



ERA® Attachment & Implant Systems



A SNAP to Use and Maintain

The **Stern ERA**® is our response to the dental professional's need for a simple, dependable and highly versatile attachment system for removable prostheses. **ERA**®s are the most popular resilient dental attachments prescribed today. Used in removable partial denture treatment, tooth supported overdentures and implant cases, **ERA**® is an excellent choice for both experienced practitioners and those new to attachment procedures.



Sterngold™

www.sterngold.com

Before the **ERA**® concept was developed, dental professionals and their patients were experiencing problems with some resilient attachments. They were too expensive, complicated to fabricate, and too fragile or unreliable for long term patient service.

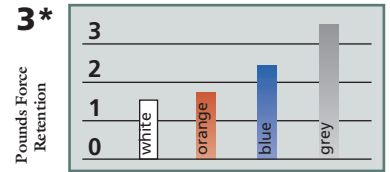
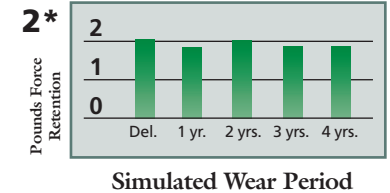
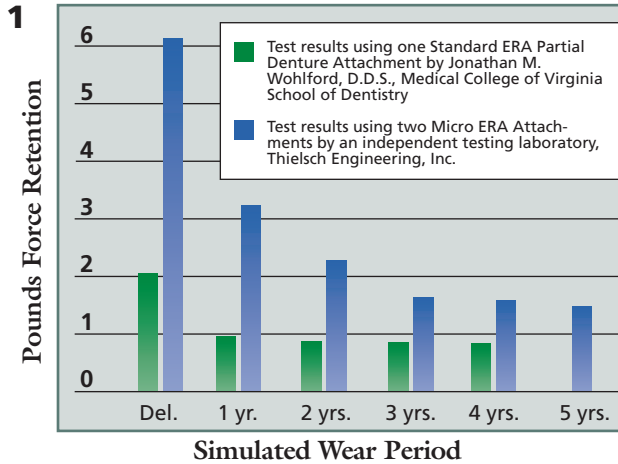
The **ERA**® **System** alleviates these problems by using new materials and patented designs. **ERA**® **attachments** consist of a metal female component, which is intraorally fixed; and a replaceable, high density nylon male anchored in the denture base.

- They are low in cost. By eliminating the machining of expensive gold alloy components, ERA attachments are affordable to many more patients.
- They are easy to use. Fabrication and maintenance procedures have been simplified.
- They are tough and reliable. In vitro studies* and clinical experience show **ERA**® **attachments** to be long lasting, and patients find them comfortable and easy to live with.

Worldwide...dentists prescribe, and technicians fabricate, thousands of **ERA**® retained restorations every month. And patients put them to hard daily use. You can join in their success.

ERA® Retention

1. Female retention of the original white male, indicative of both male and female wear.
2. Female retention of a new white male, indicative of female component wear.
3. Retention of new males in a "four year" female. Retention values taken after 20 insertion-removal cycles for new male wearing in.

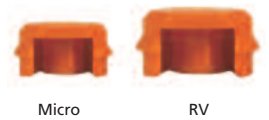


ERA® Partial Denture Attachments

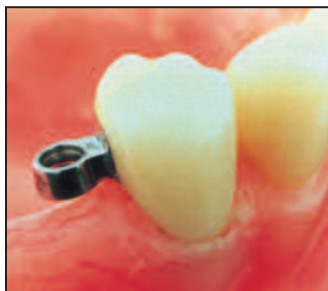


The female component is a plastic pattern which is incorporated as part of a crown wax-pattern and cast in a hard alloy. A metal female jig (which becomes part of your stone model) is available to hold the male in place for laboratory processing into the partial denture's acrylic saddle.

You have a choice of two male designs. The **ERA®-Reduced Vertical male (ERA®-RV)** has 0.4mm of vertical resiliency and universal joint hinging. The **Micro ERA® male** has the same resiliency and hinging, but needs 0.5mm less vertical space and has a diameter of almost 1.0mm less, making it the smallest extra-coronal resilient attachment in the world. The **ERA®-RV** and **Micro ERA®** males also have a projection which contacts the abutment crown above the female eyelet. This resists vertical displacement of the partial denture's distal extension saddle.



