For Narrow

DENTIS IMPLANT SYSTEM



AXEL

Accelerate Confidence
With Every Placement

DENTIS

DENTIS

DISCOVER THE POSSIBILITIES

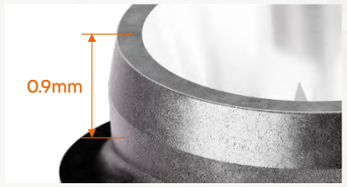
THROUGH OUR TECHNOLOGY AND DEDICATION,
WE CREATE NEW POSSIBILITIES THAT HELP RESTORE LIGHT TO THE LIVES OF
PATIENTS AND HEALTHCARE PROFESSIONALS IN NEED AROUND THE WORLD

AXEL

Accelerate Confidence with Every Placement.

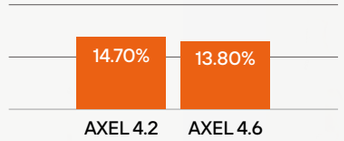
Stress-Free Neck Design

Reduces stress on the cortical bone to minimize bone loss, supports soft tissue volume, and enhances gingival esthetics.



Enhanced Upper Body

The reinforced upper body structure provides high resistance to functional load and stress, improving stress distribution by approximately 15% (based on Ø4.2 implant).



STRESS DISTRIBUTION
COMPARED TO NORMAL IMPLANT

Drive Thread™

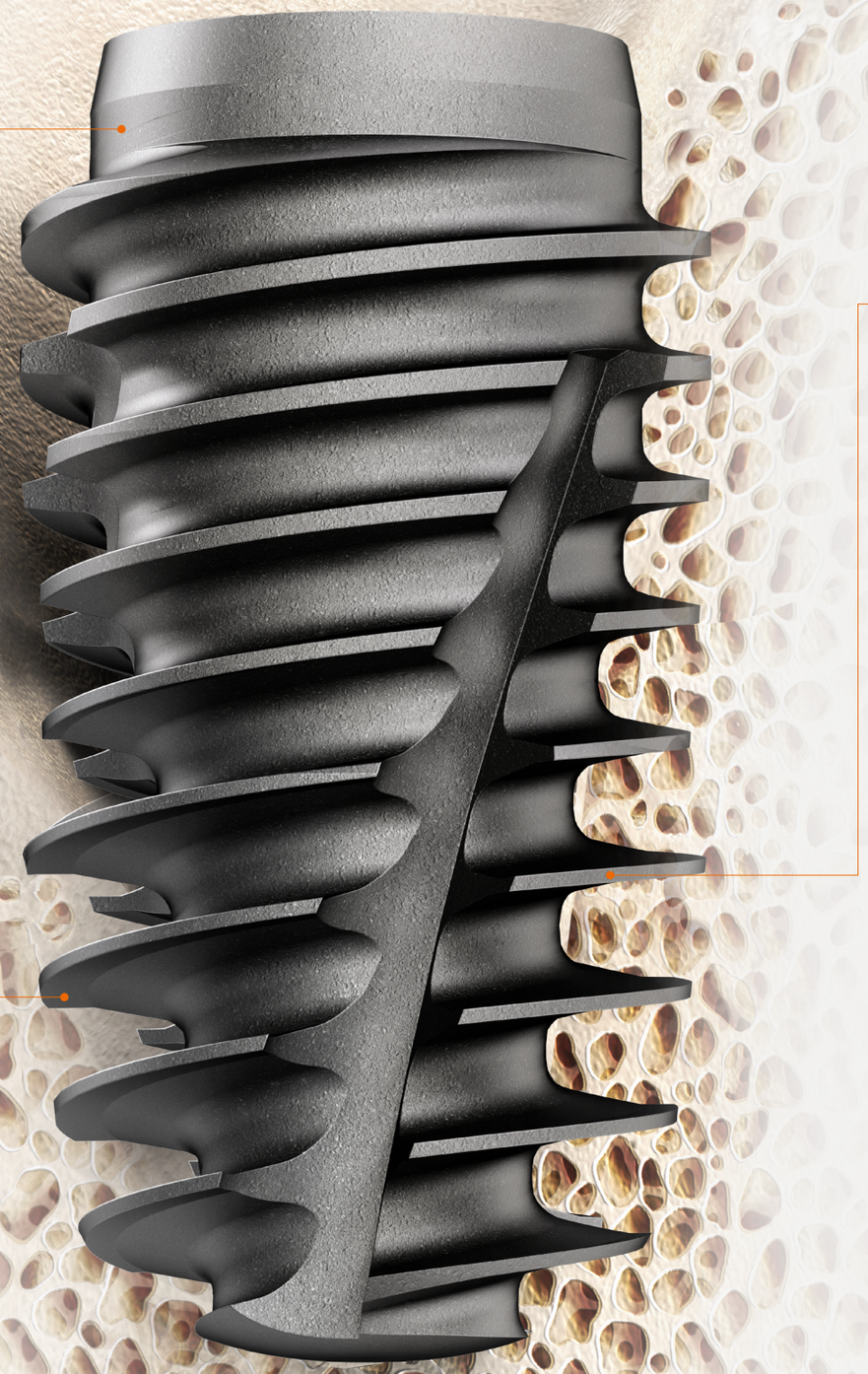
The 4 deep threads at the apex ensure strong primary stability, especially at 3–5 mm of the extraction socket.

