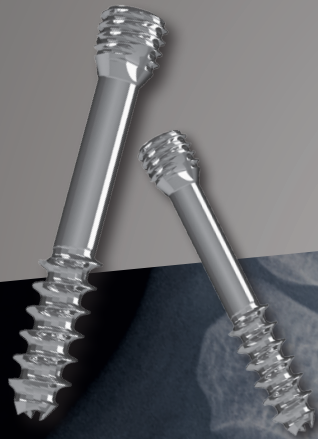


FACETED THREADFORM TECHNOLOGY

The New Fixation Standard in Orthopedics



DIAMOND
ORTHOPEDIC

Diamond Orthopedic's Proprietary Bone Screw Technology Is Revolutionizing Orthopedic Fixation

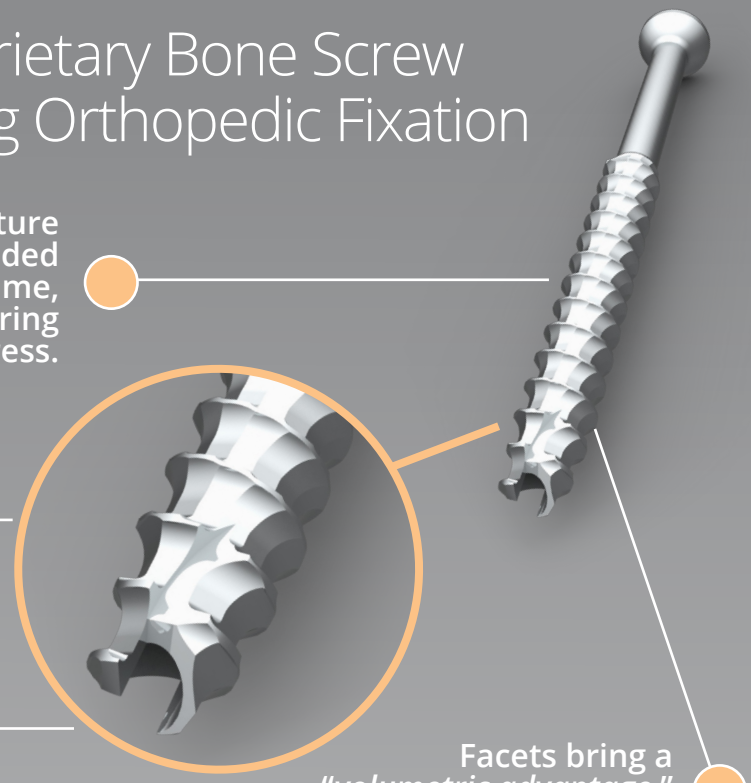
Diamond Orthopedic bone screws feature an enhanced design where facets are added to screw threads, increasing thread volume, fostering better engagement with neighboring bone, and lowering compressive stress.

Facets create 'peaks' and 'valleys' on screw threads. The 'peaks' serve as the initial area of bone/screw contact during insertion, which reduces friction and results in ~50% less torque required for insertion.

Immediately following insertion, bone relaxes into facet 'valleys,' enabling greater bone/screw contact than the typical helical screw.

(See pullout strength comparison next page)

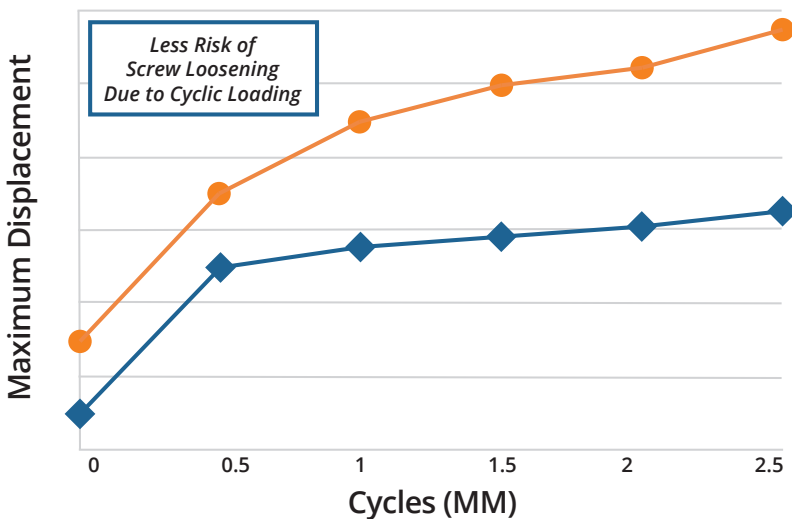
Facets bring a "volumetric advantage," with thread valleys holding up to 20% more bone volume, enabling greater pullout strength and toggle performance.