Within the **ERA®-RV** there are three female choices. The original female drops 0.3mm from its connection to the crown. Bone loss in the edentulous area could mean that there is a significant amount of space between the attachment and the tissue. Now you can place the female eyelet closer to the tissue with two offset females. The bottom of the **ERA®-RV Offset female 2.5** drops 2.5mm from its connection to the crown and the **ERA®-RV Offset 4.5** drops 4.5 mm. We made extensive use of state of the art product engineering software during the design and testing phases of these attachments to ensure that these females are as strong as the original.



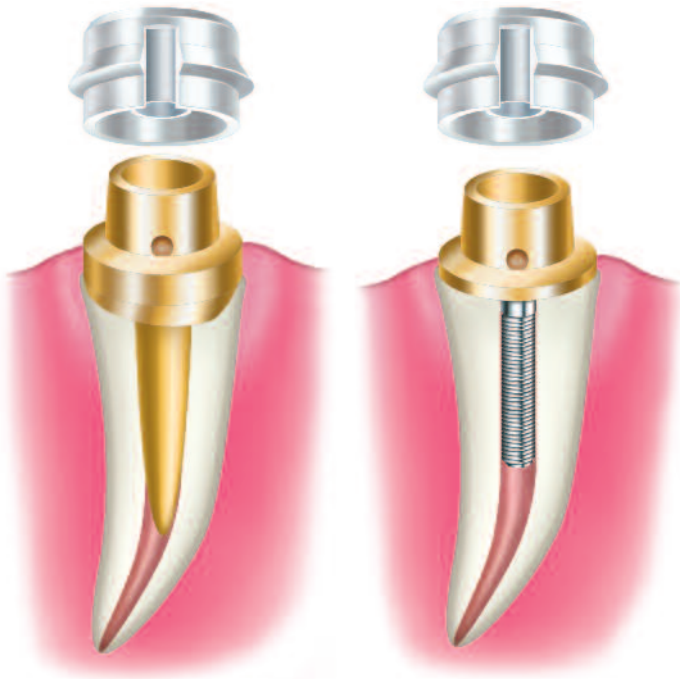
*Study conducted by Jonathan M. Wohlford, D.D.S., Medical College of Virginia, School of Dentistry



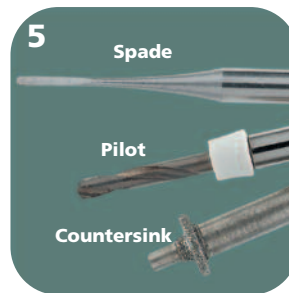
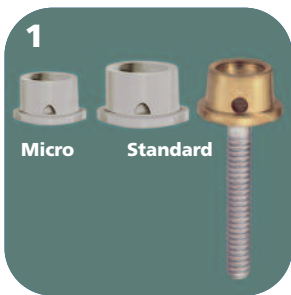
ERA® Overdenture Attachments including the Micro ERA Overdenture

There are two female designs and two post diameters for root retained overdentures. The **ERA Overdenture Attachment female** is a plastic pattern that is incorporated into the wax-pattern for a post and root-cap coping. It is cast in a hard alloy. It comes in the original size and the Micro, which is 20% smaller. The Micro saves 0.5mm in height and almost 1 mm in width, with no loss of retention or longevity. The **ERA Direct Placement Overdenture Attachment female** is manufactured in surgical stainless steel and cemented into a root specially prepared to receive it.

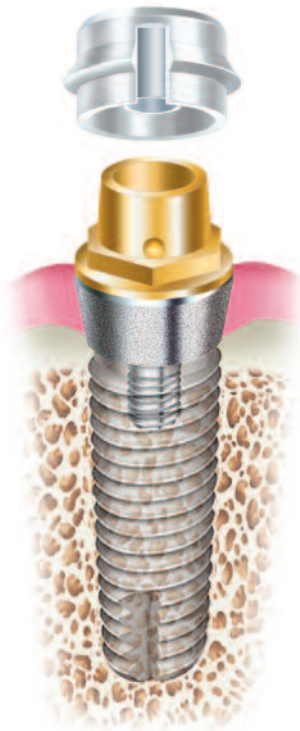
The stainless steel females are made in a choice of two post diameters and four post angles to accommodate most patient's needs. The attachment functions normally when set up to about 7° out of parallel with the case's path of insertion. All ERA Direct Placement females are titanium nitride coated.