Tapered & Narrow Apex

Improved initial insertion and fixation during

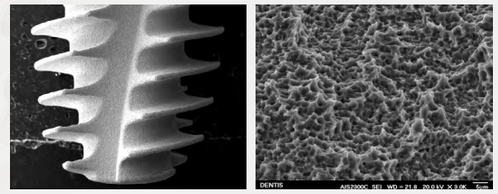


Optimized in Immediate Placement



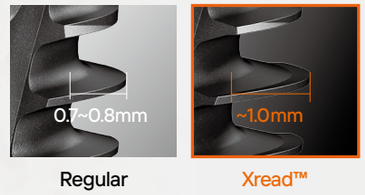
C-SLA®

Clean and safe SLA surface developed with DENTIS' exclusive technology.



AXEL Xread™

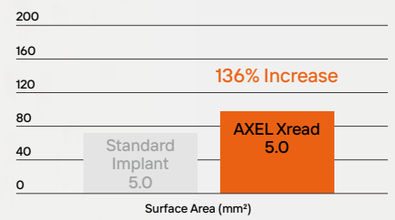
Optimized for soft bone, low bone density (D3/D4), and immediate placement in wide molar sockets.



Regular Xread™

Increased BIC (Bone-to-Implant Contact)

Increased bone-to-implant contact ensures strong primary stability at insertion.



Surface area measured 4mm from the apex (Drive Thread™) by DENTIS R&D

More detailed size options

Diameter options in 0.4 mm steps, and popular lengths in 0.5–1 mm intervals for clinical flexibility.



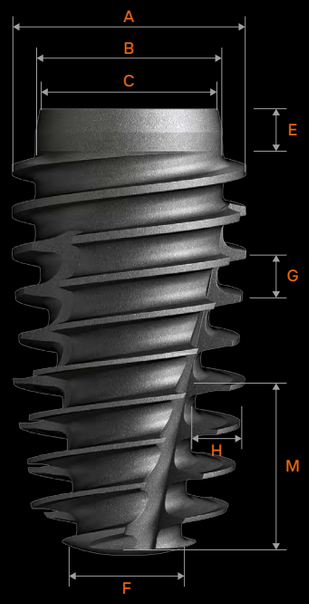
AXEL Technical Information

Length

The actual fixture length is designed to be 0.5 mm shorter than the nominal length (e.g., 8, 9, 10, 12, 14 mm).

KEY CONCEPT

- Fixture lengths are 0.5 mm shorter than nominal lengths to allow for subcrestal placement of 0.5–1.0 mm based on the crestal bone.
- Subcrestal placement has been shown to contribute to long-term clinical stability.
- AXEL fixtures are designed to enable safe, consistent subcrestal placement using the standard drilling protocol, without the need for a separate long drill.



Unit : mm

Specification		3.8 AXEL	4.2 AXEL	4.6 AXEL	5.0 AXEL Xread	5.0 AXEL	5.4 AXEL Xread
A	Maximum Outer Diameter	3.8	4.2	4.6	5	5	5.4
B	Bevel Diameter	3.4	3.8	4	4	4.4	4.4
C	Neck Diameter	3.2	3.7	3.8	3.8	4.2	4.2
E	Bevel Height	0.9	0.9	0.9	0.9	0.9	0.9
F	Apex Diameter	2	2.5	2.5	2.5	3	3
G	Thread Pitch	0.9	0.9	0.9	0.9	0.9	0.9
H	Maximum Thread Depth	0.7	0.7	0.8	1	0.8	1
M	DRIVE Thread™ Height *10mm Fixture	4	4	4	4	4	4

