MIS C1 XD™

The Connection for Predictable Biology

TABLE OF CONTENTS

The C1 XD implant is a powerful player in the MIS conical connection implant fleet and offers a versatile solution for all clinical indications. This simple, accurate and proven implant system was designed with a conical connection that optimizes biological benefits and esthetic results.

The MIS Quality System complies with international quality standard ISO 13485: 2016 - Quality Management System for Medical Devices, with Medical Device Directive 93/42/EEC, and with EU Medical Device Regulation MDR 2017/745. Please note, that not all products are registered or available in every country/region.

IFUs for MIS products may be found at: https://ifu.mis-implants.com. Adobe Acrobat is required to view the IFU file on the website. This software may be freely downloaded from the Adobe website.

C1 XD Implant on
MIS Website

Additional information may be added to the product descriptions without prior notice.

C1 XD Product Catalog

Conical Connection

BENEFITS

BONE PRESERVATION

The C1 implant incorporates the platform-switching design concept. The 12-degree friction fit conical connection which ensures a secure seal and minimal micro-movements, micro-rings on the implant neck and a platform switched design, were engineered to provide a tight interface, improved BIC, and soft tissue preservation and growth. Crestal bone loss may be minimized by reducing mechanical trauma and stress in the cortical bone, and gaining soft tissue volume.

MAXIMUM ACCURACY

Each C1 package is supplied with XD - single-use, sterile drills, designed for optimal implant-drill compatibility and high initial stability, while ensuring safe and simplified procedures.

HIGH INITIAL STABILITY

The C1 dual thread design increases the BIC (Bone to Implant Contact) over the entire body of the implant and ensures a safe and controlled insertion rate. With its conical, root-shaped geometry, the C1 is engineered for high primary stability and offers the ultimate choice for a wide range of clinical cases and loading protocols.

ESTHETICS

MIS conical connection prosthetic line features a concave emergence profile. This abutment profile was designed to give more room for soft tissue ingrowth. The gold-shaded abutments minimize the reflection through the gingiva; it allows enhanced esthetic results in a thin gingival environment.

CLINICAL SUCCESS

The surface roughness and micro-morphology of MIS implants are a result of sandblasting and acid-etching. It has been documented to be highly osseo-conductive in type IV bone. The MIS surface technology has been acclaimed for its high cleanliness, making it one of the most outstanding surfaces on the market.


Platform switching, designed to faciliate bone preservation and growth
Dual thread design for increased BIC
Conical connection for ultimate seal

NEW. SHARP. EVERY SINGLE TIME.

MIS XD are single-use, sharp, sterile drills, delivering a full procedure in every implant package. These single-use drills are designed for optimal implant-drill compatibility and high initial stability, while ensuring safe and simplified procedures.

XD SHARP

MIS XD, supplied in every implant package, are always sharp. Using sharp drills in every drilling procedure prevents drill wear and deformation.

XD STERILE

MIS XD, supplied in every implant package, are always sterile. This eliminates the need for post-surgery sterilization and reduces the risk of cross-contamination and infection.

XD SAFE

MIS XD, supplied in every implant package, are always compatible with the implant shape and dimensions. MIS XD are designed for depth control, which provides more visibility and confidence in every drilling procedure.

