

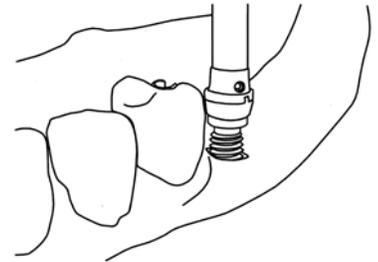
# STERN ERA® IMPLANT ABUTMENT

## Summary

- Resilient precision overdenture attachment.
- Universal hinge with vertical movement.
- Titanium abutment, nylon male.
- Manufactured for most popular screw and cylinder implants.
- Black fabrication male with built-in spacer.
- Six color coded males for six levels of retention. Lightest to strongest: white, orange, blue, grey. The white and orange are final males. The blue and grey males are oversize.
- Optional ERA Overdenture Metal Jacket holds the attachment male in the denture base and is sold pre-loaded with a fabrication male.
- Four angles to accommodate divergent implants: straight (0°), 5°, 11°, and 17°.
- Female is titanium nitride hardened to decrease attachment wear.
- Custom abutments made for deep tissue cuffs.

Fixation: One piece straight abutment - screwed into implant.

Two piece angled abutment - angled attachment female cemented into abutment base, base screwed into implant.



0°, one-piece straight unit.



Six, color-coded males provide six levels of retention.



5°, 11°, or 17° two-piece Angle Correction Abutment

### Minimum Space Required:

Height*	FC width	Prep depth	RC width
4.0mm+	4.3mm	N/A	6.3mm

Nylon male - retained directly in processed denture acrylic or an ERA Overdenture Metal Jacket.

\*Measured from the gingival surface at the implant site to the opposing occlusal surface. Actual attachment position is determined by the abutment's tissue cuff height and the position of the implant.

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

## Indications

- Overdentures or partial dentures retained in whole or in part by osseointegrated implants.

## Contraindications

- Not appropriate where a totally rigid connection is required.



## ATTACHMENT DESCRIPTION

The ERA Implant Abutment applies the ERA Overdenture Attachment concept to a series of titanium abutments manufactured for popular implants. The abutment integrates with an attachment and consists of:

- A 0° (straight), 5°, 11°, or 17° nitrided titanium female assembly.
- Two black fabrication males that create space for 0.4mm of vertical resiliency.
- Two white final males which activate the attachment's vertical resiliency and retain the overdenture.
- One orange final male for additional retention if required.

Overall Height	Width of Male
3.0mm	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

ERA Abutments are manufactured for most popular screw and cylinder implants. Components and product numbers vary with the implant type. Call 800-243-9942 for assistance in ordering. The following components are for Sterngold-ImplaMed implants and other Brånemark style standard, external hex implants.

Item	Number
0° ERA Implant Abutment with males, 2mm cuff	811710
0° ERA Implant Abutment with males, 3mm cuff	811720
0° ERA Implant Abutment with males, 5mm cuff	811722
5° ERA Implant Abutment with males, 3mm cuff	811724
5° ERA Implant Abutment with males, 5mm cuff	811726
11° ERA Implant Abutment with males, 3mm cuff	811728
11° ERA Implant Abutment with males, 5mm cuff	811730
17° ERA Implant Abutment with males, 3mm cuff	811732
17° ERA Implant Abutment with males, 5mm cuff	811734
0° ERA Abutment only, 2mm cuff	811888
0° ERA Abutment only, 3mm cuff	811894
0° ERA Abutment only, 5mm cuff	811896
ERA Angled Abutment base, 3mm cuff	811890
ERA Angled Abutment base, 5mm cuff	811892



The following components are for all ERA Angled Abutment bases.

Item	Number
5° ERA Angled Abutment female	811750
11° ERA Angled Abutment female	811752
17° ERA Angled Abutment female	811754

The following items are used with all ERA Implant Abutments.