Biomechanical Characteristics

FIXATION INTEGRITY

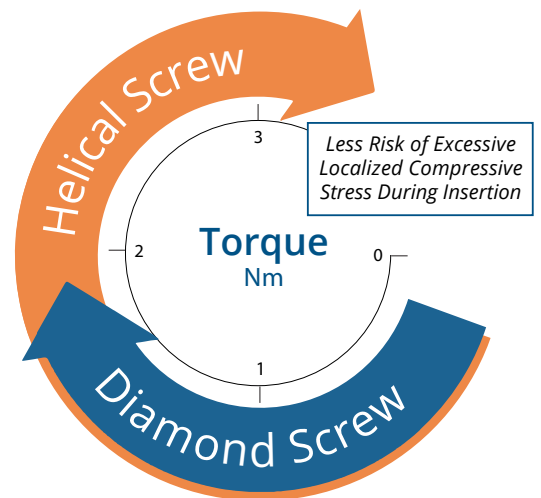
Improved fixation demonstrated in toggle test^[A]



Less Risk of Screw Loosening Due to Cyclic Loading

INSERTIONAL TORQUE

~50% less than competitor^[A]



Less Risk of Excessive Localized Compressive Stress During Insertion

Graph Color Legend: **Diamond** **Helical**

[A] Based on studies conducted at Orthokinetic Testing Technologies; tested in biological and non-biological test substrates. Data on file.



THE FACET ANSWER TO COMPRESSIVE STRESS

Compressive stress generated by traditional threads can cause microfractures, damage bone, and can create a narrow, high-stress core susceptible to pullout failure. A faceted screw's ability to generate lower compressive stress brings a new and unique way to address this issue.

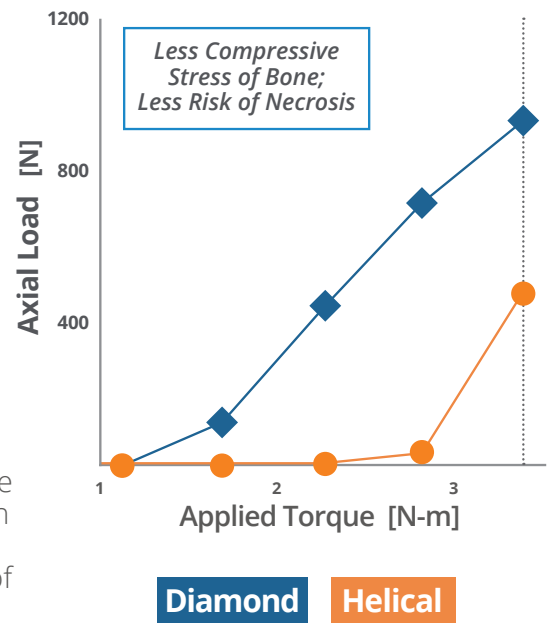
INSERTION - Less Stress of Bone

The faceted thread's unique design reduces friction during insertion. Facet 'valleys' serve as a bone stress 'relief mechanism,' resulting in ~50% lower insertional torque and less potential for microfractures and necrosis.

POST-INSERTION - Bone Engagement

After insertion, the facet "valleys" also promote restoration of bone against the screw flanks, creating a firm grip that increases fixation and retention strength, and reduces post-insertion compressive stress. Faceted screws distribute the load over a greater volume of bone and significantly increase the peak pullout load.^[B]

TORQUE CONVERSION
50% greater than competitor at 3.5 Nm^[A]



Diamond Faceted Screw Out-Performs Market Leading Helical Screw In Pullout Strength

In an in vivo ovine study, the Diamond Orthopedic faceted screw demonstrated statistically significant 61% greater pullout strength within 2 weeks of surgery.

PULLOUT STRENGTH (POST-OP)^[B]

0 WEEKS
20%
GREATER PULLOUT STRENGTH

2 WEEKS
61%
GREATER PULLOUT STRENGTH



[A] Based on studies conducted at Orthokinetic Testing Technologies; tested in biological and non-biological test substrates. Data on file.

[B] Based on in vivo ovine testing conducted at OrthoKinetic Testing Technologies as compared to market leading helical screw with same profile. Additional validation testing has been performed in non-biological substrates. Data on file.

Diamond Orthopedic offers
faceted threadform technology for
orthopedic applications worldwide



1600 Camden Road
Charlotte, NC 28203
704-585-8270
Info@diamondortho.com