AXEL Fixture Line Up by Diameter

Core Diameter	Fixture Diameter							
	Ø 3.2 (Narrow)	Ø 3.8 (Narrow)	Ø 4.2	Ø 4.6	Ø 5	Ø 5.4	Ø 6	Ø 7
Ø 3.2	Coming Soon							
Thread Depth	0.5							
Ø 3.4								
Thread Depth		0.7						
Ø 3.8								
Thread Depth			0.7					
Ø 4								
Thread Depth				0.8	1.0			
Ø 4.4								
Thread Depth					0.8	1.0		
Ø 4.9							Coming Soon	
Thread Depth							1.1	
Ø 5.9								Coming Soon
Thread Depth								1.1
Length	7.5 8.5 9.5 11.5 13.5mm		7.0 7.5 8.5 9.5 11.5 13.5mm			7.0 7.5 8.5 9.5 11.5mm		

Anterior

Canine / Pre-molar

Molar

Molar (Immediate Post-Extraction Socket)

The selection of implant diameter and length should be made based on a comprehensive assessment of the patient's bone quality, occlusal forces, and anatomical considerations.

Xread™ products (with Thread Depth ≥ 1 mm) are generally recommended for use in cancellous bone or areas with low bone density (D3 or D4). They are also suggested as an effective alternative when sufficient primary stability cannot be achieved with the same core design, or when immediate placement is required in large molar extraction sockets.

01

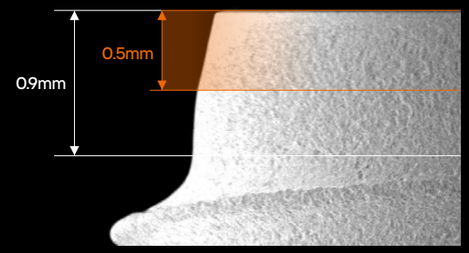
Stress-Free Neck Design

The 0.9 mm Thread-Free zone at the top of the fixture (Thread-Free Neck) reduces stress applied to the cortical bone and helps minimize crestal bone loss and supporting long-term clinical stability.

By not obtaining stability at the implant neck, stress on the cortical bone is minimized, which helps preserve more bone volume and supports a thicker soft tissue —ultimately contributing to an aesthetically pleasing gingival contour.

Additionally, the Stress-Free Neck design helps minimize micromovement and microgaps at the implant–bone interface, reducing the risk of bone loss and peri-implantitis.





Reversed Conical Neck Design

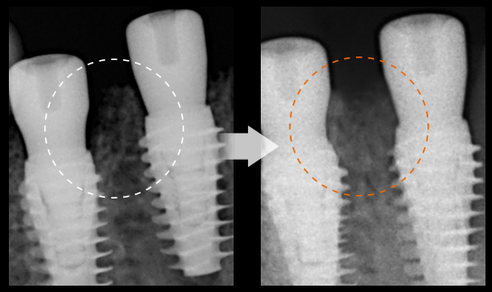
The 0.5 mm reverse tapered design at the top of the implant secures space for bone to be maintained around the crestal area, contributing to increased crestal bone volume.

By reducing stress in the crestal bone, it helps minimize the risk of bone resorption, supporting long-term implant stability.

This design also promotes the formation of the gingival papilla and helps maintain esthetic outcomes effectively.

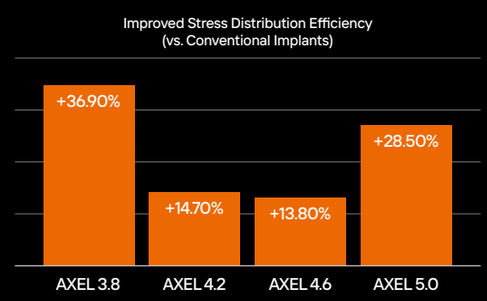
Bone Preservation and Growth

The Stress-Free & Reversed Conical Neck design facilitates stable bone formation around the neck area.



Immediately after implant placement

3 months after implant placement



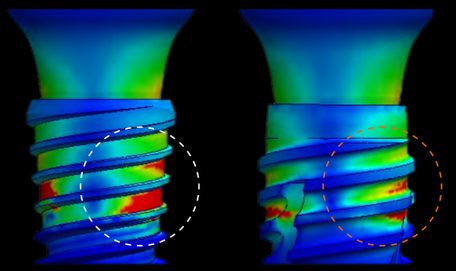
Enhanced Upper Body

The specially designed upper body and thread structure offer superior resistance to functional load and stress concentration.

