

# HADER BAR®

## Summary

- Semi-precision bar attachment.
- Hinging movement, if a straight bar is placed perpendicular to the sagittal plane.
- Plastic bar pattern, nylon riders.
- Bar extension is adaptable to patient's alveolar contour.
- Mechanical snap retention.
- Three color-coded riders for three retentive strengths lightest to strongest – white, yellow, red. Can be used with or without the Hader metal housing.
- Optional adjustable gold alloy rider.

Fixation: Bar - pattern cast as part of retainer castings.  
 Nylon rider - retained in processed denture acrylic socket, optional metal housing available.  
 Gold rider - polymerized into denture acrylic.

Cast the bar pattern using alloys with a minimum Vickers hardness of 200 and at least 95,000 psi ultimate tensile strength. Appropriate choices are Pegasus ceramic alloy and Sterngold I 00 crown and bridge alloy for yellow gold castings.

Minimum Space Required:				
	Height <sup>+</sup>	FC width	FC Height	RC width
Nylon rider	4.5mm	1.8mm	2.5mm	5.0mm
Gold rider	4.5mm	1.8mm	2.5mm	5.0mm

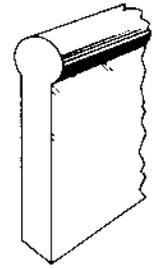
+Add 1.0mm for patients with habitually strong bites.  
 Hader Housing actual dimensions:  
 Thickness, 0.3mm  
 Width wing edge to wing edge, 5.0mm  
 Length, 5.0mm

## Indications

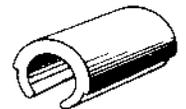
- Overdentures: splint non-vital roots, natural abutment teeth or implants.
- Partial dentures: splint across anterior and posterior tooth bounded spaces.

## Contraindications

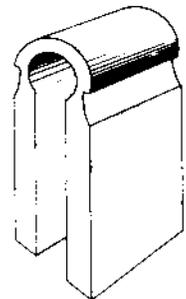
- Insufficient space for placement of the attachment and denture teeth.
- Inadequate periodontal support.
- Patient unable to meet the oral hygiene requirements of a bar restoration.



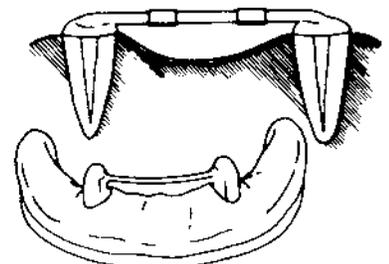
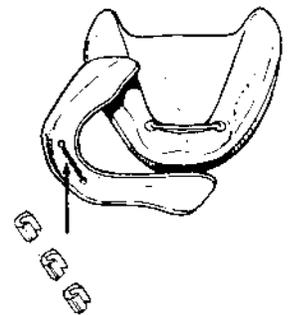
Male bar pattern in plastic



Female rider in plastic



Fabricating rider in plastic



## ATTACHMENT DESCRIPTION

The round portion of the Hader Bar is 1.8mm in diameter, which is equivalent to 13 gauge.

Component	Scale 1:1	Length	Height
Nylon riders		5.0mm	2.6mm
Plastic bar and extension		50.0mm	8.2mm

Rider Color Code:	
White	light retention
Yellow	moderate retention
Red	heavy retention

## Order Numbers

Item	Number	
Bars only, 6	810015	
Nylon retention riders, 6 per pkg.		
White	810003	
Yellow	810005	
Red	810007	
Fabricating riders, 6 per pkg.	810010	
Metal housings, 6 per pkg.	810058	
Gold alloy rider with spacer	801364	

## TOOLS LIST

Item	Number
Hader Bar kit	810001
<i>2 bars, 6 yellow clips, 6 fabricating clips, 1 seating tool.</i>	

## Kits

Item	Number
Seating tool 	810025

## FABRICATION INSTRUCTIONS

### Overdenture Procedures

1. Conventional abutment preparations are completed for post and root cap copings, long copings, full coverage crowns, or implant abutments.
2. A full arch impression is made.
3. The models and dies are prepared.
4. The abutment patterns for copings or crowns are waxed.

Note: If you are connecting implants, then gold cylinders or gold UCLA type abutments are strongly recommended. Their superior fit over plastic components will mean less screw loosening and breakage.

