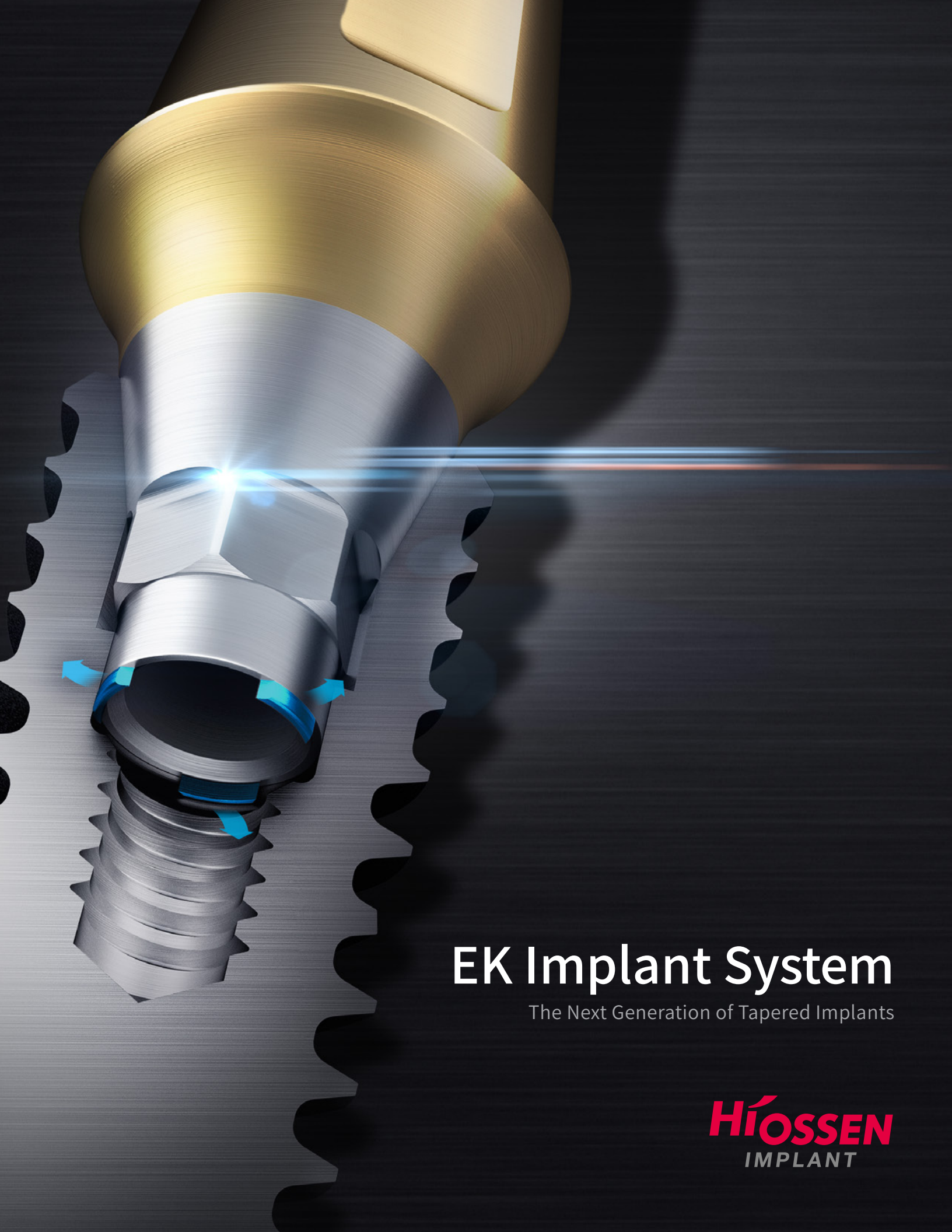


EK Implant System

The Next Generation of Tapered Implants

HIOSSEN IMPLANT

New Implant, New Possibilities

Clinicians are consistently seeking ways to reduce chair time, enhance efficiency, and ensure safety while addressing the unique requirements of each patient. Simultaneously, patients are increasingly anticipating esthetically satisfying outcomes in the least possible time.