XD SIMPLE

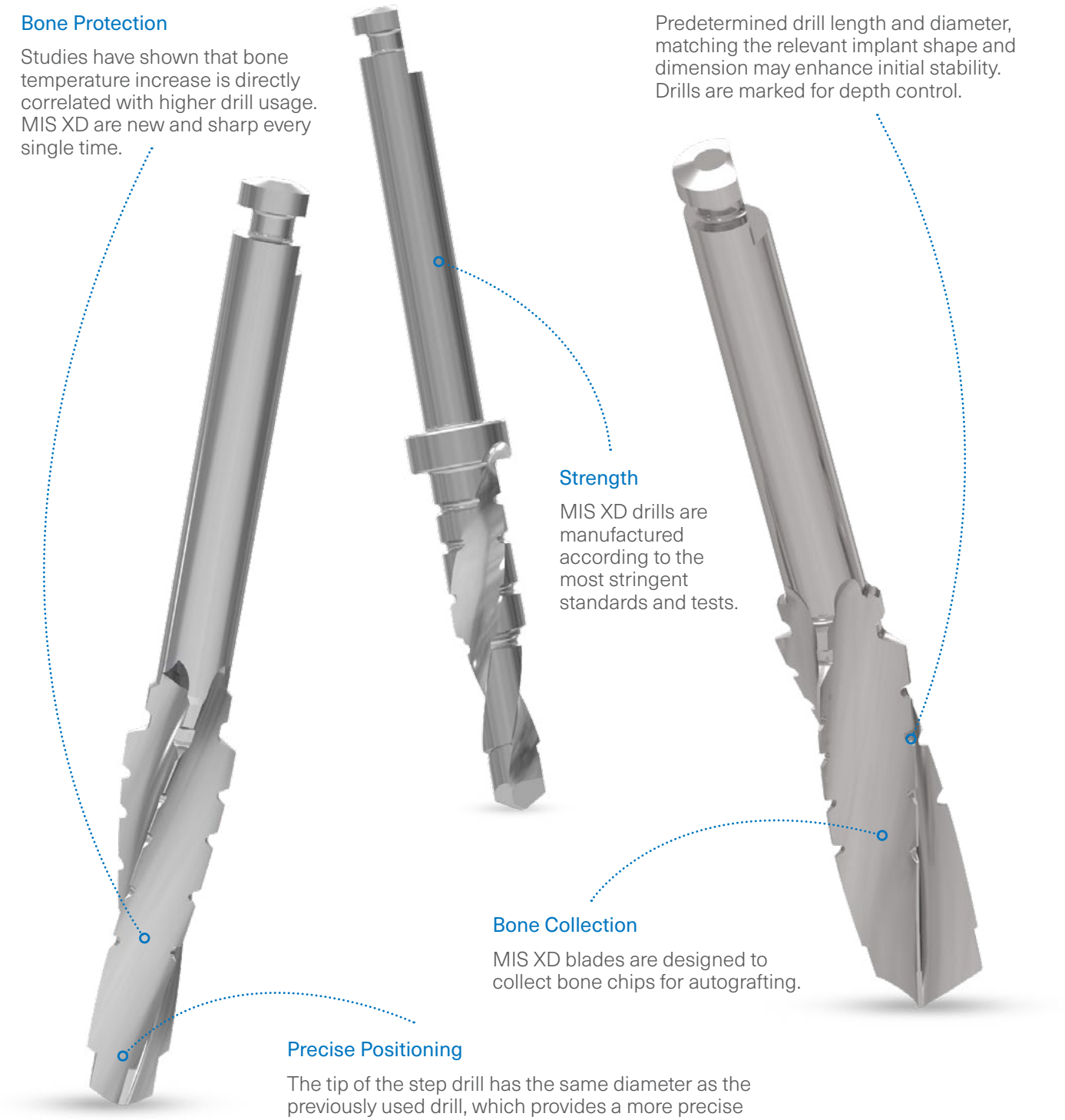
MIS XD, supplied in every implant package, are single-use drills. Single-use drills allow for a simple and quick procedure while eliminating cleaning, re-sterilization and reduce managing drill replacement in the surgical kits.

Bone Protection

Studies have shown that bone temperature increase is directly correlated with higher drill usage. MIS XD are new and sharp every single time.

Depth Planning

Predetermined drill length and diameter, matching the relevant implant shape and dimension may enhance initial stability. Drills are marked for depth control.



