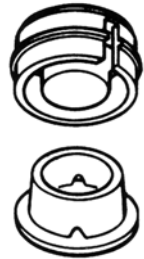


# STERN ERA® OVERDENTURE

## Summary

- Resilient semi-precision attachment.
- Radicular snap.
- Universal hinge with vertical movement.
- Nylon male, plastic pattern female.
- Black fabrication male with built-in spacer.
- Six color-coded males for six levels of retention. Lightest to strongest: white, orange, blue, grey, yellow red. The white and orange are final males. The blue and grey males are oversize.
- Two Extra Oversized Males for greater retention in problem cases - yellow has a larger button than the grey; red, has a larger button than the yellow.
- Optional ERA Overdenture Metal Jacket holds the attachment male in the denture base and is sold pre-loaded with a black fabrication male.
- Males changed without use of autopolymerizing acrylic.



**Male Color Code**  
**White - light**  
**Orange - moderate**  
**Blue - heavy**  
**Grey - very heavy**  
**Yellow - more than grey**  
**Red - most retention**

Fixation: Male - retained directly in processed denture acrylic or an ERA Metal Jacket.  
 Female - cast as part of root cap coping.

Cast plastic components 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
4.2mm	4.3mm	N/A	6.3mm

+Add 1.0mm for patients with habitually strong bites.  
 ERA Metal Jacket thickness: 0.2mm

## Indications

- Overdentures or partial dentures.
- Appropriate for use with all appliances where remaining non-vital roots are to be utilized as abutments.

## Contraindications

- Not appropriate where a totally rigid connection is required.



## ATTACHMENT DESCRIPTION

Female	Male	Overall Height	Width Male
Burnout Pattern	Nylon	3.2mm	4.3mm

### Male Color Code:

Black - fabrication male
White - final male with light retention
Orange - final male with moderate retention
Blue - oversize male with heavy retention
Grey - oversize male with very heavy retention
Yellow - extra oversize, more retention than grey
Red - extra oversize, most retention

## Order Numbers

Item	Number
Stern ERA Overdenture starter kit <small>2 attachments, 2 processing jigs, 1 core cutter bur 1 seating tool and 1 paralleling mandrel.</small>	811300
Stern ERA Overdenture attachment <small>1 female, 5 assorted males: 2 black, 2 white, 1 orange.</small>	811310
ERA Overdenture female	811390
ERA Overdenture black fabrication males, 5	811320
ERA Overdenture white males, 5	811330
ERA Overdenture orange males, 5	811340
ERA Overdenture blue males, 5	811350
ERA Overdenture grey males, 5	811360
Assorted ERA Overdenture males <small>1 each: black, white, orange, blue, grey.</small>	811365
ERA Overdenture Metal Jacket with black male	811380
ERA Overdenture yellow males, 5	811370
ERA Overdenture red males, 5	811375

## TOOLS LIST

Item	Number
Laboratory tool kit <small>Core cutter bur, seating tool and paralleling mandrel.</small>	811200
Dentist tool kit <small>Core cutter bur and seating tool.</small>	811240
ERA paralleling mandrel	811210
ERA core cutter bur	811220
ERA seating tool	811230
ERA overdenture processing jig	811395

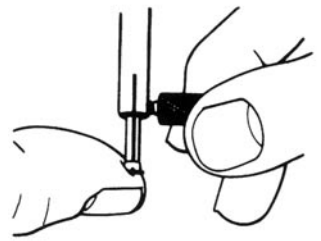


## FABRICATION INSTRUCTIONS

### Plastic Female Pattern

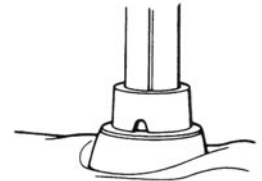
Note: Do not snap a male into the female plastic pattern. Once the two components have been snapped together, they cannot be separated.

1. Wax the root cap copings, keeping the occlusal surface as low as possible and relatively flat.
2. With your master model securely held in the surveyor table, lock the table alignment in the desired position.
3. Check that the knurled thumbscrew on the paralleling mandrel is loose. Place the female plastic pattern on the mandrel. While holding the female against the shoulder of the mandrel, tighten the thumbscrew to secure the female in place (Fig. 1).



**Fig. 1**

4. Lute the base of the plastic female on top of the coping (Fig. 2). If more than one attachment is used, be sure the table alignment remains unchanged to assure parallelism of the attachments. Take care that wax does not flow onto the top of the base. This surface must remain clean.