Item	Number
Tissue Depth Gauge	904307
ERA Correct Angle Selection Post, 0° (straight)	811182
ERA Correct Angle Selection Post, 5°	811183
ERA Correct Angle Selection Post, 11°	811184
ERA Correct Angle Selection Post, 17°	811185
ERA Correct Angle Selection Post Kit, 1 set of 4 posts	811193
ERA Correct Angle Selection Post Kit, 2 sets of 4 posts	811194
ERA Overdenture Metal Jacket with black male	811380
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 1 each of black, white, orange, blue, and grey	811365
ERA Overdenture yellow males, 5	811370
ERA Overdenture red males, 5	811375

## TOOLS LIST

Item	Number
ERA Abutment tool kit 1 abutment wrench, 1 core cutter bur 1 seating tool, 2 alignment handles and 2 processing jigs.	811908
Dentist tool kit 1 core cutter 1 seating tool.	811240
ERA Abutment wrench	811906
ERA Abutment torque driver:	
Short, Reference ERADS	811916
Long, Reference ERADL	811926
Torque wrench 20 N-cm, Reference TW 20	905207
Thumb knob, Reference TK	905213
SILASTIC® Medical Adhesive Type A	811904
ERA core cutter bur	811220



## TOOLS LIST

Item	Number
ERA seating tool	811230
ERA alignment handles, 2	811455
ERA overdenture processing jig	811395
ERA Lock Cement, 0.5 grams	811900

## FABRICATION INSTRUCTIONS

When selecting the proper ERA Implant Abutment, match the ERA with your implant brand and diameter. Then decide the required tissue cuff height. When fully threaded into the implant, Implant Abutment female's lateral drain holes should be at, or above, the tissue surface.

The ERA Implant Abutments are available as straight, 0°, one-piece units (Fig. 1), or as two-piece 5°, 11°, or 17° angled assemblies (Alignment Correction Abutments) to facilitate functional parallelism of the ERA females despite diverging implants (Fig. 2).

The two-piece angled abutments will be assembled at the appropriate orientation, marked, and then permanently bonded together outside the mouth with ERA Lock - a BIS-GMA cement.

If you are unsure of the degree of divergence of the implants, it may be a good idea to have complete selection of the Alignment Correction Abutments on hand prior to starting a case.

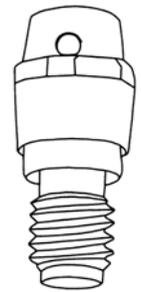
Two other methods are available for determining the proper angled abutment to use.

A. Clear plastic alignment gauges (order no. 666187).

Uncover the osseointegrated implant and remove the cover screw. Screw an impression post, or similar straight post, into each implant. If at least one implant is positioned in the correct path of insertion for the overdenture, call it 0°. Use the plastic ERA Alignment Gauges (available charge from Sterngold-ImplaMed) to visually determine the divergence between the first implant and each of the others.

If none of the implants are positioned in the correct path of insertion you must fabricate model with implant analogs. Place the model on a surveyor and tilt it so that the surveyor's indicator rod shows the correct path of insertion. Then use the impression posts and the plastic ERA gauges to measure the divergence of each implant.

Note: Do not cement the two parts of the Alignment Correction Abutment together or model. It is probable that the rotational position of the analog in the model does not match that of the patient's implant. Therefore, the alignment of the ERA female on the implant will be incorrect - even though the proper angulation components were selected.



**Fig. 1**



**Fig. 2**

B. ERA Correct Angle Gauge Kit (order no. 811193).

Four metal gauges, 0°, 5°, 11°, and 17°, are supplied. They can be used to estimate the angulation of most externally hexed implants. They are made of titanium and feature a smooth post that can be slid directly into the implant without damaging its internal threads. By manually rotating the gauges, parallelism with the case's path of insertion can be visualized and the correct angled abutment selected.

### Check list

Prior to starting a case you should have the following items at hand:

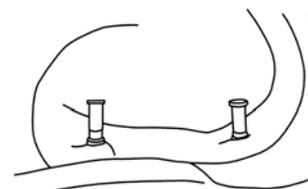
- Straight (0°) and/or angled (5°, 11°, or 17°) ERA Implant Abutments with the required tissue cuff heights (2mm, 3mm, 4mm, or 5mm). Not all cuff heights are available for all implant designs.
- Call Sterngold-ImplaMed at 800-243-9942 for the latest information.
- ERA overdenture attachment males for each abutment - black fabrication males, and color-coded white and orange final males.
- ERA Implant Abutment tools.

### Assembly

1. Uncover the osseointegrated implant and expose the internal threading of the implant.
2. Snap the ERA nylon handle onto the female of the selected one-piece (0°) implant abutment and position it in the implant. Screw the abutment fully into the implant using only finger pressure at this time.
3. Leaving the nylon handle in each of the placed abutments, visually assess the alignment of the handles (Fig. 3). Ideally, they should be within 5° of each other and also within 5° of the desired path of insertion.
4. If acceptable alignment exists, remove the nylon handles and use the special ERA abutment wrench (order no. 811906) for final tightening. Tighten firmly with finger pressure. Occasionally an abutment may loosen during function. The best way to avoid this is to tighten the abutment into the implant using the 20Ncm torque wrench (order no. 905207) and ERA implant abutment torque drivers (order nos. short 811916, long 811926). This will create the proper amount of pre-load on the threads.