Strength

MIS XD drills are manufactured according to the most stringent standards and tests.

Bone Collection

MIS XD blades are designed to collect bone chips for autografting.

Precise Positioning

The tip of the step drill has the same diameter as the previously used drill, which provides a more precise positioning of the drill inside the osteotomy.

MIS XD GUARANTEED QUALITY

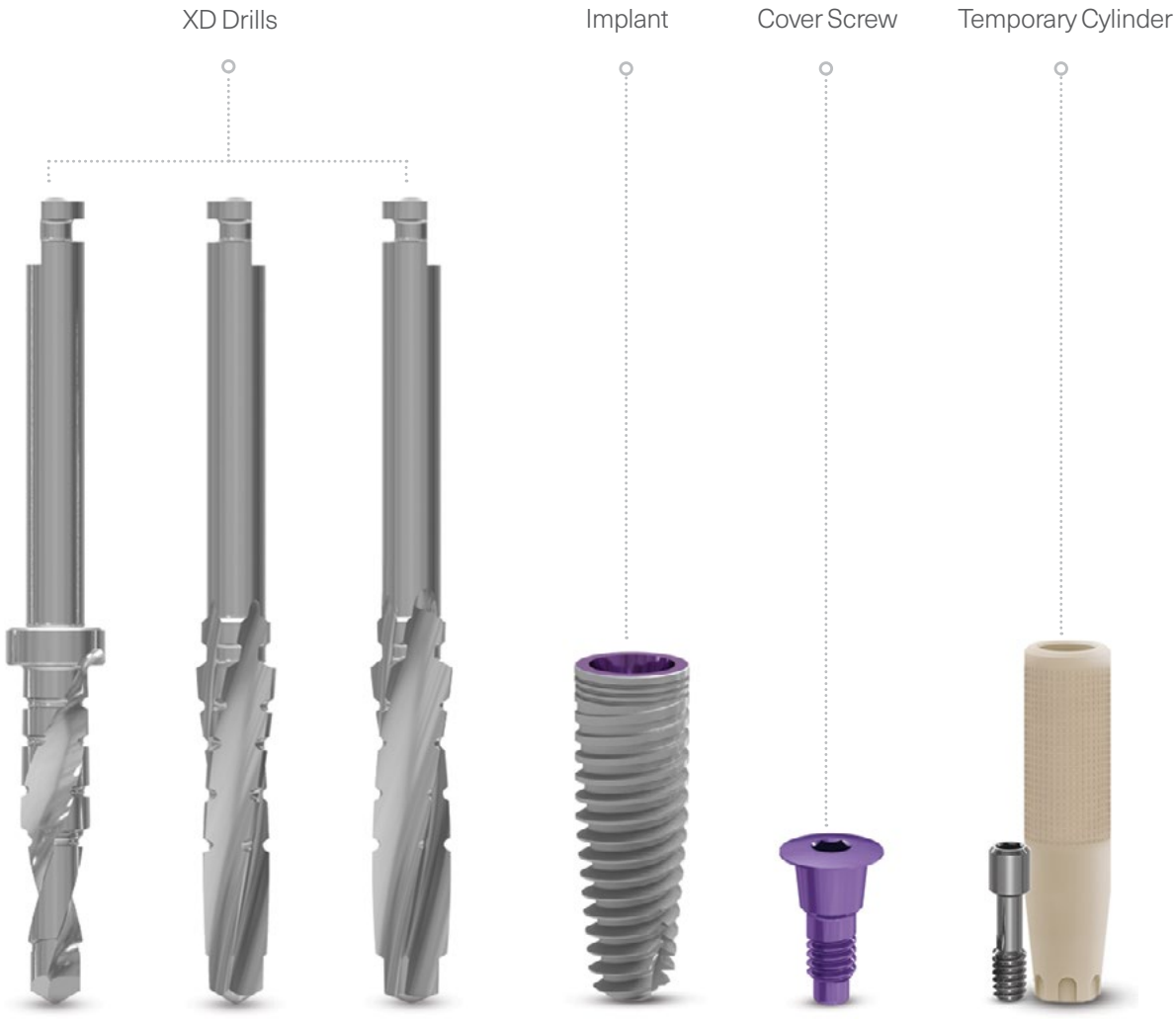
MIS XD have successfully passed the strictest quality tests:

- Corrosion test: MIS XD have shown no corrosion under stringent conditions.
- Bending test: MIS XD have shown good performance under the requirements of ISO 8325:2004.
- Drilling ability test: Clinicians testify a reliable drilling ability of MIS XD at user evaluation.
- Hardness test: MIS XD meet the requirements of ISO 1797:2017.

REVOLUTION IN A BOX!

Each C1 implant comes with a sterile cover screw a temporary PEEK cylinder and XD single-use drills.

The C1 package was designed to be user-friendly during surgery, providing clear identification of the implant's dimensions and easy to use with gloves.



Implant diameter & platform indication

The outer tube is color-coded, indicating the implant platform. The numeric indication specifies implant diameter and length.

Prosthetic platform indication

Prosthetic components are marked by specific colors, representing platform diameters.

Implant identification markings

Quick identification of implant size and length. Sticker on the box lid, specifies implant diameter, length and platform size.

Easy pull tab

The convenient pull tab facilitates quick and easy opening during surgery.

NARROW PLATFORM

Implant Range

Length	8mm	10mm	11.50mm	13mm	16mm
Ø3.30mm		C1-D10330 	C1-D11330 	C1-D13330 	C1-D16330 

Insertion Tools

CT-NLI10
C1 long motor insertion tool, narrow platform

CT-NSI10
C1 short motor insertion tool, narrow platform

CT-NLR10
C1 long ratchet insertion tool, narrow platform

CT-NSR10
C1 short ratchet insertion tool, narrow platform

Implant Cover Screw and Healing Caps

Thin

CN-H0333
CN-H0433
CN-H0533
CN-H0633
CN-H0833

Standard

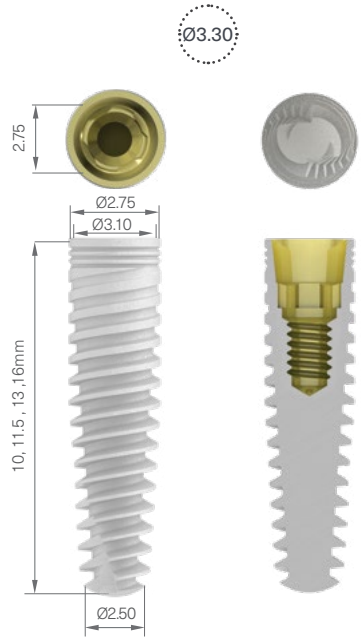
CN-HS340
CN-HS440
CN-HS540
CN-HS640
CN-HS840

Anatomic

CN-HA248
CN-HA348
CN-HA448
CN-HA548
CN-HA648
CN-HA848

Cover screw

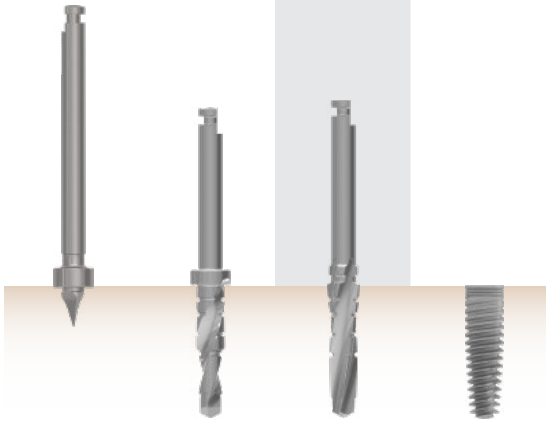
Technical Information



Material:
Titanium Alloy Ti 6Al 4V ELI
Sand-Blasted and Acid-Etched

Ø3.30mm Drilling Protocol

			Bone type 1 and 2	
Drilling Speed (RPM)	1200-1500	900-1200	200-400	15-25
Diameter	Ø1.90	Ø2.40-2.80	Ø3.25	Ø3.30