1. Micro and standard plastic patterns for the ERA® Overdenture female. Stainless steel females for direct clinical placement.
2. Two post diameters, 1.3mm and 1.7mm. The titanium nitride coating extends onto the post to identify the larger version.
3. Angled posts: 0° (straight), 5°, 11°, and 17°.
4. Alignment handles help you carry the female to the root and aid in evaluating the attachment's angulation.
5. Specialized burs for root preparation:
 - Spade Drill for removing gutta percha.
 - Pilot Drill with depth reference ring for post preparation.
 - Countersink Bur for shaping the occlusal surface of the root to support the female.
6. Overdenture males. Used with both laboratory cast and prefabricated, stainless steel females.



ERA® Implant Abutments

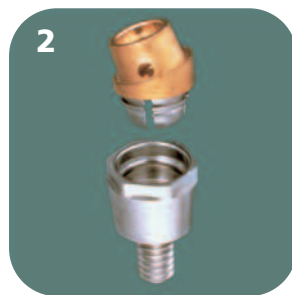


This version of the **ERA®** combines the overdenture attachment concept with an implant abutment. It is made of titanium alloy. Its **ERA®** female is titanium nitride coated and works with the same overdenture males used for patients with natural root abutments. The prosthetic head of the abutments is also manufactured in the micro size. This attachment is reduced 20% from the original, making it the smallest overdenture implant abutment, with no loss of performance. No overdenture abutment lasts longer and none can compare to the true vertical resiliency of the patented ERA Implant Abutment. There are straight and angled abutments to achieve functional parallelism even when implants are divergent. Like the **ERA® Overdenture Attachment**, the implant abutment functions normally when up to 7° off of parallel from the path of insertion. Tighten the abutment in the implant using either the **Thumb Knob** or the **20N•cm torque wrench**, each combined with the **ERA® socket**. We make **ERA® Abutments** for **Sterngold-ImplaMed®** implants and for many other brands (compatibility chart can be found on back page).

Also available in
Micro Head...

the
**Smallest
Prosthetic Head**
and the only with
**True Vertical
Resiliency!**

1. ERA® Implant Abutments are made for Sterngold-ImplaMed and many other implants in standard and micro sizes.
2. Two-piece angled abutment for divergent implants. The abutment base threads into the implant. The attachment female is bonded to the base. Use ERA® Lock™, a Bis-GMA resin.
3. Four attachment angles: 0°, 5°, 11° and 17°.
4. Alignment handles help you carry the female to the implant site and aid in evaluating the attachment's angulation.
5. The same ERA® male used with root retained overdentures is used with ERA® implant abutments. Now available with 20% smaller Micro Prosthetic Head.
6. We manufacture ERA® Abutments for most major implant brands and in varying cuff heights.
7. Stern ERA standard and micro overdenture impression copings are used to create an accurate transfer impression relationship.



ERA Mini™ Dental Implant System



Zimmer Dental is now the worldwide exclusive distributor of the *ERA Mini* Dental Implant System and related products. Designed for both transitional and long-term denture stabilization, the *ERA Mini* Dental Implant System features the capability to correct implant misangulation. Four unique angle options offer flexibility to achieve the desired path of insertion for denture stabilization, even when implants are placed in narrow, resorbed ridges.



The *ERA Mini* Dental Implant System includes implants, surgical instruction and ERA® prosthetic components as well as processing, relining and patient education materials, making Zimmer Dental a one-stop shop for components to perform the entire chairside procedure of denture stabilization.

To learn more about the *ERA Mini* Dental Implant System or to place a U.S. order, please contact your Zimmer Dental sales representative or call 1 (800) 854 7019. For information or orders outside the U.S., please contact the appropriate Zimmer Dental representative from their global network.



