

Figure 1. Prefabricated plastic attachments: Dent Attach V (vertical)

Milling technique: Dentures without clasps

Part 5: Plastic attachments

By Frieder Galura



“The general opinion that extra-coronal attachments cause a higher leverage upon the support teeth than the intra-coronal ones is incorrect. In case of a free-end denture with joined attachments, the influence of leverage to the root is the same with both types of attachments...”

Extra-coronal plastic attachments such as Dent Attach V (Dentaurum) are a highly economical option amongst the range of prefabricated attachments available (Figure 1).

They are simple to process, easy to replace and have a “comfortable“ friction when the patient is handling a denture with them included.

The general opinion that extra-coronal attachments cause a higher leverage upon the support teeth than the intra-coronal ones is incorrect. In case of a free-end denture with joined attachments, the influence of leverage to the root is the same with both types of attachments.

The male parts are prefabricated according to the shape of the ridge of the jaw at 45 degrees (Figure 2) and 90 degrees (Figure 3). After surveying the path of insertion, the males are parallel attached at the wax-crowns (Figure 4).

For stability reasons, it is recommended to process the DA-attachments in connection with shoulder attachments. Before the wax-milling, the crowns should be waxed-up fully anatomically in order to achieve a better integration of the shoulder attachments into the shape of the crown.

After casting with remanium® star (Dentaurum), a milling base is fabricated (Figure 5) for the milling of the primary parts (refer to Part 3: Telescopic crowns, eLABORATE Jan/Feb 2008).

Before duplication, the attachments are pushed together (Figure 6) and the females are covered with a spacer laquer (Figure 7) in order to avoid too tight a sleeve-housing after casting.

For an easier removal out of the silicone-mould, the master cast is sprayed with a separating agent (Figure 8). rema@Sil is highly suitable for the duplication of precision works as it has an excellent elastic

recovery due to its low Shore-hardness (9-10).

There is no need to keep a set waiting time after the removal of the master cast. Moreover, the chemical expansion of the investment material is not retarded during the normal setting time.

The base-thickness of the refractory model should be a minimum of 15mm for a sufficient expansion in the area of the transversal connector, which is a precondition for a gap-free fit of the latter after the cast.

Before pouring the flask with investment material such as rema@dynamic S (Dentaurum), the surface tension is reduced with Lubrofilm (Figures 9 and 10).

After fabricating the refractory model and allowing sufficient drying time, the borderline of the transversal bar and the shoulder attachments are signed (Figure 11). It follows the wax-up (Figure 12) and the spruing (Figure 13).

A sufficient thickness of the transversal connector (approx. 0.8mm) should be considered. Figure 14 shows the denture with inserted females already cast with remanium® GM 800+ (Dentaurum) and Figure 15 shows the finished work.

This series will continue in the next edition with Part 6: Bars.

About the author

Frieder Galura was trained as a dental technician at the University Dental Hospital in Heidelberg, Germany. He has worked in many dental practices and labs in Germany, concentrating on ceramics, milling work and attachment techniques. He commenced working for Dentaurum as dental technician in the prosthetic department in 2002 and has lectured and run training programmes for them both in Germany and throughout the world. Since 1995, he has been widely published in Germany, France, Spain, Italy and Japan.



Figure 2. D.A. - male attachment 45°.



Figure 3. D.A. - male attachment 90°.



Figure 4. Wax-milling.



Figure 5. Primary crowns after casting with remanium® star on the milling base.



Figure 6. Shoulder-attachment crowns with female sleeves.



Figure 7. Preparation for duplication with female sleeves covered with spacer laquer.



Figure 8. Plastic flask for silicone duplication with separating agent Septisol.



Figure 9. Silicone duplication with rema®Sil and surface tension reducing agent Lubrofilm.



Figure 10. Investment material rema®dynamic S for cast partial dentures.



Figure 11. Refractory model with design of the transversal bar.



Figure 12. Wax-up of the cast partial denture and the shoulder attachments.



Figure 13. Spruing.

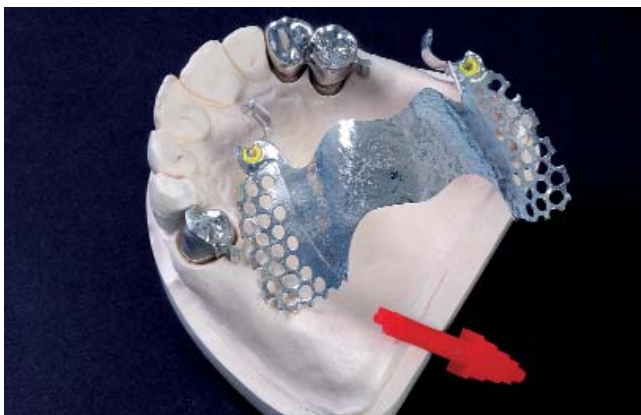


Figure 14. Cast partial denture after casting with remanium® GM 800+ with inserted female sleeves.



Figure 15. Finished Dent Attach-denture.