Based on the Ø4.2 implant, stress distribution improved by approximately 15%.

The Finite Element Analysis was conducted by DENTIS R&D in accordance with ISO 14801:2016. The 4.6mm implant sample has a top diameter of 4.8mm, and the 5.0mm sample was evaluated in comparison to this 4.8mm top diameter model.

Finite Element Analysis confirmed that AXEL demonstrates a more uniform stress distribution and reduced stress concentration compared to conventional implants.



STANDARD 4.2

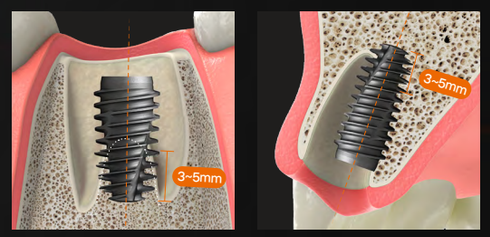
AXEL 4.2



02

Drive Thread™

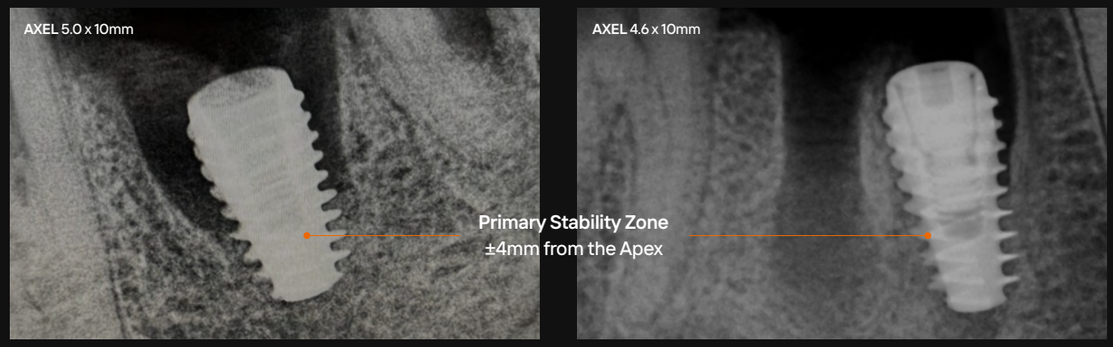
The apex of the AXEL implant features a 4-step deep and sharp thread structure.

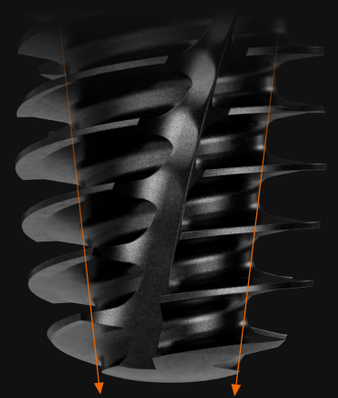


During immediate placement after extraction, primary stability is typically achieved **3–5 mm below the apex or in the molar septum**—making the apical design a critical factor.

Applied to a 4 mm zone from the apex in implants ≥10 mm, and 3 mm in 7–8 mm lengths.

IMMEDIATE IMPLANT PLACEMENT





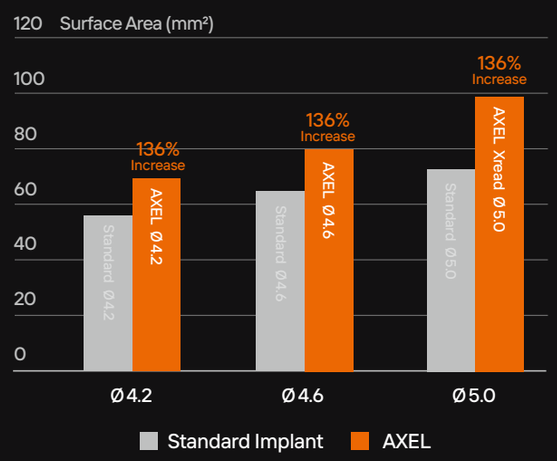
Tapered & Narrow Apex Design

The tapered and narrowing apical design facilitates easy insertion and precise direction control during initial placement.

Core angle in Drive Thread™ zone: 6.5° for ≥10 mm length, 10.6° for 7–8 mm length implants.