**Fig. 2**

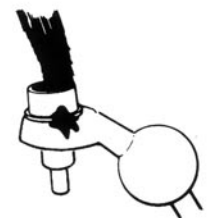
Note: The ERA Overdenture female may also be utilized on top of a custom waxed bar connecting implants or natural abutments. Place the bar close to the ridge.

5. Sprue the patterns, luting the sprues to the sides of the copings away from the attachment base (Fig. 3).
6. Carefully invest the sprued patterns. Use one of the investments recommended for the selected alloy. Keep in mind that finer grain investments have better flow characteristics and will promote cleaner castings. Without the casting ring in place, first push and vibrate the investment into the female using a brush. The investment should flow through the relief openings near the base of the female pattern (Fig. 4). Place the casting ring onto the sprue former and finish investing.
7. As with any plastic pattern, burn out using a two-stage technique. The heat rate for the first stage should be no more than 10° per minute. The first stage temperature should be 600°F (316°C). After a heat soak of 30 minutes, the heat rate may be raised to the maximum allowed by the investment manufacturer. Set the furnace to the proper temperature for the alloy being used.



Sprue to side of coping, not attachment.

**Fig. 3**



Investment should flow out holes.

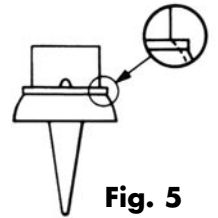
**Fig. 4**

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.

8. Divest the castings using aluminum-oxide abrasive as needed.

NOTE: When finishing and polishing the attachment females, keep in mind that the inside dimension should not require further refinement. If you later find the snap retention of the (least retentive white male excessive, lightly polish the narrow inside clearance in the eyelet by hand with a silicone rubber polishing point.

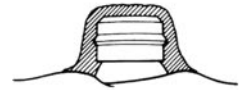
9. Inspect the casting for bubbles. Any bubbles on the surfaces of the female ring and the base must be removed to assure proper fit of the attachment unit. The base and coping may be rounded from the external surface of the female ring to the margin of the coping (Fig. 5). In finishing the outside of the ring take care not to reduce the wall thickness appreciably.



**Fig. 5**

10. Creating a framework housing for the ERA males:

Seat the copings on the master model. Snap the fabrication males into the females, then block out the model and make a duplicating impression. Fabricate the refractory model. Wax the framework around the representations of the ERA males. Cast and finish the framework. With this option the males will snap into the custom metal housing of the overdenture framework.



**Fig. 6**

### **Operatory Placement of the Males**

1. In the laboratory -

Snap the black fabrication males into the females on the master model and cover both the copings and attachments with foil or sheet wax (Fig. 6). Duplicate the model for processing.



**Fig. 7**

2. Set up and wax the prosthesis. The wax-up will have recesses over each abutment. After approval, process the prosthesis as usual.

3. After finishing, deliver the prosthesis and the cast copings. Also deliver the fabrication and final males for each female.



**Fig. 8**

4. In the operatory -

The dentist should have a dentist's ERA tool kit. Cement the copings. Using a round bur, prepare a lingual window into the recess over each coping (Fig. 7).

5. Snap a black fabrication male (or an ERA Metal Jacket with its fabrication male) into each female. Block out the remaining exposed surfaces of the copings, so when the self-curing acrylic is added and cured, it will not be in contact with the copings (Fig. 8). This small space between the copings and the acrylic will allow for the resilient function of the ERA attachments.

6. Seat the overdenture to check that it touches neither the copings, nor the black fabrication males or ERA metal jacket. If it does touch, use a round bur to remove additional acrylic.



**Fig. 9**

7. Carefully paint self-curing orthodontic resin (or denture repair acrylic) over the top and sides of the black fabrication males or Metal Jackets (Fig.9). Make sure that the external retention ridge on the outside of the cylindrical housing of each male is fully covered with the resin. Place additional resin in the recesses in the overdenture and seat the prosthesis in the mouth. Be sure the prosthesis is passively seated on the tissue while the acrylic cures.

