific advice:**

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For further information on all-ceramic restorations, see our handy 30 page ring binder 412124 on this subject

