Preliminary and Initial Attachment Procedures

**Phase 1:** Always refer to the *Preliminary and Initial Attachments Procedures,* page 8. Only this will guarantee a successful restoration.

The following procedures are for endodontically treated teeth with root copings connected by a bar. The overdenture utilizes plastic Hader-EDS clips with the machined metal Hader-EDS Housings. This design has proven to be the most successful and lowest maintenance overdenture restoration for the patient and the professional. Procedures for three types of bars are provided—note the bar icons: Green for the plastic bar, gold for the gold bar and gray for the titanium bar.

**Phase 2:** CLINICAL — Tooth Preparation & Impression

1. See Endodontic Posts Preparation and Impression (Moser Post Pg. 35)

**Phase 3:** TECHNICAL — Model Fabrication

1. Review the prescription, impression. Check that the castable posts are enclosed.
2. Pour the impression, pin the models, trim the dies, and mount the casts.

**Phase 4:** TECHNICAL — Bar Fabrication — 3 OPTIONS

1. **OPTION 1:** Plastic Bars
   1. Wax the root copings with the plastic Moser Posts in place. Fabricate a matrix or index of the TSU (Temporary Set-Up) (A). Use the matrix from the buccal or lingual as a guide to position the bars to prevent overcontouring the restoration (B). Whenever possible, the bars should be positioned in straight sections, not bent in a curve (C, D, E). The plastic Hader-EDS bar can be shortened from the gingival aspect if there is not enough occlusal clearance. Do not reduce beyond the round section.
   2. Wax the plastic bars directly to the copings. Do not connect the sprue to the bar. Sprue to the copings.
   3. Invest, cast and finish the coping/bar assembly. A hard alloy should be used.

2. **OPTION 2:** Gold Bars (Soldering & Laser Welding)
   1. Wax the root copings with the plastic Moser Post in place. Contour coping for solder joint with Hader-EDS gold bar.
   2. Invest cast and finish the copings.
   3. Cut the gold Hader-EDS bar and use the TSU with the matrix to determine the correct placement. This prior planning will result in better esthetics and comfort for the patient. (A, B)
   4. Lute the bar with pattern resin to the coping. The bar can be adjusted from the gingival area. Do not modify the round section.
   5. Remove the bar and coping assembly and place in soldering investment. Use minimum amount of soldering investment. Excessive investment requires excessive heat which could damage the gold bar.
   6. Burn out resin. Use 650 or lower temperature gold solder. Solder and allow to bench cool. The Hader-EDS bar is made of Elitor Alloy and is self-hardening. (Melting Range: 1650-1795 F) The Gold Hader-EDS bar can also be Laser Welded to the copings. Follow Laser Welding instructions from the manufacturer.
   7. Finish coping bar assembly.

   **Note:** If the roots are divergent, a custom made screw bloc design is required with the bar segment fabricated in 2 or more units. (F)

**procedures continued next page**
Hader-EDS Bar System

**OPTION 3: Titanium Bars (Laser Welding)**

1. Wax, invest and cast copings in titanium.
2. Deflask and finish copings.
3. Laser Weld the titanium bar to the titanium copings.
4. Follow Laser Welding instruction from the manufacturer of the Laser Welding unit.

**Phase 5: TECHNICAL — Soldering Gold Bar to Porcelain Crowns**

*Note:* If you plan to connect a gold Hader-EDS bar to porcelain crowns make sure you follow the primary and initial procedures.

1. After the porcelain crowns have been made, cut the gold bar to the length and height required. Verify the position of the bar utilizing the TSU and matrix as a guide. (This is especially critical for patient removable anterior bridgework.) (A, B)
2. Wax the bar to the crowns (G). Make a plaster occlusal index of the crowns and bar assembly (H). Remove index and crowns from the master model. Insert crowns and bar into the plaster index and apply pink wax over the porcelain and into the soldering joints (J). Crowns and bar should fit index freely with no resistance.
3. Invest the crown bar assembly in soldering investment. Do not over invest (K). Boil out soldering block and index should come off freely. Dry-out the investment, add some flux and a small amount of solder to the assembly. Bring it up to melting temperature of the solder under vacuum, hold it for 30 seconds and relieve vacuum. Remove assembly from the oven. Let it cool, the Hader-EDS gold bar is self-hardening. We recommended that you consult with the porcelain and alloy manufacturers if you are not sure what soldering temperatures should be used.