Do not use the last drill for bone types 3 and 4. The drilling sequence is illustrated using a 13mm implant.
Procedures recommended by MIS cannot replace the judgment and professional experience of the surgeon.

STANDARD PLATFORM

Implant Range

Length	8mm	10mm	11.50mm	13mm	16mm
Ø3.75mm	C1-D08375 	C1-D10375 	C1-D11375 	C1-D13375 	C1-D16375 
Ø4.20mm	C1-D08420 	C1-D10420 	C1-D11420 	C1-D13420 	C1-D16420 

Insertion Tools

CT-SLI10

C1 long motor insertion tool, standard platform

CT-SSI10

C1 short motor insertion tool, standard platform

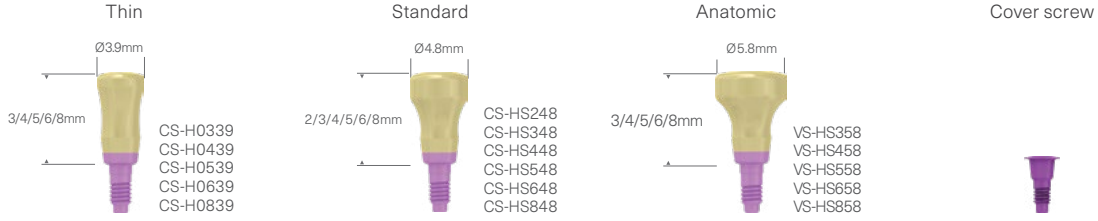
CT-SLR10

C1 long ratchet insertion tool, standard platform

CT-SSR10

C1 short ratchet insertion tool, standard platform

Implant Cover Screw and Healing Caps



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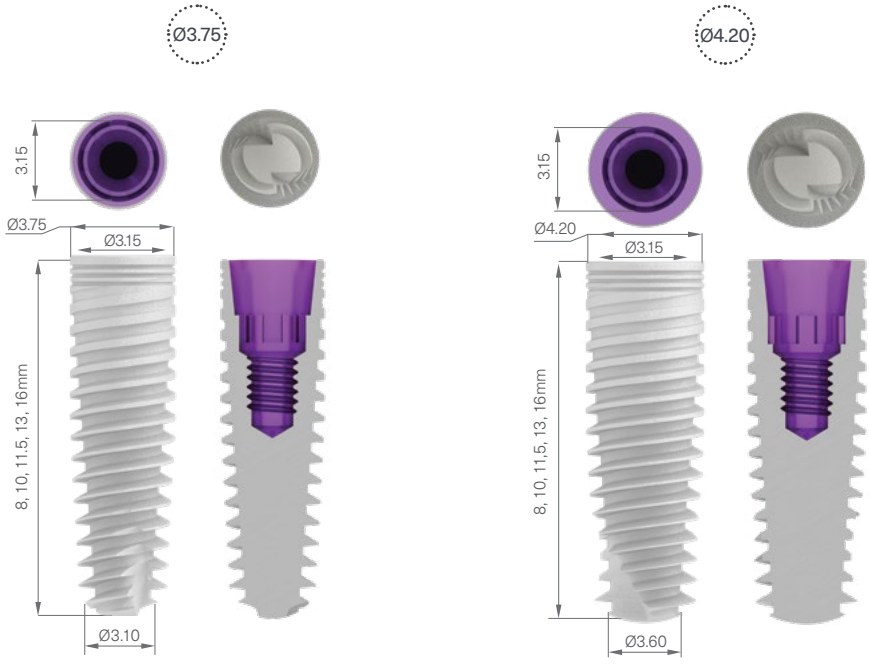
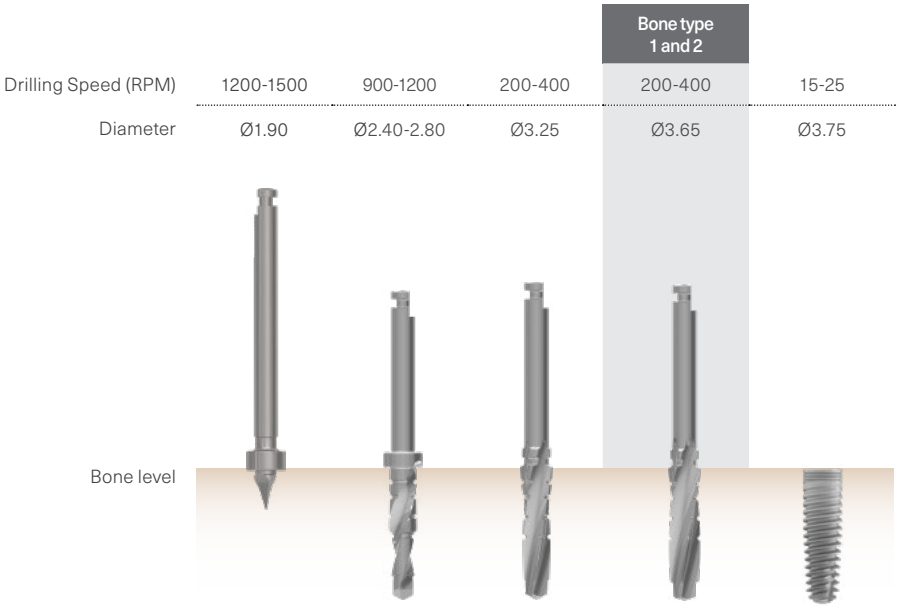
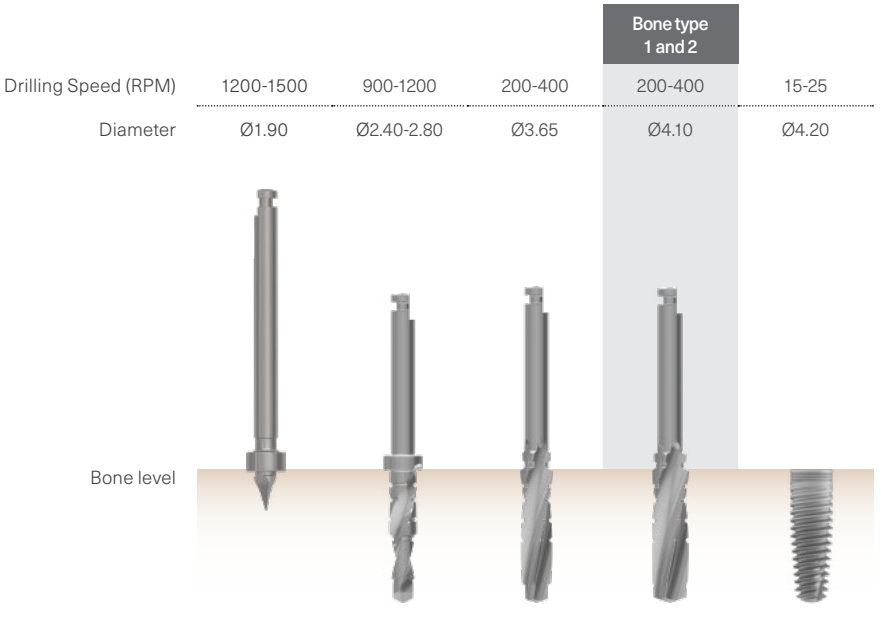


Material:
Titanium Alloy Ti 6Al 4V ELI
Sand-Blasted and Acid-Etched

Ø3.75mm Drilling Protocol



Ø4.20mm Drilling Protocol

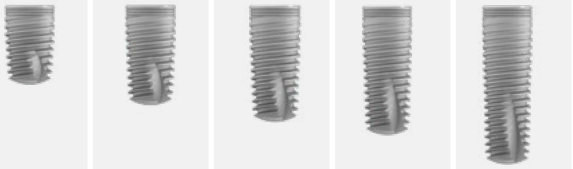


Do not use the last drill for bone types 3 and 4. The drilling sequence is illustrated using a 13mm implant.
Procedures recommended by MIS cannot replace the judgment and professional experience of the surgeon.

WIDE PLATFORM

Implant Range

Length	8mm	10mm	11.50mm	13mm	16mm
Ø5mm	C1-D08500	C1-D10500	C1-D11500	C1-D13500	C1-D16500



Insertion Tools

CT-SLI10
C1 long motor insertion tool, wide platform

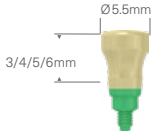
CT-WSI10
C1 short motor insertion tool, wide platform