Increased BIC (Bone-to-Implant Contact)

Surface area measured 4mm from the Apex (Drive Thread™) by DENTIS R&D



The deep thread design increases bone-to-implant contact (BIC), contributing to strong primary stability at the implant apex.

It is particularly effective in poor bone quality, immediate placement, or early & immediate loading cases.

The sharp threads provide firm anchorage by engaging the bone tightly, allowing smooth insertion and solid fixation.

The tapered apex and sharp thread design enable the use of smaller-diameter drills, simplifying the drilling protocol.

The deep threads maximize BIC and help shorten healing time, supporting minimally invasive procedures.



AXEL Regular

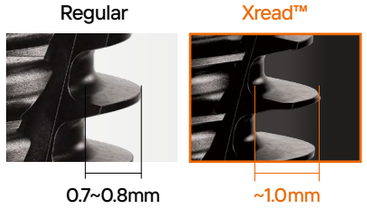
AXEL Xread™



Two Specialized Solutions Optimized for Surgical Conditions

Xread™ features a thread depth of ≥1 mm and is designed for placement in soft cancellous bone or areas with low bone density (D3–D4).

It is recommended as an effective alternative when conventional implants fail to achieve sufficient primary stability, or in immediate placement cases involving large molar extraction sockets.





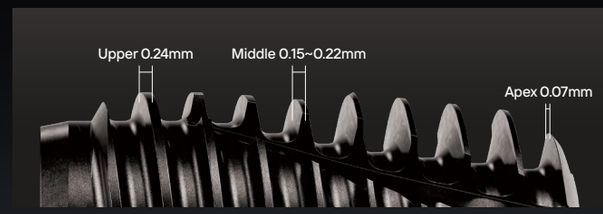
03

Dynamic Bone Chip Groove

A continuous groove that extends from the apex to the upper body is designed to retain bone chips generated during placement.
These bone chips remain on the implant surface, enhancing osseointegration and contributing to faster and stronger bone bonding.

Variable Thread Design

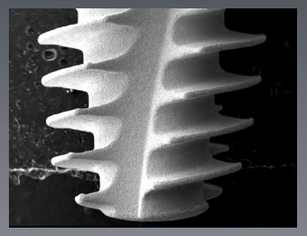
The gradually increasing thread thickness from apex to top promotes bone condensation, supporting stable implant placement.



04

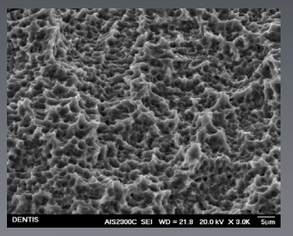
C-SLA® Surface & Pure Titanium GR4

C-SLA® technology combines SLA treatment with DENTIS' proprietary Clean-Tech™ process to eliminate surface residues and toxic elements.



Scanned the entire implant using high-resolution SEM mapping at 500× magnification across 400 images.

Full-Size High-Resolution (FSHR) SEM imaging was used to analyze the entire implant surface—from shoulder to apex—at a 120° viewing angle to verify surface quality with high precision.



Certified by the Clean Implant Foundation in Berlin, Germany.

Verified via SEM and EDS analysis for cleanliness and surface quality.

Clean Implant Foundation is a nonprofit organization that evaluates global implant safety and quality. Only a select few brands worldwide have passed its strict certification criteria.

Abutment Compatibility

The regular line features an 11° taper and 2.5 Hex connection, offering excellent compatibility with the DENTIS SQ system and most Korean brands.

No need for separate abutment purchases, improving cost-efficiency.

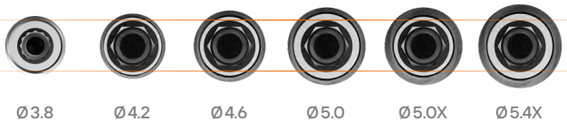


<Compatible with the whole OneQ & SQ>

More Refined Diameter and Length Options

Diameter

Available in 0.4 mm increments from Ø3.8 to Ø5.4 (based on maximum outer diameter), allowing clinicians to select the optimal diameter per case.