**Phase 6: CLINICAL — Try-in of Coping Bar Assembly**

1. Try in the copings or copings/bar and the TSU.
2. Make any necessary adjustments.
3. If the assembly does not fit passively, cut it close to the coping. Use a slim disk.
4. Request the patient’s approval of the final TSU.
5. Return the master model and the TSU to the technician as well as any written information regarding changes.

**Phase 7: TECHNICAL — Processing Clips with Housing**

*Note:* The Hader-EDS metal housings are processed into the acrylic using a final plastic clip. Do not use the metal housings with the fabricating clips.

1. After soldering and finishing the coping/bar assembly, place the assembly back on the model.
2. Place the final clips into the metal housings and seat over the bar. (L)
3. Seal the set-up on the model. If it will not fit remove wax around the area of the bar and clip area until it seats completely.
4. Seal the set up to the master model, invest and boil-out the wax.
5. Block-out any under cuts, with the exception of the undercut on the metal housing (M). Do not block out mesial and distal to the housings.
7. Provide the dentist with the order numbers for the bar and clips. You may provide extra clips with less or more retention. (Hader-EDS Combo Clips #99-531009.)

procedures continued next page
Hader-EDS Bar System

Phase 8: TECHNICAL — Processing with Fabricating Clips

Note: If you prefer to fabricate a processing model, take a duplicate impression. Cut the aluminum bar analog to the appropriate length and insert into the impression. Pour a new processing model.

1. If you do not use the metal housing, seat the fabricating clip over the bar and block-out the undercuts on the bar (N). You may need to adjust the length of the fabricating clip. If the fabricating clip is overadjusted, fill in space with block-out material.

2. Make sure that the extension flanges do not spread, as the final clips will be loose in the denture.

3. Seat the set-up on the model. If it will not fit remove wax around the area of the bar and rider area till it seats completely.

4. Seal the set up to the master model, invest and boil-out the wax. Recheck the block-out area to make sure it is still intact.

5. Pack, process, and deflask the denture. Do not trial pack.

6. Finish the overdenture, check the function of the attachment and return the bar/coping assembly and the completed overdenture to the dentist. If fabricating riders were used, remove them and replace with final clips.

7. Provide the dentist with the order numbers for the bar and clips. You may provide extra clips with less or more retention. (Hader-EDS Combo Clips #99-531009)

Phase 9: CLINICAL — Delivery to Patient

1. Check the prosthesis and the copings. Call the technician immediately if there are any questions. Let her/him know how their technical skill makes your job easier. (We all appreciate compliments once in a while and this can only benefit the business relationship).

2. Seat the bar restoration. There should be a small space between the bar section and the tissue for better hygiene.

3. Seat the denture over the bar and check the amount of retention. Check and adjust occlusion.

4. Record the orders numbers of the bar and clips. By using the color coded clips, you can provide the patient with less or more retention than the yellow clip will provide. We recommend starting with the white clips (least retention).

Phase 10: CLINICAL — Replacing Hader-EDS Clips

Note: The Hader-EDS clips are not adjustable but are easily replaced.

1. Use a narrow instrument to remove the old clip (P). Seat a new clip on the plastic seating tool and insert it into the metal housing or denture acrylic. (Q)

Phase 11: CLINICAL — New Denture over Existing Bar

1. Shorten the Hader-EDS impression clip to the length of the bar between copings.

2. Take a new impression with the impression coping in place. The old denture can be used as a tray. (R)

Phase 12: TECHNICAL — New Denture over Existing Bar

1. Shorten a Hader-EDS analog to the same length as the impression clip and insert into impression coping.

2. Pour the model and articulate.

3. Set new teeth and follow procedures from Phase 7 through Phase 12.