CT-WLR10
C1 long ratchet insertion tool, wide platform

CT-WSR10
C1 short ratchet insertion tool, wide platform

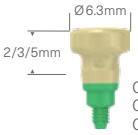
Implant Cover Screw and Healing Caps

Standard



CW-HS355
CW-HS455
CW-HS555
CW-HS655

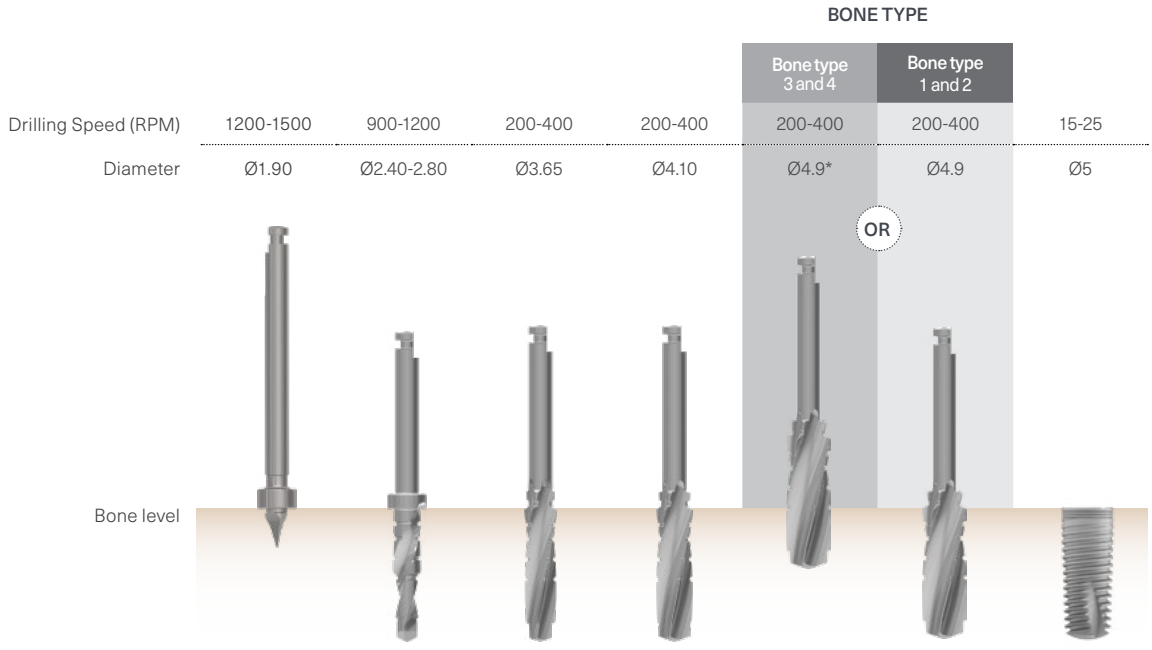
Anatomic



CW-HA263
CW-HA363
CW-HA563

Cover screw

Ø5mm Drilling Protocol

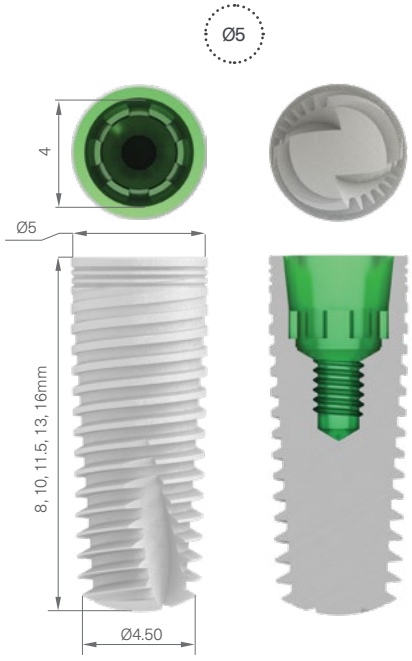


* When placing Ø5 implants in soft bone, the last drill should be drilled to the first depth indicator, which is 6mm deep. For 8mm length implants, the first depth marking is 4mm deep.

Do not use the last drill for bone types 3 and 4. The drilling sequence is illustrated using a 13mm implant.

Procedures recommended by MIS cannot replace the judgment and professional experience of the surgeon.

Technical Information



Material:
Titanium Alloy Ti 6Al 4V ELI
Sand-Blasted and Acid-Etched

XD PLACEMENT SET

MIS XD Drills provide a full drilling protocol in every implant package, eliminating the need for a surgical kit. For this reason, we've developed a smaller placement set that includes all the essential instruments needed during surgery: Marking drills, countersinks, insertion tools, and a surgical torque ratchet.

XD Placement Set

1. Marking drills
2. Insertion tools
3. Countersinks
4. Surgical torque ratchet

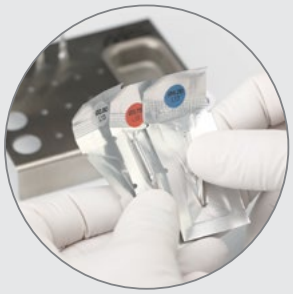
XD Organizer Tray

The XD Organizer Tray is designed to support the XD procedure by providing a convenient place to store the XD drills during surgery. Please note that the organizer isn't included in the surgical kit and should be sterilized prior to surgery.

Pre Surgery Steps

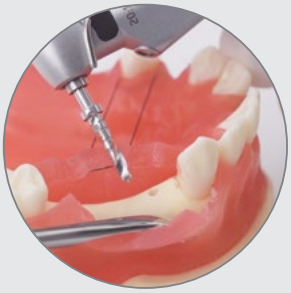
1. Sterilize the XD Placement Set and Organizer Tray.