Another method for creating some adhesion on the threads, and a seal, is to coat the threaded stem of the abutment with SILASTIC® silicone (order no. 811904). This may also aid in reducing seepage of oral fluids into the implant and subsequent odor from bacterial growth.

5. If you detect an obvious divergence of one or more of the handles, replace the 0° abutment(s) with one of the two-piece Alignment Correction Abutments to achieve an acceptable alignment of all components.



**Fig. 3**

### Using the Alignment Correction Abutment (ACA):

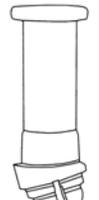
Each abutment consists of a 5°, 11°, or 17° angled ERA female and a threaded base (Fig.4). Both components are made of a titanium alloy. The females are treated with titanium nitride hardness.

1. Snap the nylon handle into the selected angled female (Fig. 5).
2. Push the cross-cut retention knob on the angled female into the receptacle of the I base. Make sure the female is completely seated in the base (Fig. 6). The retention angled female in the base was designed for only a light hold, just enough to retain the alignment orientation. Consequently, you will not feel any real snap, just a light retention.
3. Position the assembled abutment into the exposed implant and screw it in all the way.
4. Rotate the angled female in its base (clockwise to avoid loosening of the base) into alignment with a female of another ERA abutment already in place. This other ERA should be oriented to the case's path on insertion. As an aid to visual assessment, snap a second nylon handle into the other ERA abutment as well. Remember that to achieve the desired orientation, you have three angulations to choose from. You can try other angled females in the same base without removing the base from the implant.
5. After you decide which angled female will be used, tighten the threaded base in the implant with the ERA abutment wrench only finger tight.
6. Make sure the selected angled female is completely seated on the base and rotate to the desired orientation. Mark the position of the female in the base with a line drawn with an indelible pen or other suitable marker (Fig.7).
7. Remove both the female and the base from the mouth, and clean the contact surfaces thoroughly in preparation for bonding. Do not disturb the orientation marking.
8. Bond the angled female onto the threaded base with ERA Lock composite cement. (See the separate instruction sheet for handling the cement.) Make sure that the components are aligned using the previously marked position.

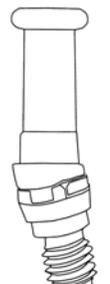
Plan ahead for steps 6-8 so no mix-up of components and implants can occur. It is essential that the females are bonded into the same bases in which they were originally aligned and marked. The cemented abutments must be returned to the same implant which they were originally aligned for bonding.



**Fig. 4**



**Fig. 5**



**Fig. 6**



**Fig. 7**



9. You may coat the threaded stems of the completed Angle Correction Abutments with SILASTIC® silicone and thread the abutments back into their corresponding implants. Use the ERA abutment wrench, or the 20Ncm torque wrench and driver, for final tightening.

### Operatory placement of the males:

1. In the laboratory: To provide relief, locate the position of the implants on the master model. Drill holes in the cast (roughly in the center of the implant cylinder location) and cement ERA Overdenture processing jigs (order no. 811395) to represent the ERA abutments in the mouth. Snap black fabrication males onto the jigs and cover the males and a bit of the surrounding stone with foil or sheet wax (Fig. 8). Duplicate this prepared model to create a denture processing model.
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 with a complete set of final males for each ERA Implant Abutment.
4. In the operatory: The dentist should have an ERA Dentist Tool Kit (order no.811240). Using a round bur, prepare a lingual window into the recess over each abutment (Fig. 9).
5. Snap a black fabrication male, or black male in a metal jacket, onto each female. Block out any remaining exposed surfaces of the abutments so when the self-curing acrylic is added and cures it will not be in contact with the abutments (Fig. 10). This small space will allow for the resilient function of the ERA attachments.
6. Seat the denture to check that it touches neither the abutments nor the fabrication males. If it does, use a round bur to remove additional acrylic.
7. Carefully paint self-curing resin over the top and sides of the fabrication males (Fig. 11). A high quality repair or orthodontic resin is recommended. Make sure the external retention ridge on the outside of the cylindrical housing of each male is completely covered with resin. Place additional resin in the recesses in the over-denture and seat the prosthesis in the mouth. Allow the acrylic to cure with the patient in light occlusion. After checking the occlusal relationship, this may best be achieved by the dentist holding the denture against the tissue with light finger pressure.
8. Remove the denture, fill any defect in the acrylic, and finish the prosthesis. Make any necessary occlusal adjustments.

