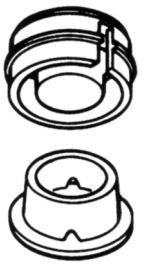
STERN ERA® STANDARD & MICRO OVERDENTURE

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 a consistent level 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: Button Size

White	**smallest**
Orange	
Blue	
Grey	
Yellow	
Red	**largest**

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
Standard	4.2mm	4.3mm	N/A	6.3mm
Micro	3.6mm	3.4mm	N/A	5.4mm

+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 (Std.)	Nylon	3.2mm	4.3mm
Burnout Pattern (Micro)	Nylon	2.6mm	3.4mm

Order Numbers

Item	Number Standard	Micro
Stern ERA Overdenture starter kit 2 attachments, 2 metal jackets, 2 processing jigs, 1 core cutter bur 1 seating tool and 1 paralleling mandrel.	811300	811045
Stern ERA Overdenture attachment 1 female, 5 assorted mates: 2 black, 2 white, 1 orange.	811310	811044
ERA Overdenture female	811390	811030
ERA Overdenture black fabrication males, *5*	811320	811035
ERA Overdenture white males, *5*	811330	811036
ERA Overdenture orange males, *5*	811340	811037
ERA Overdenture blue males, *5*	811350	811038
ERA Overdenture grey males, *5*	811360	811039
Assorted ERA Overdenture males, *7* 1 each: black, white, orange, blue, grey, yellow, red	811365	811029
ERA Overdenture Metal Jacket with black male	811380	811043
ERA Overdenture yellow males, *5*	811370	811040
ERA Overdenture red males, *5*	811375	811041

TOOLS LIST

Item	Number Standard	Micro
Laboratory tool kit Core cutter bur, seating tool and paralleling mandrel.	811200	811025
Dentist tool kit Core cutter bur and seating tool.	811240	811026
ERA paralleling mandrel	811210	811024
ERA core cutter bur	811220	811023
ERA seating tool	811230	811022
ERA overdenture processing jig	811395	811042
ERA overdenture impression coping	811233	811236
ERA attachment extraction tool	811027	811027

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.

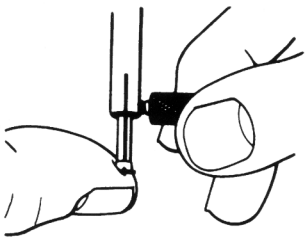


Fig. 1

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).

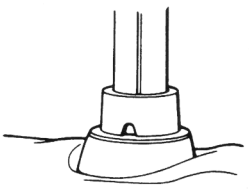


Fig. 2

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.

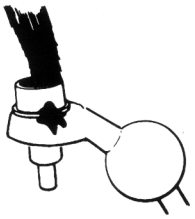
Note: The ERA Overdenture female may also be utilized on top of a custom waxed bar connecting implants or natural abutments. Place the bar close to the ridge.

Sprue to side of coping, not attachment.

Fig. 3

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.



Investment should flow out holes.

Fig. 4

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.

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: Test the retention of the least retentive white or black male by snapping one into the female. If it is difficult to remove the male using finger pressure, lightly polish the narrow inside diameter of the eyelet with a smooth silicone rubber polishing point that has been sized to fit the opening. Try the fit of the male again to verify the correct retention.

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.

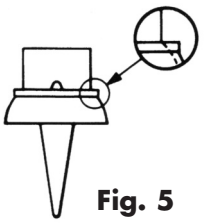


Fig. 5

10. Creating a framework housing for the ERA males: (Optional, when ERA Metal Jackets or black fabrication males are not used.)
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.

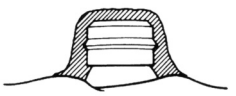


Fig. 6

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.

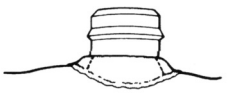


Fig. 8

3. After finishing, deliver the prosthesis and the cast copings. Also deliver the fabrication and/or ERA Metal Jackets along with the final males for each female.

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 ERA PickUp or 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.

Fig. 9

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.

7. Carefully apply ERA PickUp or self-curing resin 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 ERA PickUp 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 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, a metal jacket, or an impression coping 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 black males are pulled in the impression, take them out of the impression. Remove the black males from the females on the copings and snap them onto the processing jigs. Reposition the assembly in the imprint of the males or impression copings in the impression (Fig. 10). Pour the processing model.

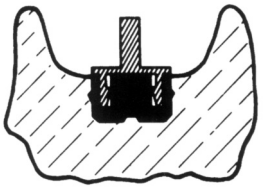


Fig. 10

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.

Fig. 11

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

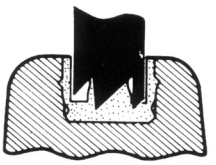
How to Change the ERA Males

1. Place the core cutter into a straight handpiece.

2. Cut out the core of the male at medium 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.

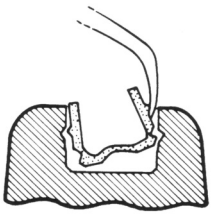
3. Using the ERA attachment extraction tool (811027) or a blade instrument, collapse the remaining ring into the open space created by removal of the core and lift it out (Fig. 13).

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).



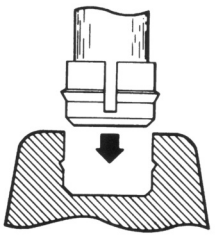
Remove center with core cutter.

Fig. 12



Using ERA extraction tool, collapse and remove male shell.

Fig. 13



Snap new male in place with seating tool.

Fig. 14

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 overdenture 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.