5. The plastic bar pattern may be adapted to anterior-posterior curvature by cutting it into sections and waxing the pieces together. The bar is cut to appropriate length. The gingival extension of the bar is reduced to proper height and approximate gingival contour. For best force distribution, a low profile of the bar should be used.

The nylon retention riders should be placed on the bar, positioned on the model, and checked against the opposing model on an articulator. Be sure there is adequate vertical space for the denture teeth. If not, further reduce the bar. The bar may be reduced to 2.5mm and the nylon rider extends occlusally 0.9mm (Fig. 1).

6. The riders are removed from the bar pattern. The bar pattern is waxed directly to the abutment copings, crowns, or implant abutments.
7. The bar and copings, crowns, or implant abutments are sprued. The sprues should always be placed on the connecting points of the bar. The bar may be cast separately and soldered to the cast retainers.
8. The casting is completed and finished. 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.

Cast the bar pattern using alloys with a minimum Vickers hardness of 200 and at least 95,000 psi ultimate tensile strength. Appropriate choices are Pegasus ceramic alloy and Sterngold 100 crown and bridge alloy for yellow gold castings.

Do not grind the round bar with stones, burs, or rubber wheels. This will reduce the bar diameter and alter the fit and retention of the riders. Finish with polishing compound or with Tripoli and rouge.

9. The cast retainers and bar should be tried in the mouth.

Note: If a removable die model was used for fabricating the bar, or if the bar has to be cut and soldered, then a new impression should be made picking up the bar and retainers. A new, solid master model is fabricated from this impression.

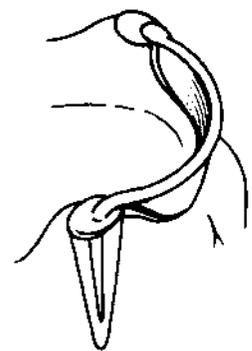


Fig. 1

- The cast retainers and bar are returned to the master model. The plastic riders are placed in the proper positions on the bar. Position as many nylon retention riders on the bar as space allows. This will provide space for additional riders to be inserted to increase retention if necessary. (Fig. 2)

The undercuts of the bar are blocked out with Rubber Sep (order no. 812045). Also block out over the copings or implant abutments with Rubber Sep. Be careful not to block out the retentive undercuts of the riders. (Fig. 3 & 4)

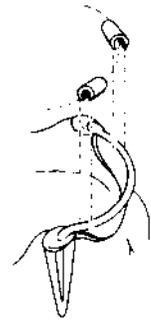


Fig. 2

- An impression is taken of the master model with the riders in position. (Fig. 5 & 6)
- The fabricating riders are positioned in the impression (Fig. 7) and a duplicate processing model poured. The fabricating riders will be held in proper position in the duplicate model by the extensions of the riders in the stone. (Fig. 8)

Note: Do not try to shorten these extensions and place the fabricating riders on the bar. The fabricating riders do not properly fit on the bar and will create retention spaces in the denture base which are too large. When the patient removes the overdenture the nylon riders will tend to be pulled out of the denture base and remain on the bar.

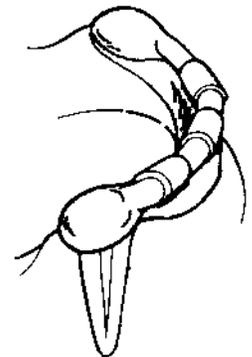


Fig. 3

If metal housings are used, slide them onto the fabricating riders from the end after recovery of the duplicate model. Do not snap the metal housings onto the fabricating riders from the occlusal. This may deform the housings causing the final riders to pull out of the denture.

- The set up is completed and tried in. The prosthesis is then processed in the technique of choice. (Fig. 9)
- All stone is removed. The fabricating riders are removed with pliers or a hemostat. (Fig. 10)
- The Hader nylon retention riders are pressed into the prepared receptacles in the resin, or into the metal housings. The riders fit the receptacles and a snap is often felt or heard. (Fig. 11 & 12) This insertion of the nylon riders is accomplished with the aid of the special seating tool supplied with each kit. (Fig. 11) The riders are easily seated and can be easily replaced. The special shape of the receptacle provides secure retention of the rider while providing a space labially and lingually to allow flexing of the rider during insertion or removal of the prosthesis. (Fig. 13 & 14)

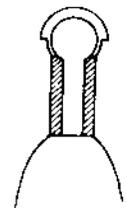


Fig. 4

### Partial Denture Procedures

The Hader Bar may be used very successfully in many partial denture applications:

To splint anterior abutments in combination with attachments on the distal abutments for free-end application -



Fig. 5

- Same as Overdenture Procedures section.