Hiossen proudly presents the Exceptional Key (EK) Implant System, a comprehensive solution designed to effectively address the patients' needs while providing cost-efficient and time-saving benefits.

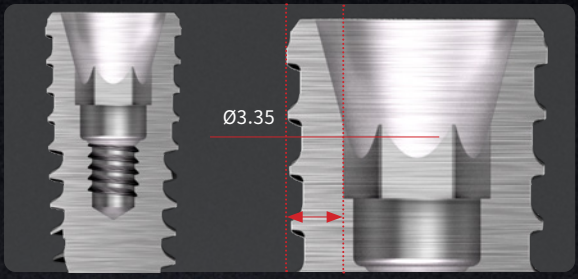
The EK Implant System, which embodies precision, performance, and the perfection, produces viable results by combining excellent cell response with robust initial stability that shortens healing time and contributes to the implant's long-term survival rate.

The EK Implant System stands as a testament to precision and performance, delivering exceptional outcomes by leveraging superior cell response and strong initial stability. This combination not only accelerates the healing process but also enhances the implant's long-term survival rate, ensuring successful results for your patients.

Hiossen NH Surface Treatment

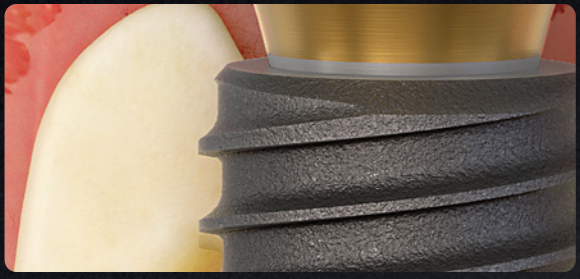
The EK system comprises fundamental Hiossen implant designs across all Hiossen Implant Systems.

The EK Implant is founded on six key factors focused on bone preservation, forming a critical basis for achieving esthetically pleasing and functional outcomes.



1. Enhanced durability

Enhanced coronal wall thickness and a deeper implant-to-abutment contact



4. Bone Control Design

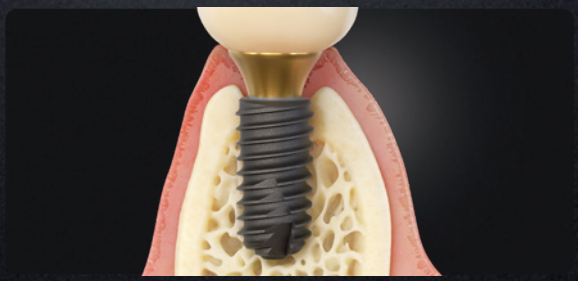
Respecting the biological width

2. Abutment Holding System

Engage an abutment single handedly in the maxilla

5. NH Surface Treatment

Super hydrophilic surface boosts osseointegration by increasing blood adhesion



3. Easy Depth Control

Optimized tapered body design to control depth of implant placement

6. One Connection

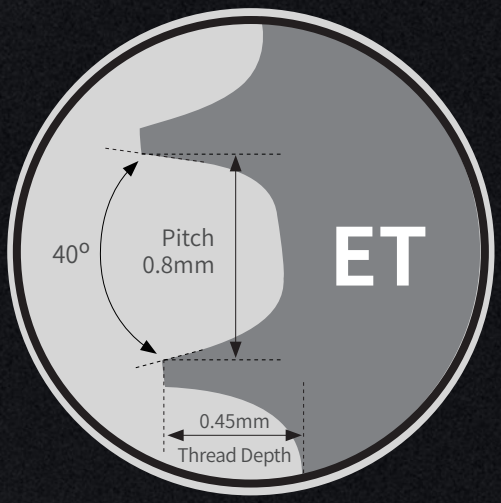
Single platform across all implant diameters and all prosthetic options