Length

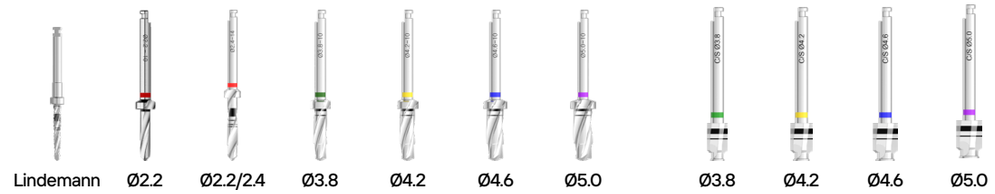
Popular lengths such as 7, 7.5, 8.5, and 9.5 mm are offered in 0.5–1 mm steps for precise selection based on clinical need.



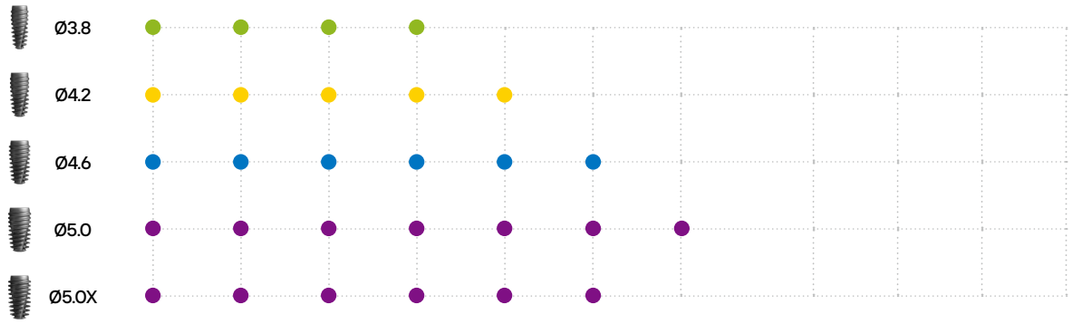
Intuitive Drilling Protocol

Unlike other aggressive-type implants, AXEL uses the same intuitive drilling protocol as the SQ system

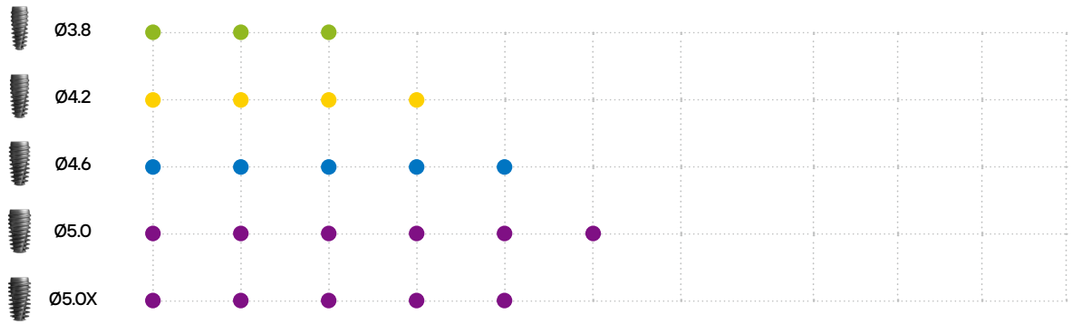
Despite its aggressive design, drilling is simple and straight forward based on implant diameter and kit markings—making it easy for even beginners to place.