- Parallel the attachments on the distal abutments. Visually parallel the Hader Bar to the path of insertion of the distal attachments. (Fig. 15) If the attachments on the distal abutments are resilient, they should allow both hinge and vertical movement to prevent potential dislodgement of the riders from the bar. Examples are ERA, Dalbo, and Octolink attachments. (Fig. 16)



Fig. 6



8. The abutments, patterns and attachments are sprued. Consideration should be given to making separate sections rather than a total one piece casting. If it is determined to have all abutments sprued, fixed bridgework attachments may be utilized between the abutments.(i.e. Interlock, Beyeler, or Tube Lock) Should one abutment fail at a future date, a segment could be independently removed and serviced rather than removing all cast abutment restorations.



**Fig. 7**

9-10. Same as 8 and 9 of Overdenture Procedures section.

11. All cast abutments with bar and attachments are returned to the master model. The nylon retention riders are placed on the bar as in Step #10 of the Overdenture section. If non-resilient attachments are used on the distal abutments (e.g. Stern Latch and McCollum), males should be positioned in the corresponding females in the cast retainer crowns. The attachment parts are luted together with sticky wax.



**Fig. 8**

12. An impression is taken, a refractory model poured and the partial framework waxed, cast and finished. Metal should always be extended over the bar to provide reinforcement of the resin of the removable prosthesis. The nylon riders may be retained in the resin, in Hader metal housings, or the cast metal framework.



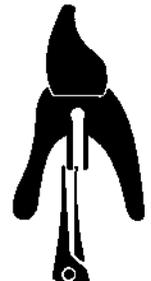
**Fig. 9**

13. The partial denture framework is returned to the master model. The framework and attachments are positioned and luted together. Attachments are now soldered to the framework or are permanently connected to the framework with acrylic resin only. (Follow the individual attachment recommendations.)

14. Fabricate a processing model:

Place as many nylon retention riders on the bar as will fit. See step #10 in the Overdenture section. Block out the undercuts (See Fig. 4).

15. Make an impression of the master model - draw off the cast framework in the impression.



**Fig. 10**

16. Make provision in the processing model for the partial denture attachments. In the case of intracoronal attachments (i.e., Stern Latch) place a female or processing jig over the male. When the model is recovered from the impression it will have an attachment female or jig embedded in it. In the case of extracoronal attachments (i.e. ERA, Dalbo) use a processing jig, or the appropriate attachment component.

Place a fabricating rider into the impression site of each nylon retention rider.

Pour the model. The prosthesis is processed on this model. You may forego fabrication of this processing model and process the case on the master model. However, recovery of the partial denture will destroy the master model.

17. Apply Rubber Sep to the junction of the male and female components of precision partial denture attachments.



**Fig. 11**

18-20. Same as Steps 13-15 of the Overdenture Procedures section.



**Fig. 12**



## Implant Procedures

1. Implants are placed where indicated. (Fig. 17)
2. An impression is taken.
3. The models are prepared.
4. Wax patterns around the abutments, cylinders, or posts. Gold cylinders or other manufactured metal abutments are highly recommended. Their superior fit over plastic casting patterns will assure fewer problems with screw loosening.
5. Sections of the Hader plastic bar pattern are cut to appropriate length and height to be placed between any or all of the wax coping patterns. (Fig. 18) Follow steps 6-15 of Overdenture Procedure section.

## SERVICING

### Rebasing

Note: Do not use fabricating riders in the mouth!

1. The "wash" impression is taken with the existing nylon retention riders in place. The riders must engage the bar completely.
2. Remove the existing nylon riders and replace with fabricating riders and pour model for the rebase processing.
3. Lubricate the occlusal of the prosthesis and pour a counter model, or invest.
4. Process using standard rebase procedures.
5. Same as Steps 14 & 15 or the Overdenture Section.