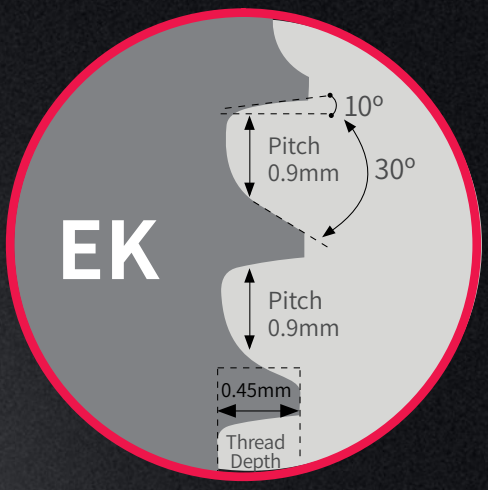
Exceptional Key Solution for Stronger Dental Implants

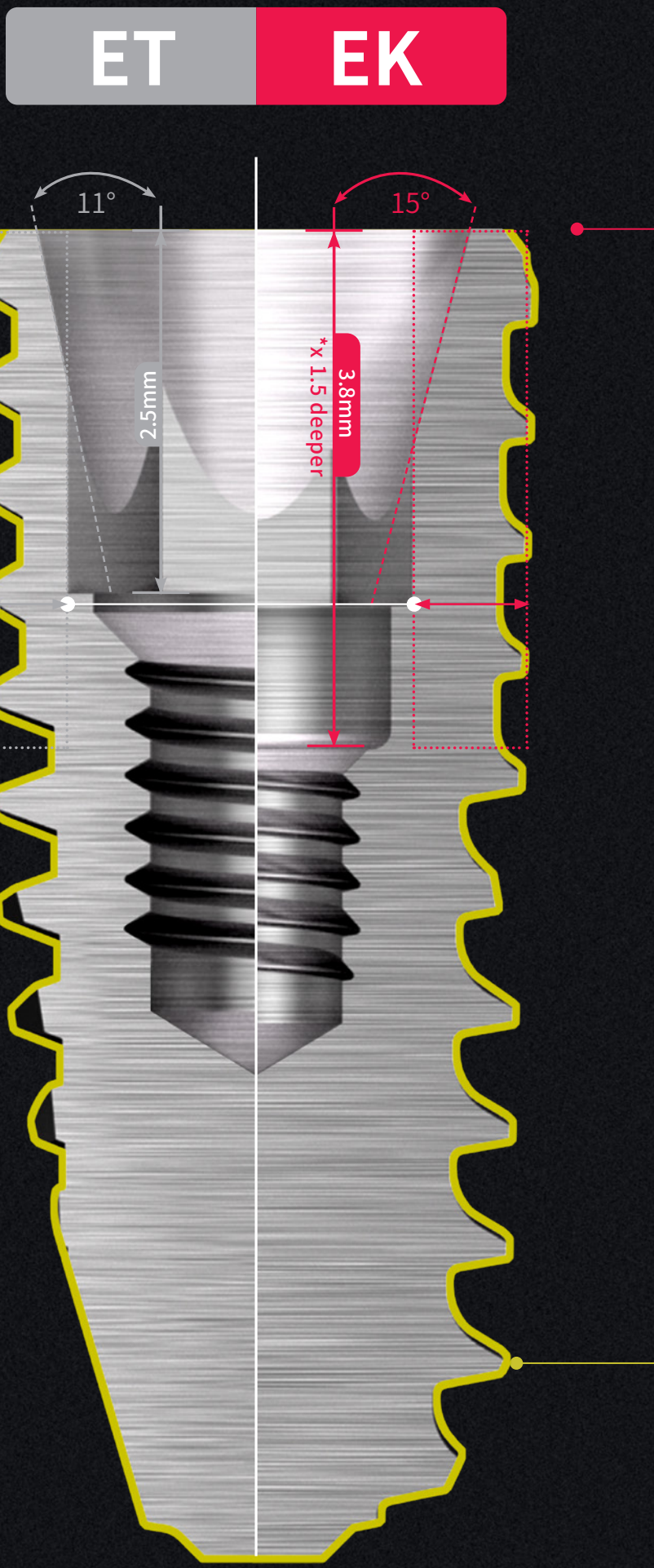
EK implants feature a 15-degree taper angle, strategically boosting the coronal wall thickness of the implant neck. This design enhancement significantly improves fracture resistance and overall strength. Its primary objective is to enhance the load-bearing capacity and screw joint stability within the internal implant-abutment connection, resulting in a more durable and reliable solution for patients.