8. Remove the prosthesis, fill in any defects in the acrylic and finish the prosthesis.

9. Replace the black fabrication males with the white males (see "How to Change the ERA Males").

## Laboratory Placement of the Males

1. The model for laboratory processing of the fabrication males can be completed in two ways:

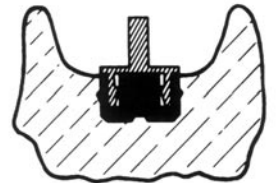
- A) Using the copings with attachments, or
- B) Using the processing jigs (order no. 811395) in place of the copings.

### A) With Copings -

Snap a black fabrication male into each female and take an impression with the copings in place. Use a technique that will not displace the tissue in the edentulous areas. A passive impression of the tissue is an essential prerequisite to making an accurate model on which to process the denture. If the copings and the fabrication males are not pulled in the impression, place them carefully in the recesses in the impression material. Reseat the master dies onto the copings and seal them to the impression, or create acrylic processing dies. Pour the processing model.

### B) With Processing Jigs -

Snap a black fabrication male into each female and take the impression with copings in place. Use a technique that will not displace the tissue in the edentulous areas. A passive impression of the tissue is an essential prerequisite to making an accurate model on which to process the denture. If the copings and/or the fabrication males are pulled in the impression, take them out of the impression. Remove the black fabrication males from the females on the copings and snap them onto the processing jigs. Reposition the assembly in the imprint of the fabrication males in the impression (Fig. 10). Pour the processing model.



**Fig. 10**

2. Set the teeth and wax the appliance.

Note: If you are using metal jacketed males, substitute those for the black fabrication male before setting the denture teeth.

3. Proceed with the processing technique of your choice through the boil-out step.

After the boil-out, check that the black fabrication males (or metal jackets) are properly seated and block-out the remaining exposed surfaces of the copings so that the processed acrylic will not touch the copings (Fig. 11). This small space between copings and the acrylic will allow for the resilient function of the ERA attachments.

5. Process and finish the acrylic.

6. Deliver the appliance, copings and all color-coded final males.

7. Insert, or remount, the appliance and make any necessary occlusal adjustments. Next, remove the black fabrication males and replace them with the white final males (see "How to Change the ERA Males"). In this way vertical resiliency and hinging are allowed. If the black males are not replaced the prosthesis will not be resilient.

If the prosthesis does not demonstrate adequate retention in the mouth, the dentist can easily remove the white males as described in the "How to Change the ERA Males" section, and replace them with other more retentive males. All new cases should have adequate retention with the white or orange males. The blue and grey males are oversize and used when the female eyelet is accidentally enlarged during metal finishing. Different color males may be used in the same appliance without compromising the attachments' function.

Note: A Dentist's Tool Kit (Core Cutter, Seating Tool and instructions) is necessary for replacement of the ERA males.

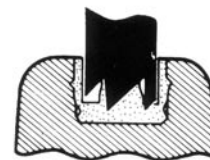
## SERVICING

### How to Change the ERA Males

1. Place the core cutter into a straight handpiece.
2. Cut out the core of the male at low RPM, using a short cutting cycle and an in-and-out motion. Push in for about one second at a time, checking to see if the core has been removed (Fig. 12). The core will remain in the core cutter and should be ejected by sliding a thin blade along the cutter's side slot.
3. Using a blade or explorer-like instrument, collapse the remaining ring into the open space created by removal of the core and lift it out (Fig. 13).
4. Place a new male on the seating tool. Place the tool with the new male into the recess in the acrylic and firmly push it in until it snaps securely in place (Fig. 14).

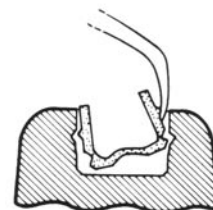


Fig. 11



Remove center  
with core cter.

Fig. 12

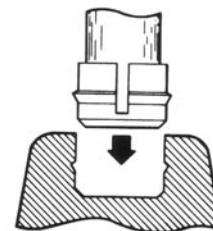


Using explorer collapse  
and remove male shell.

Fig. 13

### Relining and Rebasing

1. Remove the existing males as outlined above. Replace them with the black fabrication males. The built-in spacer of the fabrication male will hold the partial denture in the upper limit of its 0.4mm vertical resiliency.
2. Lubricate the attachments (male and female) with petroleum jelly. This will prevent impression material from entering the attachment.
3. Make a wash impression.
4. Snap processing jigs on the fabrication males in the impression and pour a model in dental stone.
5. After processing and occlusal adjustment replace the black fabrication males with the final males utilizing the core cutter and seating tool.



Snap new male in place  
with seating tool.

Fig. 14

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