### OPTIONAL USE OF GOLD ALLOY RIDERS

The gold alloy metal riders fit 13 gauge bars and can be used with the Hader Bar. (Fig. 19)

1. The abutments and bar are waxed, invested and cast. Select a hard alloy to eliminate premature wear.
2. Cast and finished metal components are returned to the master model. Block out all undercuts, make an impression, and pour a processing model.
3. The spacer and metal riders are placed on the stone representation of the bar. (Fig. 20 and 21)
4. All undercuts are blocked out being sure to have the block out material (i.e. Rubber Sep) cover 1/2 of the cylindrical portion of the riders. This will provide a space between resin and the rider to facilitate adjustment of retention and easy insertion and removal of the prosthesis.
5. Complete the set up, waxing, processing and finishing of the prosthesis. Finish the resin around the riders carefully, being careful not to let burs grind on the riders. The metal riders may be picked up in self-curing resin in the prosthesis.



Fig. 13



Fig. 14

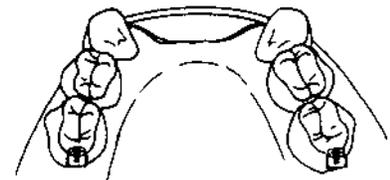


Fig. 15

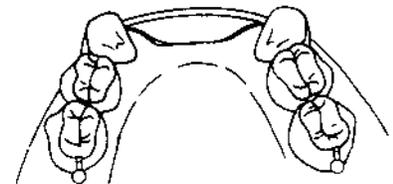


Fig. 16



Fig. 17

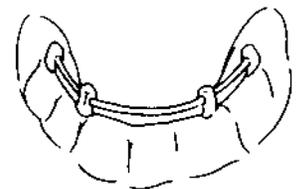


Fig. 18

## TROUBLESHOOTING

Problem	Possible Cause	Solution
Failure of abutments and bar to be a complete casting.	Plastic bar pattern was not adhered well to the abutment wax patterns or broke loose during investing.	Use adequate wax to adhere plastic bar pattern to abutment wax patterns. Invest carefully without excessive vibration.
Failure of nylon riders to stay in receptacle in the resin.	The fabricating riders were placed over the bar prior to taking the impression rather than the nylon retention riders. This causes the gingival extension of the fabricating riders to expand and cause an oversize receptacle to be processed in the resin.	Position the nylon retention riders, NOT the fabricating riders, on the cast bar prior to taking the impression for the processing model.
Insufficient retention of the nylon riders on the bar.	a) The round bar was reduced in size due to over finishing.  b) The nylon riders are worn.	a) Do not use stones or rubber wheels on the round bar when finishing. Polish only.  b) Replace plastic riders, or use gold alloy riders that have retention adjustment capability.
The prosthesis is difficult to insert and remove.	a) The nylon retention riders have been processed into the resin incorrectly. The denture acrylic is preventing the flanges of the riders from flexing.  b) The prosthesis was designed to engage a severe labial undercut. This causes the prosthesis to be positioned labially at time of insertion thus the nylon riders are not properly aligned to snap onto the bar.	a) Use rebasing procedure to replace riders.  b) Remove the labial flange area which engages the severe undercut from the prosthesis.

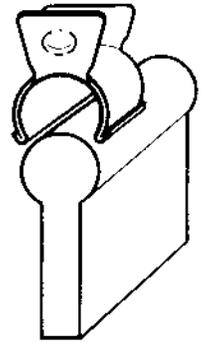


Fig. 19

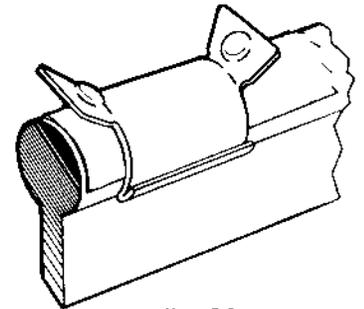


Fig. 20



Fig. 21

*Hader Bar is a registered trademark of Sterngold-ImplaMed.*



**Order online at [www.sterngold.com](http://www.sterngold.com)**

23 Frank Mossberg Drive • P.O. Box 2967 Attleboro, MA 02703  
Tel: (508) 226-5660 • (800) 243-9942 • Fax: (800) 531-2685

3.6-8