Exceptional Key Solution

The Hiossen EK System boasts a distinctive internal design that fortifies the strength of the implant neck's coronal aspect, a critical area prone to fracture. This unique design feature ensures increased resilience, offering enhanced protection against potential fractures and reinforcing the implant's overall longevity.







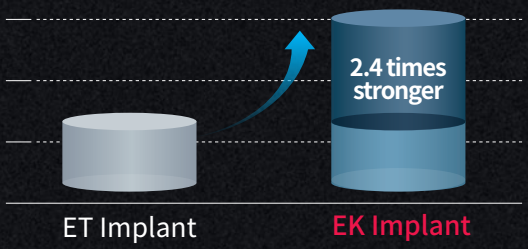
Enhanced strength

is achieved through augmented thickness of the coronal wall and a more profound connection between the implant and abutment. The EK Implant, characterized by its 15-degree Morse angle, enhances the thickness of the implant neck, resulting in improved resistance to fractures. The implant features a contact surface that extends 1.5 times deeper, effectively bolstering its ability to withstand occlusion forces.[4]

*Compared to ET implant-abutment contact surface

Fatigue test under cyclic loading

Fatigue Cycle



Tapered Body Design

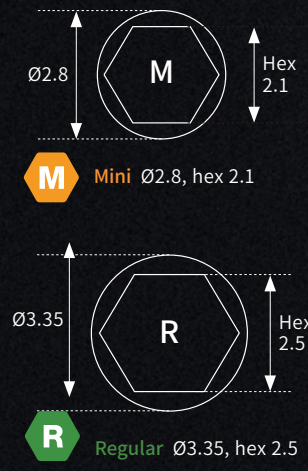
Provides greater lateral compression of the bone during implant insertion.[1,2] This could lead to an increase in primary stability by enlarging the BIC (bone-to-implant contact) area in any bone type.[3]

Implant System

ET: Internal hex 11° Morse Taper Design	**EK:** Internal hex 15° Morse Taper Design