ERA® Angle Correction

1. Snap a white alignment handle into the straight ERA attachments. Rotate the angled ERA female until they all line up with the desired path of insertion of the denture.



2. Mark a vertical line using an indelible pen across the juncture between the implant base and the ERA Female – wherever space allows. Remove the females from the bases.



3. Add a small quantity of ERA Lock Cement into the socket of the base and a small amount to the button on the bottom of the female.



4. Snap in the ERA Female, aligning the two halves of the mark. Clean up any excess cement.



ERA® Attachment Systems

Changing the ERA® Male:

All **ERA® males** are mechanically anchored in the denture base. They provide both vertical resiliency and universal hinge movement. Worn males are removed with a specially designed bur and new ones snap into a metal jacket permanently processed into the denture. There is a specifically designed metal jacket for each type of **ERA® male**: partial denture, ERA®-RV, Micro ERA®, ERA® overdenture, and Micro ERA® overdenture. You can also anchor the males directly in the denture acrylic without the metal jacket.



Black is the processing male.
White = smallest button diameter
Orange
Blue
Grey
Yellow
Red = largest button diameter

The six different males provide consistent retention throughout the life of the attachment.

All **ERA® males** use the same color code



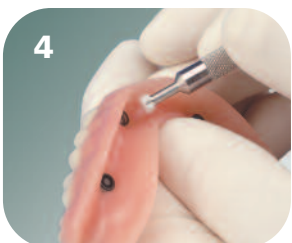
1. Core Cutter Trephine Bur.



2. Bur removes the center post of the male.



3. Pop the remnant of the male out with the ERA Extraction Tool, or with any sturdy pointed instrument.



4. Put a new male on the Seating Tool.



5. Snap the new male into the metal jacket or denture acrylic.



6. New male in place.

ERA PickUp® Material

Tissue-colored, self-curing composite material



1. Use SternVantage® Varnish to prime the recesses and light cure.



2. Add ERA PickUp® Material over the top and sides of the metal jackets.



3. Place additional resin in the recesses of the overdenture and seat the prosthesis in the mouth.



4. Passive seating is most important. If the tissue is displaced, it will make accurate seating of the attachments difficult.



5. Remove the denture. Fill any defects with resin and finish the prosthesis. Excess ERA PickUp® can easily be removed from the unvarnished areas.



6. A soft reline material, like Sterngold's QuickLine™, is recommended to cushion the tissue and implants during the healing phase.

ERA PickUp® Material (#220235)

Tissue-colored, self-curing bis-acryl composite material.

ERA PickUp® Syringe, Tips & SternVantage Varnish LC (#220237)

1 syringe @ 15 grams, 15 tips and 1 bottle of 5 ml Varnish LC

SternVantage® Varnish LC (#221001)

Unfilled light cure resin.



Common Causes of Wear for Attachments with Nylon Components

The following suggestions from the dental laboratory technicians and dentists on our technical staff, as well as some of our field survey labs, will contribute to extending the life of the prosthesis and patient comfort.

Patient Consistently Bites the Overdenture Into Place

The patient should be instructed on how to insert the prosthesis into place with his/her fingers.

Cleaning Abutments or Females with an Abrasive Cleaner

Toothpaste can be very abrasive. The patient should be instructed to remove all traces of toothpaste after brushing. The abrasive in some toothpaste can cause extensive wear on the inside of the female when the male is inserted.

Denture Cleaners

Patients who use denture cleaner should be advised to follow the manufacturer's instructions. Most require a soak time of only 10 to 15 minutes then rinse and store overnight in only water. Patient should avoid leaving the overdenture in the cleaning solution for extended time or overnight since many cleaners can have a detrimental effect on the surface of the nylon males and cause them to lose their retention. The cleaning solution can actually attack the nylon of the males, causing it to soften in approximately 1-2 months. Solutions containing Chlorine may cause the nylon males to become hard and brittle. This will cause premature wearing of the males, and eventually, some wear of the females.

Insertion of the ERA® Blue or Grey Colored Male

The insertion of the blue or grey males prematurely can cause excessive wear in the male. Keep in mind that the least amount of retention required by the patient is best.

