

HADER VERTICAL

Summary

- Extracoronary semi-precision attachment.
- Very slight hinging motion makes it functionally compatible with clasp retainers on the contralateral side of the arch.
- Vertical resiliency may be achieved by recontouring the occlusal of the males.
- Loads abutment tooth more strongly than other resilient attachments.
- Nylon clip and plastic pattern male.
- Choice of color coded clips for three retentive strengths; lightest to strongest: white, yellow, red.
- Male may be contoured to the ridge (light tissue contact).
- Requires only vertical parallelism.

Fixation: Male - cast as part of crown pattern.

Clip - frictionally held in removable partial denture framework.

Cast plastic male using alloys with a minimum Vickers hardness of 200 and at least 85,000 psi ultimate tensile strength. Appropriate choices are Pegasus ceramic alloy and Sterngold 100 crown and bridge alloy for yellow gold castings.

Minimum Space Required:

Height	FC width	Prep depth	RC width
4.8mm	1.8mm	Normal crown	5.0mm

Indications

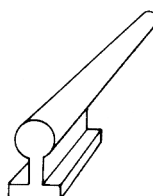
- Bilateral distal extension removable partial dentures with more resiliency than an intracoronary attachment, such as the Stern Latch, and less than a resilient attachment like the Dalbo or Stern ERA.
- Bounded removable partial dentures.

Contraindications

- Cases requiring a non-resilient connector.
- Insufficient arch space.

ATTACHMENT DESCRIPTION

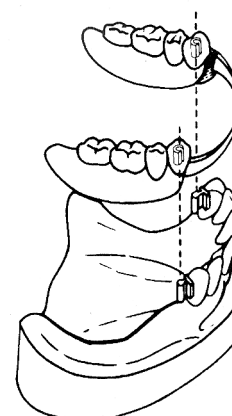
Tissue resilient with vertical freedom



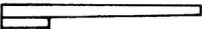



Plastic male with attached mandrel



Nylon female



Order Number	Type	Scale	Width	Height
1:1				
810003	Female Clip, white		1.8mm	5.0mm
810018	Female Clip, yellow		1.8mm	5.0mm
810007	Female Clip, red		1.8mm	5.0mm
810055	Male		1.8mm	6.0mm
	Male			

Order Numbers:

Item	Number
Kit contains 6 males, 6 females, 1 seating tool	810040
Seating tool	810042

Clip Color Code

White	light retention
Yellow	moderate retention
Red	heavy retention

FABRICATION INSTRUCTIONS

1. Prepare the abutments for full coverage retainer crowns.
2. Make an accurate full arch impression.
3. Prepare the master model and dies (Fig. 1).
4. Wax full coverage crown patterns (Fig. 2).
5. Determine the position of the males on the master cast. Males must be vertically parallel and should be positioned over the crest of the ridge (Fig. 3).
6. Place the males in a surveyor and position them on the master model (Fig. 4). The male is 6.0mm in vertical height but can be reduced at the gingival to 3.5mm for short interocclusal distances. Reduce the vertical height only when necessary as this will reduce the degree of retention of the prosthesis. The female is also reduced to an equal height.

The gingival portion of the male may be contoured to accommodate the papilla. Contouring or reduction is accomplished easiest with a sharp instrument (Fig. 5).

7. Parallel the males and lute them to the waxed abutments. Do not reduce the proximal plate of the male. Contour the male proximal plate into the crown. This will aid in stability of the prosthesis (Fig. 6). Reduction of any excess of the proximal plate is completed after casting.



Fig. 1



Fig. 2

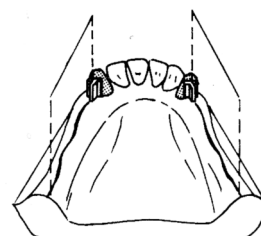


Fig. 3

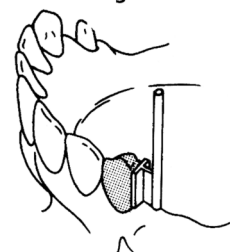


Fig. 4



Fig. 5

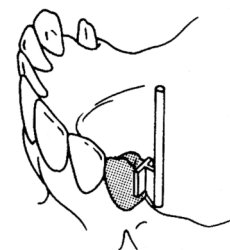


Fig. 6

8. Remove the paralleling mandrels from males. Use a disk or sharp instrument.
9. Sprue the crown and the male attachment (Fig. 7).
10. Invest and cast the patterns in the alloy of choice. Burnout for plastic components requires two stages: 1. Slow rate of temperature rise to 600°F (316°C) and hold for 30 minutes. This assures a clean and complete burnout of the plastic piece.
2. Complete the burnout procedure by following your alloy manufacturer's instructions.