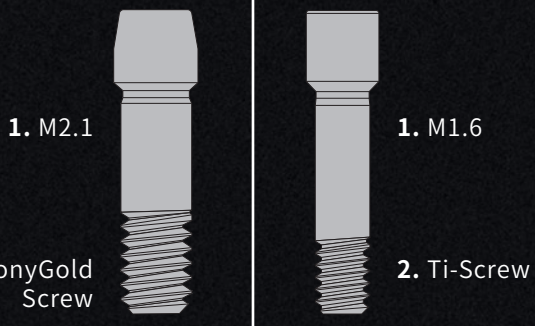
Platform

ET	EK



Screw Design

ET	EK



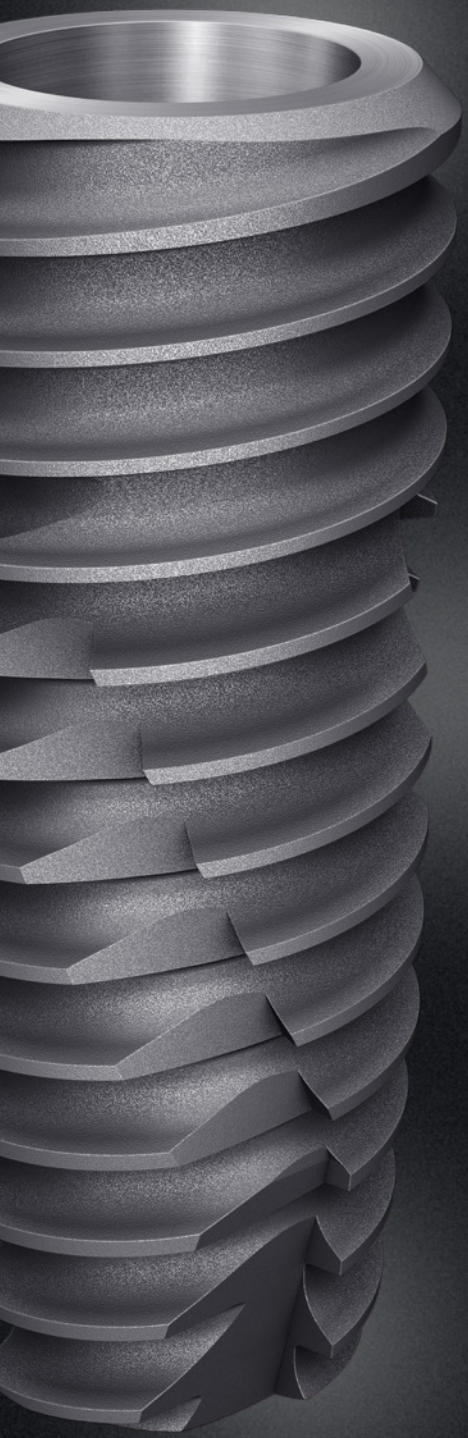
** This comparison is applicable for ET regular implant diameter 4.0 and above.

Advantages of EK Abutment Screw Design

1. A longer implant-abutment interface compensates for biochemical resistance and stress distribution of the screw although the screw diameter is smaller
2. Smaller screw access hole increases the aesthetic satisfaction during the final restoration

Systematic Bone Control

The combination of the following characteristics makes the EK Implant system capable of treating a wide range of indications with optimal primary stability and immediate procedures for all bone types



Bone Control Design: **Open Thread**

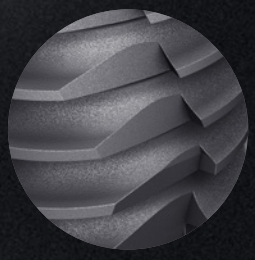
Maximize crestal bone preservation for slightly subcrestal implant placement

Aggressive Thread Design

Aggressive corkscrew threads for easy insertion from normal to challenging clinical cases.

Fully Tapered Implant

Tapered body and vigorous threads provide better primary stability



Triple Helix Cutting Edge

Prevents over-torquing during placement. Cuts and collects autogenous bone chips and distributes them around the implant body.

Deep Apical Threads

End cutting, self-tapping thread design allow for controlled implant placement even in challenging cases