The dentist should always process the prosthesis first with the Black Fabrication Male, core out that male, and then snap in the White Male Attachment which is the least retentive. Then, if the patient wants more retention, the Orange Male should be used. Only step up one degree of retention at a time.

Tobacco Chewing

Silica in the juices created by chewing tobacco can be very abrasive, and may be a cause of wear to the male and the female.

Pickup of Attachments Chairside

The dentist should make sure that the patient does not bite down once the prosthesis has been placed. We cannot determine the strength of a patient's bite. Too much pressure can cause the tissue to be displaced. Once the composite around the male has set and the pressure relaxed, the tissue returns to a normal state raising the attachment slightly. This can cause the attachment to snap in and out constantly as the patient talks or chews, causing excessive wear of the male. To avoid this problem, have the patient bite passively. As patient relaxes bite, the dentist should passively hold the prosthesis in place until the acrylic or composite cures.

ERA® Fabrication Tips for Plastic Females

Distal Extension (Reduced Vertical and Micro)

Although the ERA female is a plastic burnout pattern and can be cast in virtually any alloy, care should be taken to choose a hard alloy. The two most important aspects to consider are Vickers hardness and

Ultimate Tensile strength. These attributes will provide optimum retention and long life of the female eyelet. A minimum Vickers of 200 and an Ultimate Tensile of at least 75,000 psi is recommended.

Overdenture

We should pay particular attention to the cast Overdenture application of ERA. Prescriptions in these cases often request a yellow crown and bridge alloy. In choosing this kind of alloy, use a type IV metal that allows you to harden the finished casting to a high Vickers Hardness. There are many of these on the market today including Stern's Apollo, a 46% type III that can be hardened to 230 Vickers. Hardening techniques for C+B metals are relatively standardized. First, anneal the finished casting by heating and quenching and then harden by heating and slow cooling. (Refer to specific alloy manufacturer for temperatures and detailed hardening technique.) This is a simple step that can ensure a successful case.

WARNING: Great care must be taken when using debubblers on plastic patterns. These materials may present problems in investing and burnout of the patterns. You must be sure that there are no puddles in or around the attachment. Also take care to fill the inside of the female pattern with a small brush before investing the rest of the pattern.

Finishing the Cast ERA® Females

Females are divested in a normal fashion by either sandblasting lightly or stripping in ultra-sonic solution. Care should be taken that the inside of the female is not over sandblasted as this will oversize the female eyelet. Glass beads or light polishing with rubber points can be used to create a clean finished look to this interior surface. The outside surface is not a crucial dimension and can be rubber wheeled and polished but should not require stone or carbide finishing.

Parallelism

ERA Attachments have been designed to function properly up to a divergence of 7°. If the attachments are off by more than 7° you will not realize maximum life span of the males and could incur considerable wear on the females along with displacement of the prosthesis.

Path of Insertion

We would like to stress the importance of a short flange in the anterior region. Appliances designed to engage the labial undercut will interfere with proper seating. In cases of deep labial undercut, it should be blocked out before the processing of the denture base. Engage no more than 1 mm of undercut. Full extension of the flange into the vestibule will still provide lip support and help prevent food entrapment.



ERA® Implant Abutment

The smallest prosthetic head and the only with true vertical resiliency!

ERA® Abutments are manufactured for most popular screw and cylinder implants. Components and product numbers vary with the implant type. Refer to the ERA® ordering information on this page for compatibility. For ease in ordering, reference the group letter.