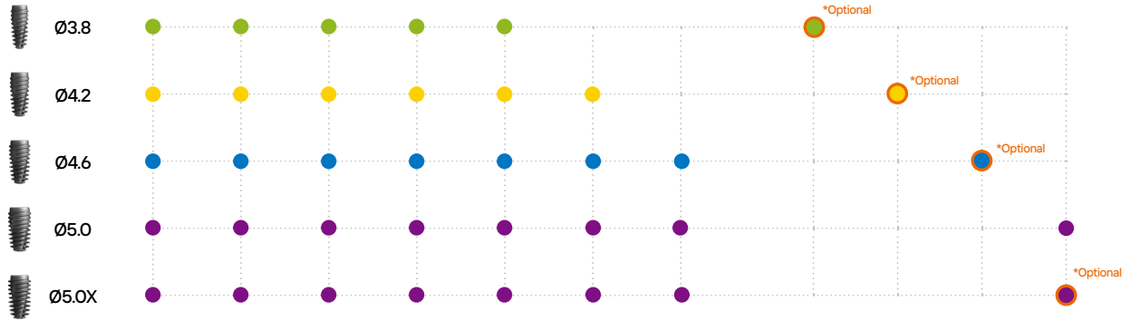
* Drilling Protocol (Normal Bone), D2



* Drilling Protocol (Soft Bone), D3 & D4



* Drilling Protocol (Hard Bone), D1



AXEL Fixture Line Up

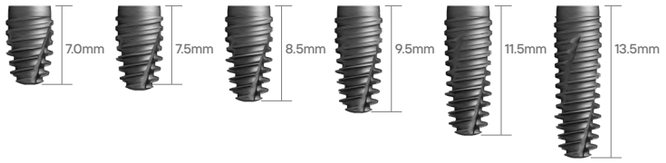
Narrow





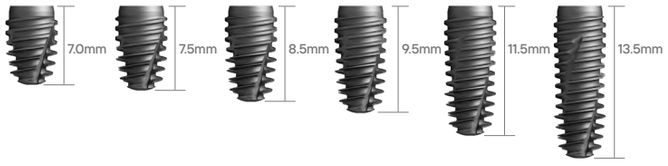
DIAMETER	LENGTH (MM)	CODE NO.
Ø3.8	7.5	DSAFN3808S
	8.5	DSAFN3809S
	9.5	DSAFN3810S
	11.5	DSAFN3812S
	13.5	DSAFN3814S

Regular





DIAMETER	LENGTH (MM)	CODE NO.
Ø4.2	7	DSAFR4207S
	7.5	DSAFR4208S
	8.5	DSAFR4209S
	9.5	DSAFR4210S
	11.5	DSAFR4212S
	13.5	DSAFR4214S





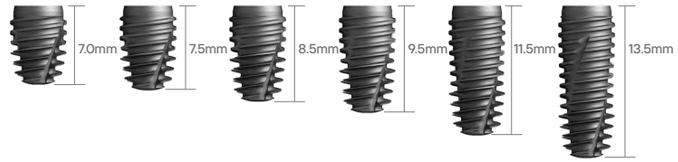
DIAMETER	LENGTH (MM)	CODE NO.
Ø4.6	7	DSAFR4607S
	7.5	DSAFR4608S
	8.5	DSAFR4609S
	9.5	DSAFR4610S
	11.5	DSAFR4612S
	13.5	DSAFR4614S

The lengths listed in the catalog are based on the actual fixture length.Fixtures are designed to be 0.5 mm shorter than the nominal lengths (e.g., 7, 8, 9 mm) commonly used in marketing or for user convenience.

This 0.5 mm difference allows for subcrestal placement (0.5–1.0 mm below the crestal bone), which contributes to long-term clinical stability.

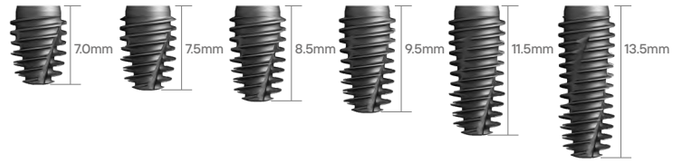
AXEL is designed to enable safe and consistent subcrestal placement using the standard drilling protocol—without the need for a separate long drill.

Regular



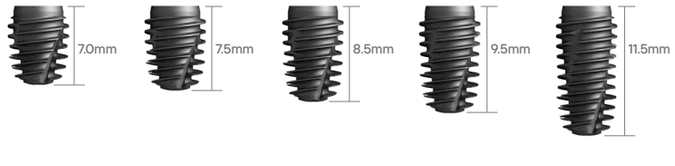


DIAMETER	LENGTH (MM)	CODE NO.
Ø5.0	7	DSAFR5007S
	7.5	DSAFR5008S
	8.5	DSAFR5009S
	9.5	DSAFR5010S
	11.5	DSAFR5012S
	13.5	DSAFR5014S





DIAMETER	LENGTH (MM)	CODE NO.
Ø5.0 (Xread)	7	DSAFR5007XS
	7.5	DSAFR5008XS
	8.5	DSAFR5009XS
	9.5	DSAFR5010XS
	11.5	DSAFR5012XS
	13.5	DSAFR5014XS