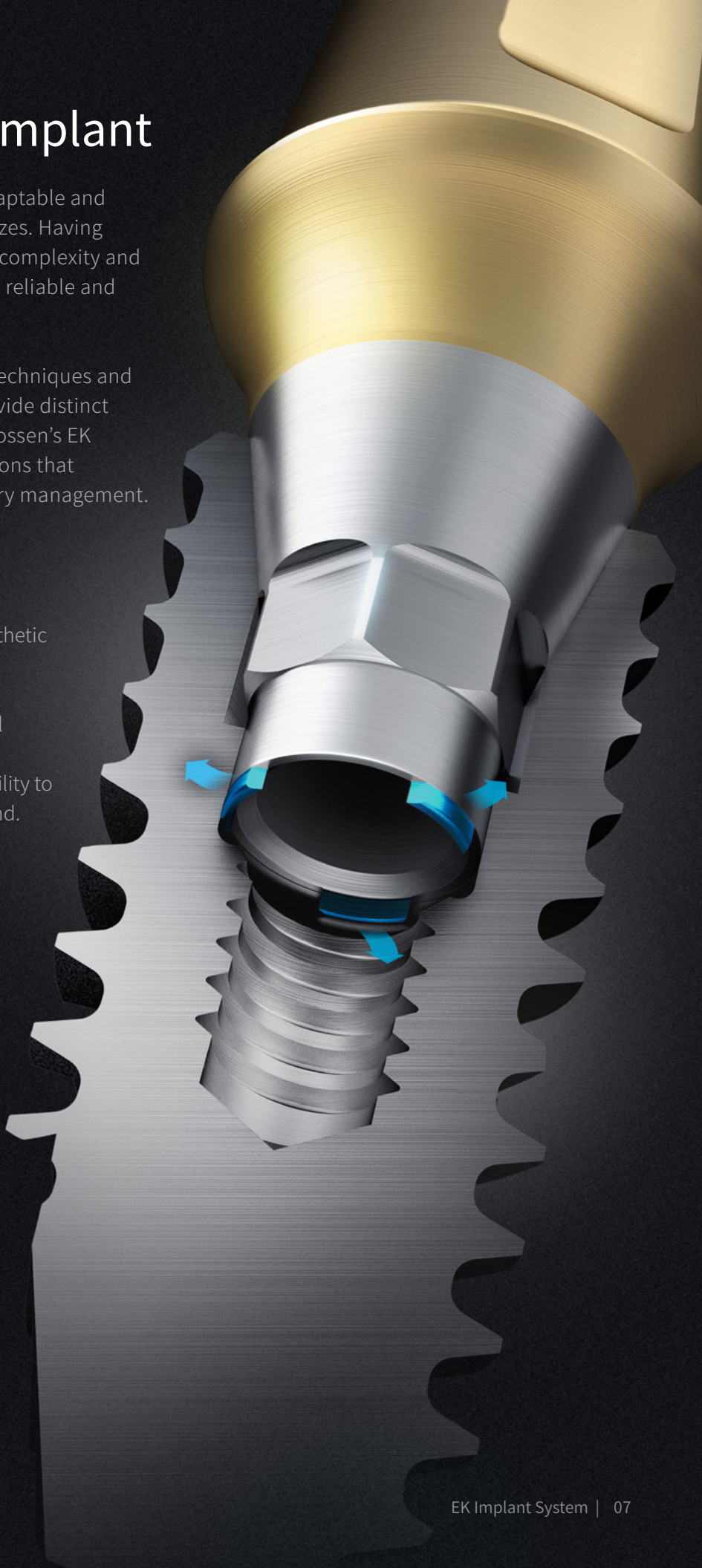
One Connection Implant

A single prosthetic platform allows for adaptable and flexible treatment across all EK Implant sizes. Having fewer components in the system reduces complexity and improves efficiency. The outcomes offer a reliable and economical resolution.

By integrating advancements in surgical techniques and prosthetic restoration, EK prosthetics provide distinct benefits for the complete dental team. Hiossen's EK Implant series delivers dependable solutions that reduces chair time and improved inventory management.

Features

- Single platform for all surgery and prosthetic treatments
- Less components to alleviate complex inventory managements by both dental practices and laboratories.
- Streamlined process enabled by the ability to secure the abutment using just one hand.
- Less chance of prosthetic failure



Convenient **Single Platform** for Prosthesis

EK abutment is compatible with all diameter of implants

※ ET and EK abutments are not compatible

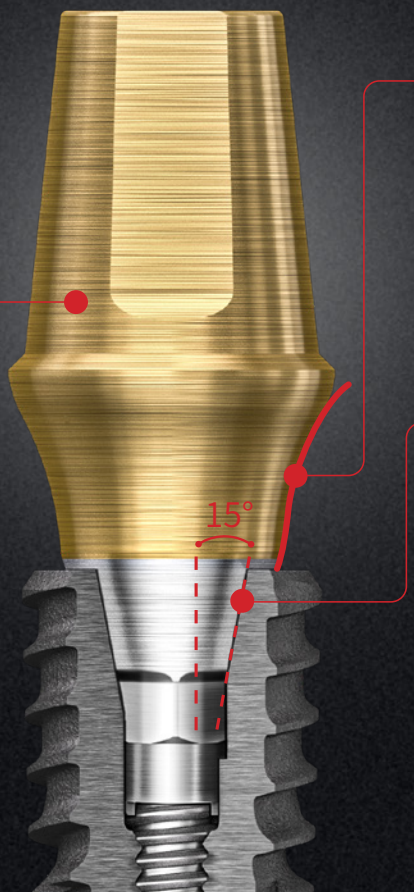
※ Ø3.2, Ø6.0 & Ø7.0 are currently not available

Stronger Connection with Esthetic Expectation

Gold Hue Abutment

The gingival attachment and crown region showcase a distinctive golden hue, amplifying both aesthetic and functional benefits through with reflectivity and increased strength.