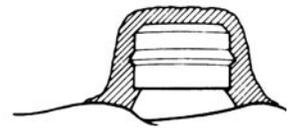


Fig. 8



Fig. 9

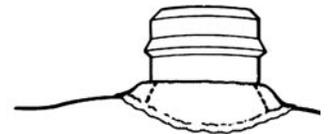


Fig. 10



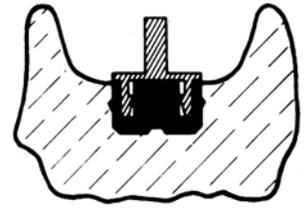
Fig. 11



9. Replace the black fabrication males with white final males. (See the "Changing the ERA males." section below.) This activates the 0.4mm vertical resiliency of the ERA attachment.

Note: If the patient desires additional retention, replace the white males with orange. Both colors can be used together in the same overdenture.

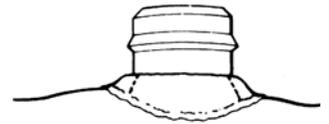
The blue and grey males are oversized, and are intended for use when females cast from plastic patterns are excessively large. They are not used in normal operation.



**Fig. 12**

### **Laboratory placement of the males:**

1. In the operator: Snap a black fabrication male, onto the female of each abutment and make the final impression. Remove the fabrication males from the implant abutments. If the males are pulled in the impression, take them out of the impression. Snap the fabrication males onto overdenture processing jigs. Reposition this assembly in the imprint of the fabrication male in the impression (Fig. 12). Pour the processing model. The metal jigs will represent the implant abutment females.



**Fig. 13**

2. In the laboratory: Set the teeth and wax the appliance.
3. Proceed with the processing technique of your choice through the boil-out step.
4. After the boil out, check that the black fabrication males, or ERA Overdenture Metal Jackets, are properly seated on the processing jigs. Block out the remaining exposed surface of each jig, plus a bit of the surrounding model surface, so the processed acrylic will not touch them (Fig. 13). This makes a small space (0.5mm minimum thickness) between the abutment and the denture base, which allows the resilient functioning of the ERA attachment.
5. Process and finish the acrylic.
6. Deliver the overdenture with the black males in place and all the color-coded final males for each abutment. Make any needed occlusal adjustment. Remove the black fabrication males and replace them with white final males. (See "Changing the ERA males:" section below.) This activates the 0.4mm vertical resiliency of the ERA attachment.

Note: If the patient desires additional retention, replace the white males with orange. Both colors can be used together in the same overdenture.

The blue and grey males are oversized, and are intended for use when females cast from plastic patterns are excessively large. They are not used in normal operation.

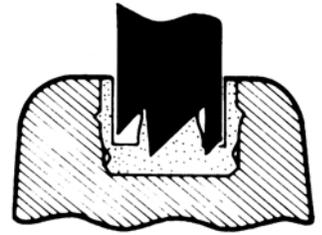


### Changing the ERA males:

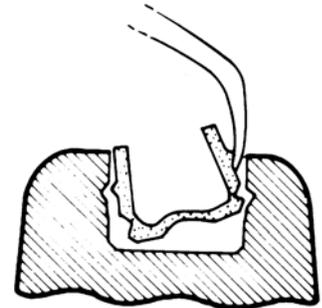
Note: A dentist's tool kit (core cutter and seating tool) is necessary for the replacement of ERA males.

1. Place the core cutter bur in a slow speed handpiece.
2. Cut out the core of the male at low RPMS, using a short cutting cycle and in-and-out motion. Push in for about one second at a time. Check to see if the core is removed (Fig. 14). The core will remain in the core cutter and can 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. 15).
4. Set 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 the male snaps securely into place (Fig. 16).

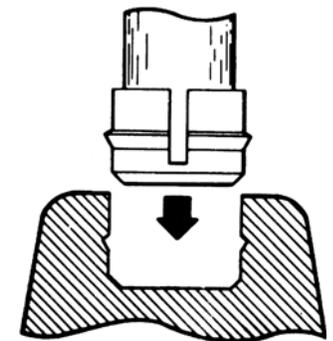
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**Fig. 14**



**Fig. 15**



**Fig. 16**



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