Call 800-243-9942 for assistance in ordering or go online to www.sterngold.com for an interactive ERA Implant Abutment Selection Chart. The direct link to the chart is: www.sterngold.com/SternGold/Implants/ERA_Select.aspx



ERA® Implant Abutments fit the following implants:

SIZE	MANUFACTURER	GROUP
SternGold-ImplaMed®		
3.3	Hex Cylinder	A
3.3	NP Self-tapping Hex Screw	W
3.3	NP Acid Etched	W
4.0	Hex Cylinder	A
3.75	Standard Hex Screw	A
3.75	Self-tapping Hex Screw	A
3.75	Self-tapping "SST" Hex Screw	A
4.0	Standard Hex Screw	A
4.0	Self-tapping Hex Screw	A
4.0	Self-tapping "SST" Hex Screw	A
5.0	RP "SST" Hex Screw	A
3.75	RP Acid Etched	A
4.0	RP Acid Etched	A
5.0	RP Acid Etched	A
5.0	WP Self-tapping Hex Screw	M
6.0	WP Self-tapping Hex Screw	M
3.3	Stern IC (4.8 head)	S
4.1	Stern IC (4.8 head)	S
Nobel Biocare Brånemark System®		
3.3	NP Nobel Speedy™ Groovy (ext.hex)	W
3.3	Fixture	A
3.3	NP Mk II	W
3.3	NP Mk III	W
3.75	Fixture	A
4.0	Fixture	A
5.0	Fixture (Old Version)	A
3.75	MkII, Self-tapping Fixture	A
4.0	MkII, Self-tapping Fixture	A
5.0	MkII, Self-tapping Fixture	M
5.5	MkII, Self-tapping Fixture	M
5.0	MkIV, Self-tapping Fixture	M
Nobel Biocare (Steri-Oss®)		
3.8	HL Cylinder	A
3.8	HL Threaded	A
4.5	HL Threaded	A
3.8	Cylindrical	D
3.8	Threaded	D
4.0	Steri-Oss	D
3.25	Cylindrical	L
3.5	Replace® Select & NobelReplace™ (NP)	Z
4.3	Replace® Select & NobelReplace™ (RP)	T
5.0	NobelReplace™ (WP)	AN
4.3	Nobel Active RP (3.9 head)	AP
5.0	Nobel Active RP (3.9 head)	AP
Interpore IMZ™		
3.3	Hex Cylinder	A
3.75	Self-tapping Threaded	A
4.0	Hex Cylinder	A
4.0	Self-tapping Threaded	A
4.25	Hex Cylinder	A
4.0	Cylinder	F
4.25	Cylinder	F
3.3	Cylinder	G
Straumann		
3.3	ITI TE™ (4.8 head)	S
3.3	ITI Std. & Std. Plus (4.8 head)	S
4.1	ITI TE™ (4.8 head)	S
4.1	ITI Std. & Std. Plus (4.8 head)	S
4.8	ITI Std. & Std. Plus (4.8 head)	S
Henry Schein®		
4.3	Camlog	AH
"O" Company		
3.25	Anti Rotational	E
4.0	Anti Rotational	D
Astra Tech		
3.5/4.0	Aqua	AK
4.5/5.0	Lilac	AJ