The top portion of the abutment possesses reflective qualities that, when paired with an all-ceramic restoration, yields a visually pleasing aesthetic outcome.



Excellent Soft Tissue Response

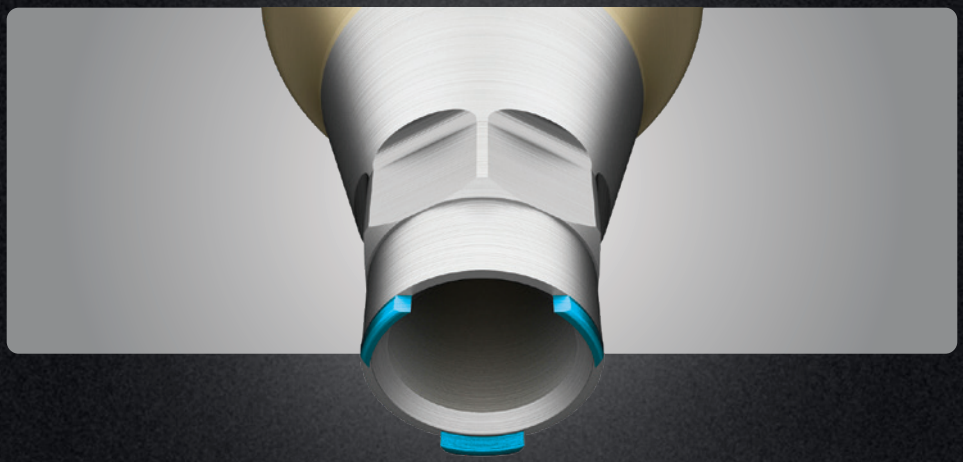
The abutment design engages a more natural emergence profile.

15° Morse Tapered Hex Connection

15 degree Morse taper contact for excellent load distribution. Conical connection for superior abutment fit, stability and seal performance.

Hiossen Internal Hex Abutment
Holding System

The EK abutment holding system simplifies the process of placing the abutment by allowing for single-handed engagement in the upper jaw. This enhances the ease of abutment seating, regardless of the patient's mouth opening size.



Abutment Holding System

Benefits

Other Implant Systems

The holding system is engineered to securely affix the abutment to the implant connection prior to screw tightening, guaranteeing its stability in the maxilla and preventing detachment.

EK Implant System

Safeguards against upward displacement and misalignment of the abutment by the gingival tissue.

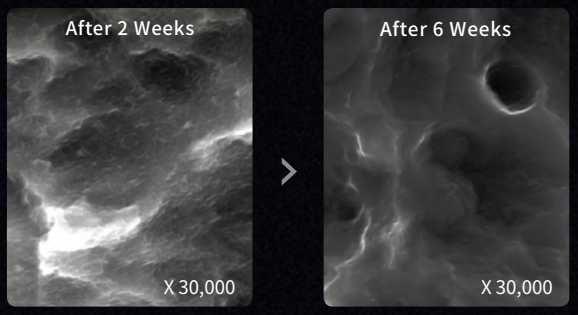
Hiossen NH Surface Treatment

Faster Bone Healing. Improved Osseointegration.

Research indicates that the surface treatment of the implant plays a pivotal role in fostering osseointegration. By incorporating an improved implant surface, Hiossen's implants have achieved expedited osseointegration, resulting in enhanced stability and reduced chair time.