2. Open the implant package and place the implant's tube onto the organizer tray.



3. Open the XD pouches.

4. Arrange the drills on the organizer according to the drilling sequence, using the colored stickers on the pouch.



5. Ready for surgery!

C1 XD PLACEMENT SET

MK-C1XD

① 

MT-PD440
Position drill, Ø4mm

② 

MT-PDM24
Position drill mill, Ø2.4mm

③ 

CT-P2416
Pilot drill for 16mm length implants, Ø2.4/2mm

④ 

MT-DE001
Drill extender

⑤ 

CT-BTC24
Body try-in, Ø2.4mm

⑥ 

MT-CSN33
Countersink, narrow platform

⑦ 

MT-GDN33
Countersink, standard platform

⑧ 

MT-GDN50
Countersink, wide platform

⑨ 

CT-NLI10
C1 Long motor insertion tool, conical connection, narrow platform

⑩ 

CT-NLR10
C1 Long ratchet insertion tool, conical connection, narrow platform

⑪ 

CT-SLI10
C1 Long motor insertion tool, conical connection, standard platform

⑫ 

CT-SLR10
C1 Long ratchet insertion tool, conical connection, standard platform

⑬ 

CT-WLI10
C1 Long motor insertion tool, conical connection, wide platform

⑭ 

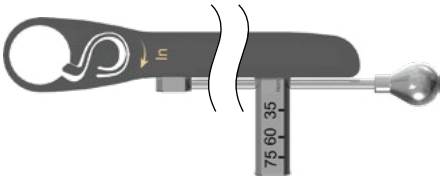
CT-WLR10
C1 Long ratchet insertion tool, conical connection, wide platform

⑮ 

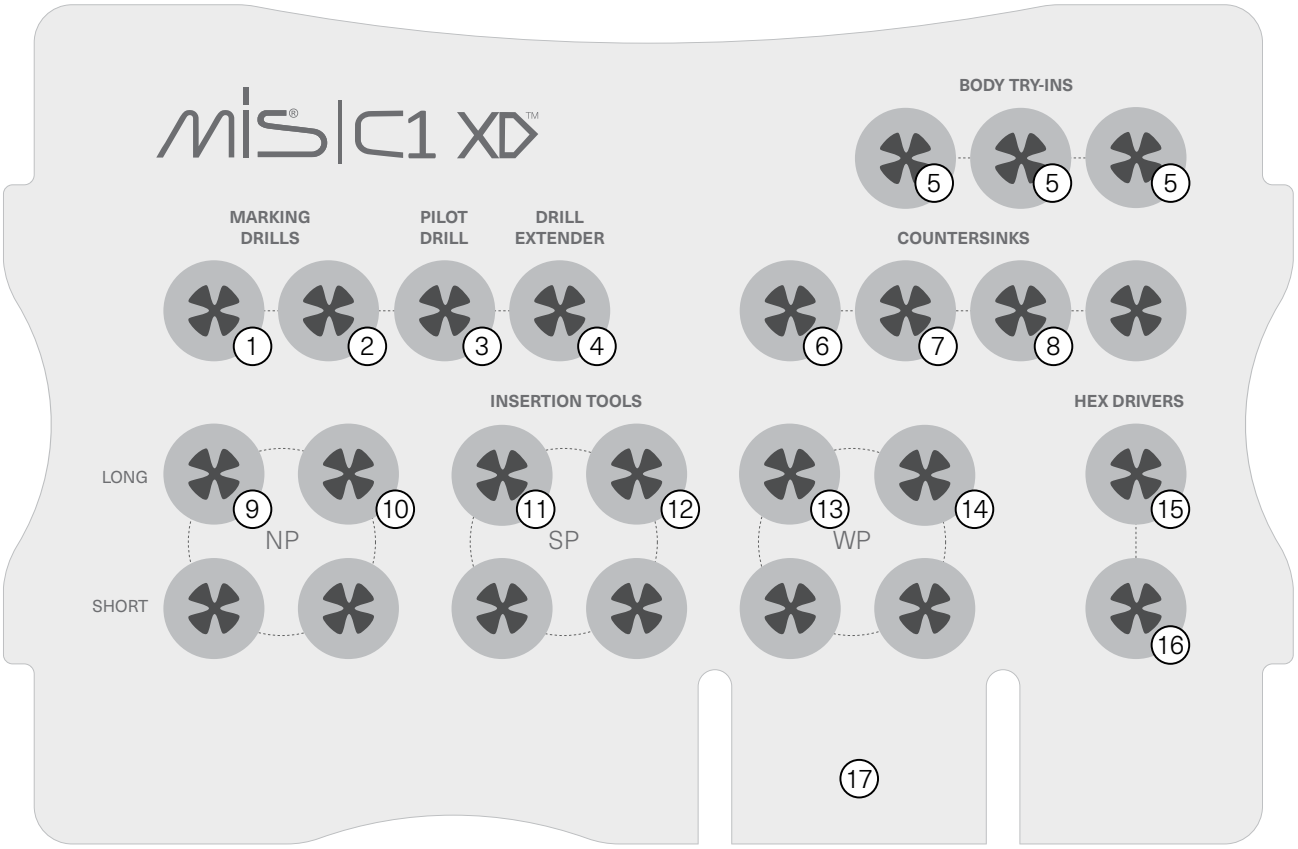
MT-RDL30
Long driver for 0.05 inch hex.

