



# Expert Set | 4562/4562ST

Expert Set for ceramic inlays and partial crowns

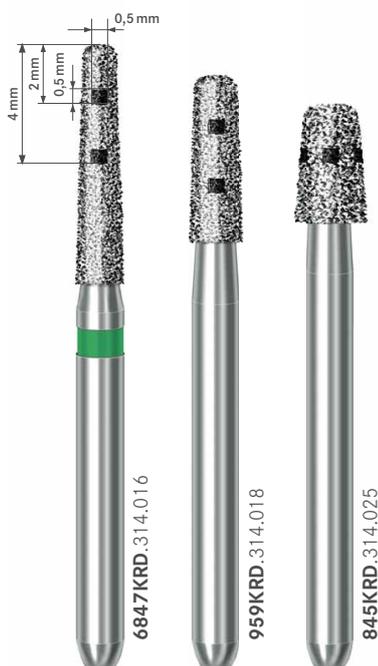


The Set 4562 was compiled in close cooperation with six renowned experts from dental clinics and practices with a view to simplifying and systemising the precise shaping of cavities prior to receiving ceramic inlays and partial crowns. The set contains, among other instruments, three newly developed tools which are provided with a depth mark (to be recognised by the letter “D” standing for “depth” in the reference number) in order to guarantee the required minimum occlusal thickness of ceramic restorations.

More and more patients directly ask for a ceramic restoration. What is important though is that all requirements for a successful ceramic reconstruction are already considered during the preparative stages (“think ceramic!”). Premature loss of a ceramic restoration is often due to insufficient depth of the cavity or non-observance of the minimum thickness of the layers.

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

Ceramic restorations have been scientifically recognised for a long time and enjoy great popularity because they are free of metal and give an aesthetically pleasing result.

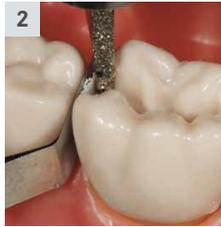


**Use of the instruments  
(shown on a model)**

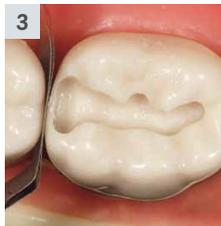
1. Open the cavity with a tapered diamond instrument with coarse grit and rounded edges (6847KRD.314.015, green ring). The depth marks at 2 and 4 mm help to guarantee the required minimum thickness of the ceramic underneath the fissure.



2. The same instrument is then used to create a proximal box. The proximal enamel wall remains intact for the time being. The adjacent tooth can be protected with a steel matrix.



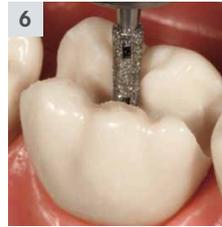
3. View from occlusal: The interproximal enamel wall is still intact.



4. A thin, flame-shaped instrument with fine grit (8862.314.012, red ring) is used to remove the proximal enamel. In this step, the enamel wall is removed. Make sure not to create a spring edge.



5. Use a finishing instrument (8847KR.314.016, red ring) whose shape corresponds to that of the diamond instrument described under point 1 to smoothen the inner walls and the floor of the box.



6. Depending on the size of the cavity, 2 shorter, tapered instruments with rounded edges can be used to shape the cavity as required: 959KRD.314.018 (see photograph) and 845KRD.314.025. Both instruments are provided with depth marks, either at 2 and 4 mm (in case of the 959KRD) or at 2 mm (845KRD).

**Hint:**

We recommend our sonic tips SFM7 and SFD7 for shaping the interproximal cavity margin.

7. Two instruments of matching shape with fine grit are available for subsequent finishing: 8959KR.314.018 and 8845KR.314.025. Both instruments are provided with a red ring. The tapered instrument should be tilted in oro-vestibular direction in order to increase the opening angle in occlusal direction.

**4 arguments in favour of Komet® tips**

- ❶ optimised diamond coating (60 µm instead of 40 µm) to facilitate shaping and finishing
- ❷ the shape is adapted to modern ceramic inlays (instead of the previously used ceramin inserts) and guarantees plane lateral surfaces and rounded transitions
- ❸ more axial depth to improve the shaping of the buccal and lingual surfaces of the interproximal box as well as the floor of the box
- ❹ the tip is available in 2 sizes to suit molars and premolars



**Further information on our website:**



Video "Reprocessing rules for ceramic inlays and partial crowns"

8. Use a thicker flame-shaped finisher (8862.314.016) to give the edges of the box a concave shape. The instrument should be pulled from apical in occlusal direction. The concave contour in the dental substance is automatically created by the convex tip of the instrument. The opening angle should be enlarged in occlusal direction. Make sure to create an open rather than an excessively steep preparation. Again, do not create a spring edge. The transitions between the cavity floor and the box must be rounded.