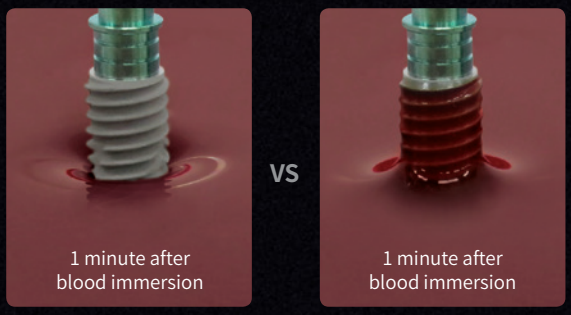
Hiossen's nano-hydrophilic surface incorporates a distinctive treatment that combines a hydrophilic surface area with low crystalline nano-hydroxyapatite (HA). This super hydrophilic NH surface significantly enhances osseointegration by promoting greater blood adhesion. The NH surface treatment yields impressive healing effectiveness, as evidenced by the success rate of dental implants in patients with bone loss. This coating draws blood to the titanium surface, facilitating swift woven bone formation by bolstering initial implant stability and amplifying the implant's capacity for bone formation and remodeling.

1. Kim, Duck-Rae et al. "Self-cutting blades and their influence on primary stability of tapered dental implants in a simulated low-density bone model: a laboratory study." Oral surgery, oral medicine, oral pathology, oral radiology, and endodontics vol. 112,5 (2011): 573-80. doi:10.1016/j.tripleo.2010.12.001
2. Kim, Yung-Soo, and Young-Jun Lim. "Primary stability and self-tapping blades: biomechanical assessment of dental implants in medium-density bone." Clinical oral implants research vol. 22,10 (2011): 1179-1184. doi:10.1111/j1600-0501.2010.02089.x
3. Tabassum, Afsheen et al. "Combined effect of undersized surgical technique and axial compression on the primary implant stability and host bone architecture." The Saudi dental journal vol. 33,5 (2021): 283-291. doi:10.1016/j.sdentj.2020.03.004
4. Lee, Ji-Hye et al. "Effect of the Coronal Wall Thickness of Dental Implants on the Screw Joint Stability in the Internal Implant-Abutment Connection." The International journal of oral & maxillofacia l implants vol. 31,5 (2016): 1058-65. doi:10.11607/jomi.4600
5. López-Valverde, Nansi et al. "Bioactive Surfaces vs. Conventional Surfaces in Titanium Dental Implants: A Comparative Systematic Review." Journal of clinical medicine vol. 9,7 2047. 29 Jun. 2020, doi:10.3390/ icm9072047
6. Schwarz, Frank et al. "Potential of chemically modified hydrophilic surface characteristics to support tissue integration of titanium dental implants." Journal of biomedical materials research. Part B, Applied biomaterials vol. 88,2 (2009): 544-57. doi:10.1002/ jbm.b.31233



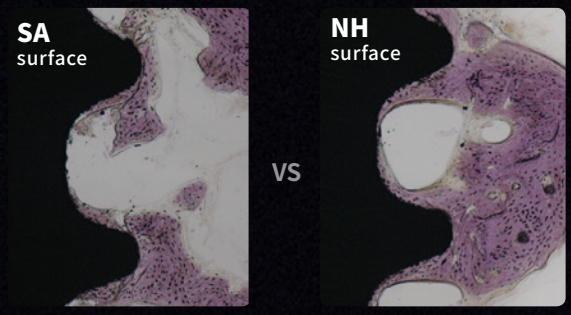
Coating layer is present — Coating layer is absorbed

Bioresorbable apatite:
Bone forms directly to the SA surface as the apatite layer is resorbed during osseointegration



Hydrophobic — Super Hydrophilic

Super Hydrophilic
12% increase in platelet adhesion (better initial osseointegration) and a 12% increase in cell differentiation (faster osseointegration)



Significant Improvement to BIC
The super hydrophlic bioresorbable apatite increases Bone to Implant Contact (BIC) by 39% compared to SA[5]

NH Treatment

Hydrophilic properties on the implant body facilitates cell differentiation and growth factor.[6]

HIOSSEN IMPLANT

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