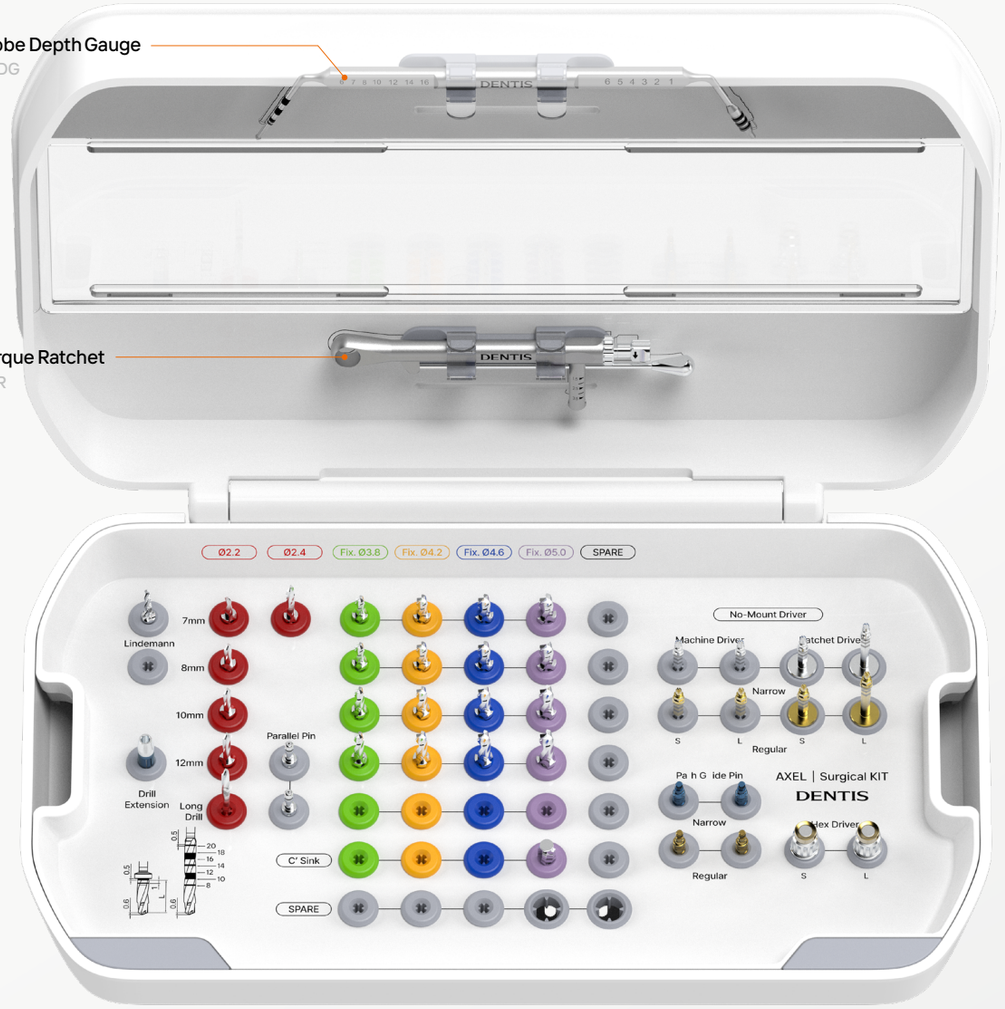
DIAMETER	LENGTH (MM)	CODE NO.
Ø5.4 (Xread)	7	DSAFR5407XS
	7.5	DSAFR5408XS
	8.5	DSAFR5409XS
	9.5	DSAFR5410XS
	11.5	DSAFR5412XS

Xread (Thread Depth ≥ 1 mm) is not recommended for D1 bone, but is ideal for low-density bone (D3–D4), cases with insufficient primary stability, or immediate placement in large molar extraction sockets.

AXEL Surgical KIT

Probe Depth Gauge
DPDG

Torque Ratchet
DTR



Optional
DSASTD2420
DSQSD2220
Optional
DSACS38
DSACS42
DSACS46
DSACS50

DLINDST23
DSQSD2207
DSQSD2208
DSQSD2210
DSQSD2212
DSASTD2414
DSASTD3807
DSASTD3808
DSASTD3810
DSASTD3812
DSASTD4207
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DSASTD4210
DSASTD4212
DSASTD4607
DSASTD4608
DSASTD4610
DSASTD4612
DSASTD5007
DSASTD5008
DSASTD5010
DSASTD5012
DSASTD3820
DSASTD4220
DSASTD4620
DSASTD5020



Lindemann Drill

Straight / Step Drill / Long Drill

Countersink

Drill Extension

DDE

Parallel Pin

DSAPP

s-Clean No-Mount Driver & Ratchet Driver

Narrow

DSNDSS
DSNDSL

DSRDSS
DSRDSL

Regular

DSNDS
DSNDL

DRMDSS
DRMDSL

Hex Driver

1.25

DRHDS125
DRHDL125

Path Guide Pin

DSQPGPS

DSQPGPR

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