9. The cavity underneath the fissure can be further deepened with a ball shaped instrument with normal grit (801.314.023), if necessary.



10. The cusps are shortened horizontally with the conical instrument 959KRD.314.018 (see photograph). The instrument can also be used horizontally. Its diameter of 1.8 mm (1.4 mm at the tip) is an ideal dimension to ensure sufficient reduction.



11. Use the egg shaped instrument with fine grit 8379.314.023 (red ring) to round off all inner edges.

12. The same instrument can be used to slightly round all horizontal outer edges. Round off all edges within the preparation to avoid leaving any sharp transitions.



13. Round off any remaining corners and edges in hard-to-reach areas with the thin, flame shaped finisher 8862.314.012 (red ring) as per fig. 4. Round off any sharp transitions at contour of the preparation margin. Make sure not to create a spring edge!



#### Speed:

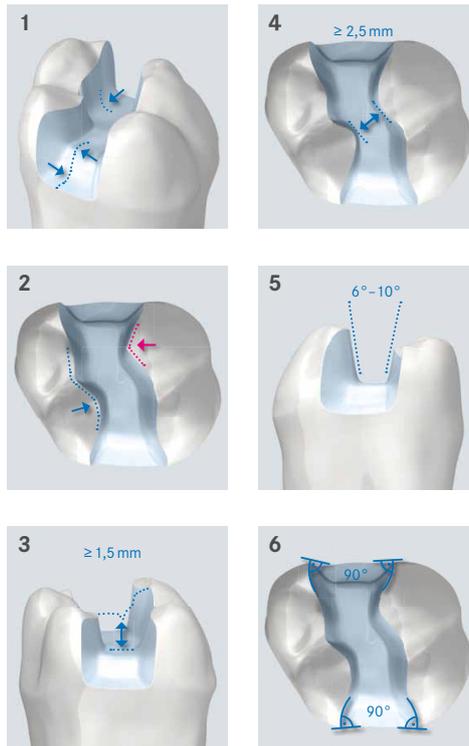
- During preparation:
  - ⌚<sub>opt.</sub> 160.000 rpm red contra-angle
- During finishing: ⌚<sub>opt.</sub> 20.000 rpm

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

1. Round off the transitions between the floor and the walls of the cavity as well as all angles within the cavity.

2. Check the contour of the preparation from occlusal to exclude any sharp edges. The inlays are ground from the outside to exactly match the shape of the cavity. The bur used to grind the inlay is unable to recreate such sharp edges, which would lead to undesirable gaps between the inlay and the cavity wall.

3. When creating the fissure, make sure that a minimum occlusal depth of 1.5 mm is observed even underneath the fissure. You can deepen the cavity floor with a round bur.

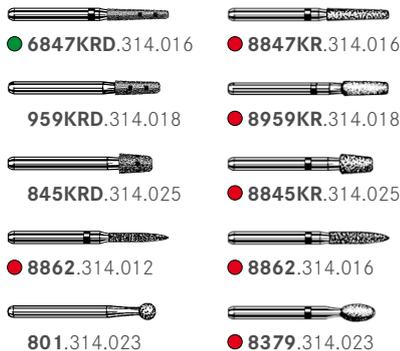


4. To avoid fracture of the inlay, make sure that a width of at least 2,5 mm is observed even at its thinnest point (isthmus).

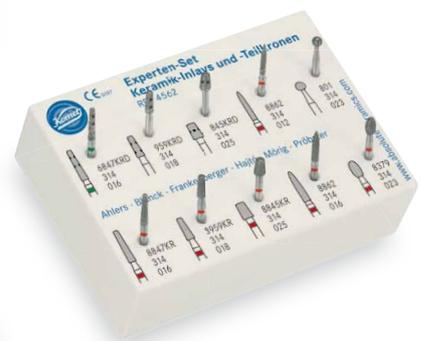
5. Work in diverging manner rather than in a parallel manner. The recommended opening angle of the cavity walls is 6° - 10°. The adhesive fixation eliminates the need for any other type of retention.

6. The surface angle at the transition between the cavity and the surface of the tooth should be approx. 90°, to give the ceramic and the dental substance increased stability. Protect the neighbouring tooth with a steel matrix. Give the proximal edges a slightly concave shape by means of a flame-shaped instrument which should always be used on the sides of the box, never on its floor. Oscillating instruments are equally suitable for shaping the walls of the box.

**Content of Set 4562/4562ST**



**Set 4562ST**  
In a bur block suitable for sterilisation



**Set 4562**  
In a plastic instrument tray

**Scientific advice:**

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