Note: Cast using a hard alloy. Minimum Vickers hardness of 200 and at least 85,000 psi ultimate tensile strength. Appropriate choices are Pegasus ceramic alloy and Sterngold 100 crown and bridge alloy for yellow gold castings.

11. Finish the cast crown and attachment males. It is important to obtain a good polish without reducing the size and shape of the male. Caution should be exercised not to alter the dimensions of the male during finishing. The gingival surface of the male may be contoured for light tissue contact and maintenance of good oral hygiene.
12. Complete veneering. Apply veneer material up to, but not on, the proximal plate of the male attachment. Any veneer material on the proximal plate will interfere with proper seating of the female.
13. Seat the finished retainer crowns on the master model.
14. Place nylon clip over the male (Fig. 8).
15. Prepare the model for refractory duplication - blocking out undercuts in the gingival area of the male. The blockout should extend approximately 2mm around the attachment (Fig. 9). This blockout will prevent potential tissue impingement by the metal framework during function.
16. Take an impression of the master model and pour the refractory cast. A silicone duplicating material is recommended for best accuracy.
17. Design and wax the partial denture framework on the refractory model. Wax a "cover" completely over and around the representation of the male and female on the refractory model (Fig. 10).
18. Sprue, invest and cast the partial denture framework in the alloy of choice. Finish the cast framework.
19. Insert nylon clips into the receptacles created in the framework (Fig. 11).
20. Seat the framework and clips over the males on the master model (Fig. 12). The retainer crowns and framework may be tried in at this time. An alternative is to complete the prosthesis prior to try in.

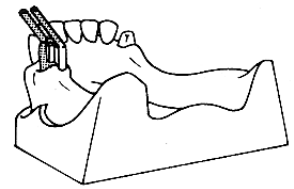


Fig. 7

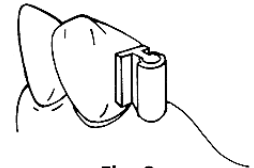


Fig. 8

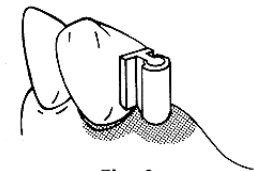


Fig. 9

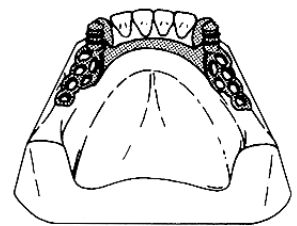


Fig. 10

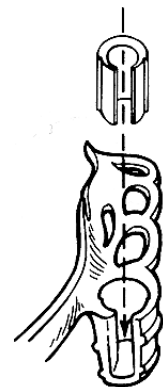


Fig. 11

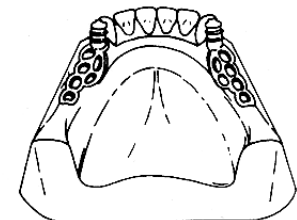


Fig. 12

21. The removable partial denture is processed and finished in the technique of choice. Remove the nylon clips prior to processing. Be sure the clips are then reinserted in the partial denture. The clip receptacles of the framework should be blocked out with Rubber Sep during processing.
22. For resilient application, the dentist should complete the intraoral equilibration. After this is completed, vertical freedom may be achieved by reducing the occlusal end of the male 0.3 to 0.5 of a millimeter.

SERVICING

Rebasing:

1. Rebasing may be accomplished utilizing standard techniques for a non-resilient prosthesis.
2. If the operator has reduced the occlusal end of the male to create vertical freedom, layers of metal foil should be placed inside the female. These will act as a shim to bring the prosthesis to its original passive position prior to making a wash impression. All further steps should be done as with a standard rebasing technique.



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