SIZE	MANUFACTURER	GROUP
BioHorizons®		
3.5	Internal	B
4.5	Internal	C
3.5	Single Stage	B
4.5	Single Stage	C
Osstem		
3.5	US II, II Plus	W
4.1	US II, III, II Plus, III Plus	A
	SI, II, III (4.8 head)	S
3i Implant Innovations®		
3.25	External Hex Miniplant®	A
3.25	ICE™ Miniplant®	A
3.25	OSSEOTITE® Miniplant®	A
3.25	Internal Hex Miniplant®	E
3.3	Cylinder Miniplant®	A
3.3	External Hex Cylinder	A
3.75	ICE™ Self-tapping	A
3.75	OSSEOTITE®	A
3.75	Self-tapping Threaded	A
3.75	Standard Threaded	A
4.0	External Hex Cylinder	A
4.0	ICE™ Self-tapping	A
4.0	OSSEOTITE®	A
4.0	OSSEOTITE® Certain™	X
4.0	OSSEOTITE® NT Certain™	X
4.0	OSSEOTITE® CERTAIN PREVAIL	X
4.0	Standard Threaded	A
4.25	External Hex Cylinder	A
	TG OSSEOTITE® (4.8 Platform)	S
5.0	OSSEOTITE® Certain™	X
5.0	OSSEOTITE® NT Certain™	X
5.0	OSSEOTITE® CERTAIN PREVAIL	X
Zimmer (Paragon, Centerpulse)		
3.5	Bio-Vent® XT™	A
3.75	Swede-Vent™ Conical Neck CST	A
3.75	Swede-Vent™ Standard	A
4.0	Swede-Vent™ Standard	A
4.0	Bio-Vent® XT™	A
3.25	Micro-Vent® (3.5 head)	B
3.3	Screw-Vent® (3.5 head)	B
3.5	Bio-Vent® (3.5 head)	B
3.7	Screw-Vent® (3.5 head)	B
3.75	Screw-Vent® (3.5 head)	B
4.3	Core-Vent® (3.5 head)	B
4.25	Micro-Vent® (4.5 head)	C
4.5	Bio-Vent® (4.5 head)	C
4.7	Screw-Vent® (4.5 head)	C
5.3	Core-Vent® (4.5 head)	C
3.7	Tapered Swiss Plus™ (4.8 platform)	S
4.8	Tapered Swiss Plus™	S
4.1	Straight Swiss Plus™	S
4.8	Straight Swiss Plus™	S
Zimmer (Calcitek®, Centerpulse)		
3.25	Integral®	E
3.25	Omniloc®	E
3.75	ThreadLoc™	A
4.0	Integral®	D
4.0	Omniloc®	H
3.25	Spline®	J
3.75	Spline®	K
4.0	Spline®	K
Keystone (Lifecore)		
3.75	Restore® Self-tapping Screw	A
4.0	Restore® Self-tapping Screw	A
3.75	Restore® External Hex Screw	A
4.0	Restore® External Hex Screw	A
4.0	Restore® External Hex Cylinder	A
4.2	Sustain® External Hex Cylinder	A
3.75	Sustain® External Hex Screw	A

SIZE	MANUFACTURER	GROUP
4.0	Sustain® External Hex Screw	A
4.2	Sustain® External Hex MC Cylinder	A
4.0	Sustain® Internal Bevel	D
3.3	Stage-1™	S
4.0	Stage-1™	S
4.1	PrimaConnex®	AL
IMTEC Corporation®		
3.3	Universal Flare Cylinder	A
3.75	Universal Self-tapping	A
3.75	Universal Self-tapping Coated	A
4.0	Spike Cylinder	A
4.0	Universal Cylinder	A
Minimatic/Strvker		
3.3	External Hex Cylinder	A
3.75	External Hex Screw	A
4.0	External Hex Cylinder	A
4.0	External Hex Screw	A
4.75	External Hex Screw	A
5.0	External Hex Cylinder	A
OIC		
3.0	Osteo Standard ST	A
3.25	Osteo Standard ST	A
3.75	Osteo Standard ST	A
INNOVA		
4.1	ENDOPORE® Ext. Connection	A
4.0	ENTEGRAM™ Ext. Connection	A
Bud		
3.25	Bud Screwvent	A
3.75	Bud Screwvent	A
Biolok International		
4.5	Silhouette Screw	A
4.0	Micro-Lok Screw	A
4.0	Micro-Lok Cylinder	A
3.75	Micro-Lok Screw	A
3.3	Micro-Lok Cylinder	A
Implant Direct		
3.5	Legacy	B
4.5	Legacy	C
3.5	RePlant™	Z
4.3	RePlant™	T
3.7	ScrewPlant	B
4.7	ScrewPlant	C
Dentsply		
3.5	Ankylos	AE
4.5	Ankylos	AE
5.5	Ankylos	AE
3.8	FRIALIT® Plus	AC
3.8	XiVe® Plus	AC
3.8	XiVe® TG Plus	AC
4.5	FRIALIT® Plus	AD
4.5	XiVe® Plus	AD
4.5	XiVe® TG Plus	AD
MIS		
3.3	Internal Hex**	B
3.75	Internal Hex**	B
4.20	Internal Hex**	B
5.0	Internal Hex**	C

** these can be either the Biocom or Seven Implants

ERA Micro or Standard Head
ERA Micro Head only
ERA Standard Head only

Product names are trademarks or registered trademarks of their respective companies. ERA® is protected by U.S. patents 4,540,367; 5,120,222 and 5,195,891; and other foreign patents.



Order online at www.sterngold.com

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