⑯ 

MT-RDS30
Short driver for 0.05 inch hex.

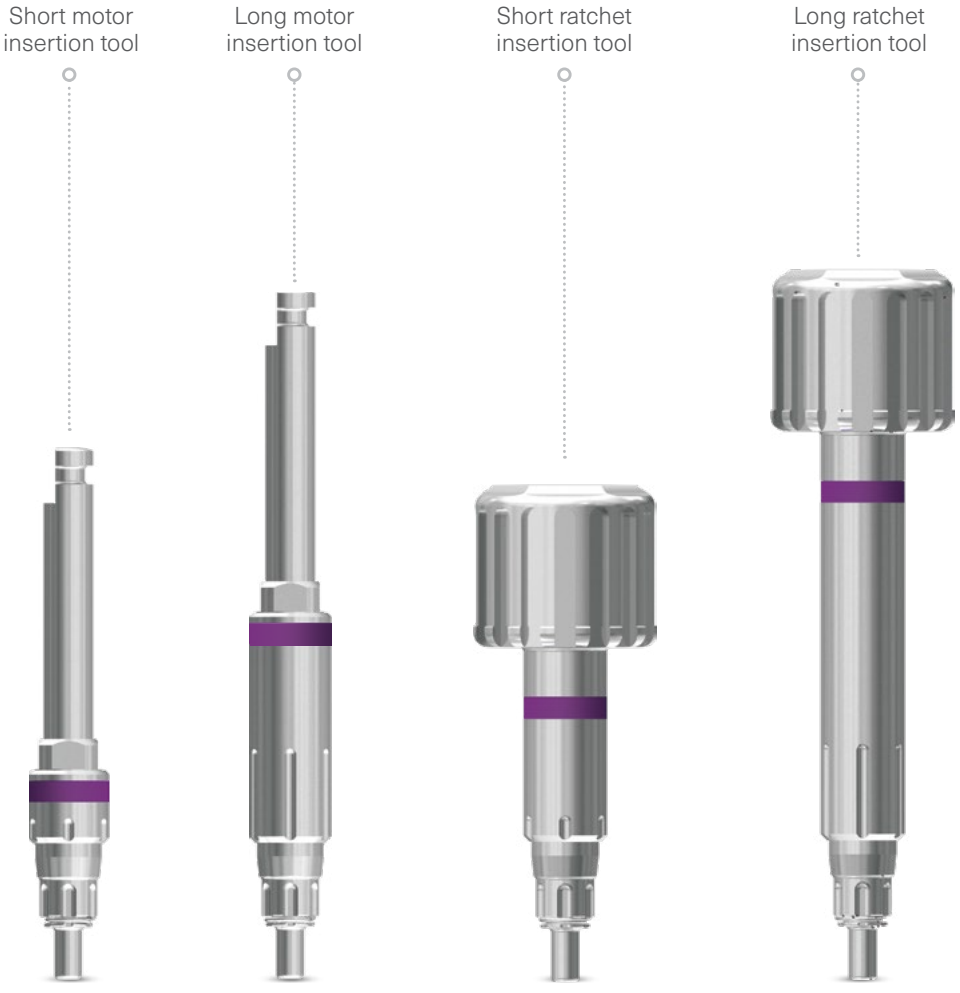
⑰ 

MT-RT070
Surgical torque ratchet


MIS C1 XD™
BODY TRY-INS
5
5
5
MARKING DRILLS
PILOT DRILL
DRILL EXTENDER
COUNTERSINKS
1
2
3
4
6
7
8
INSERTION TOOLS
HEX DRIVERS
LONG
9
10
NP
11
12
SP
13
14
WP
15
SHORT
16
17

INSERTION TOOLS

C1 implant placement tools are specially designed to facilitate quick and reliable implant procedures.

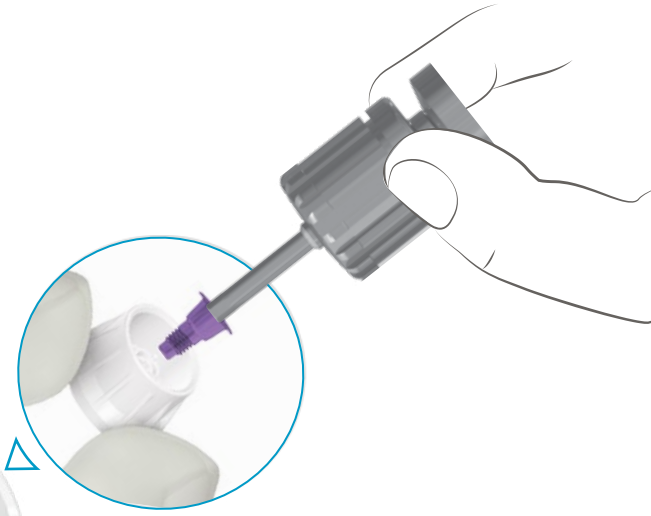


INSERTION OPTIONS:

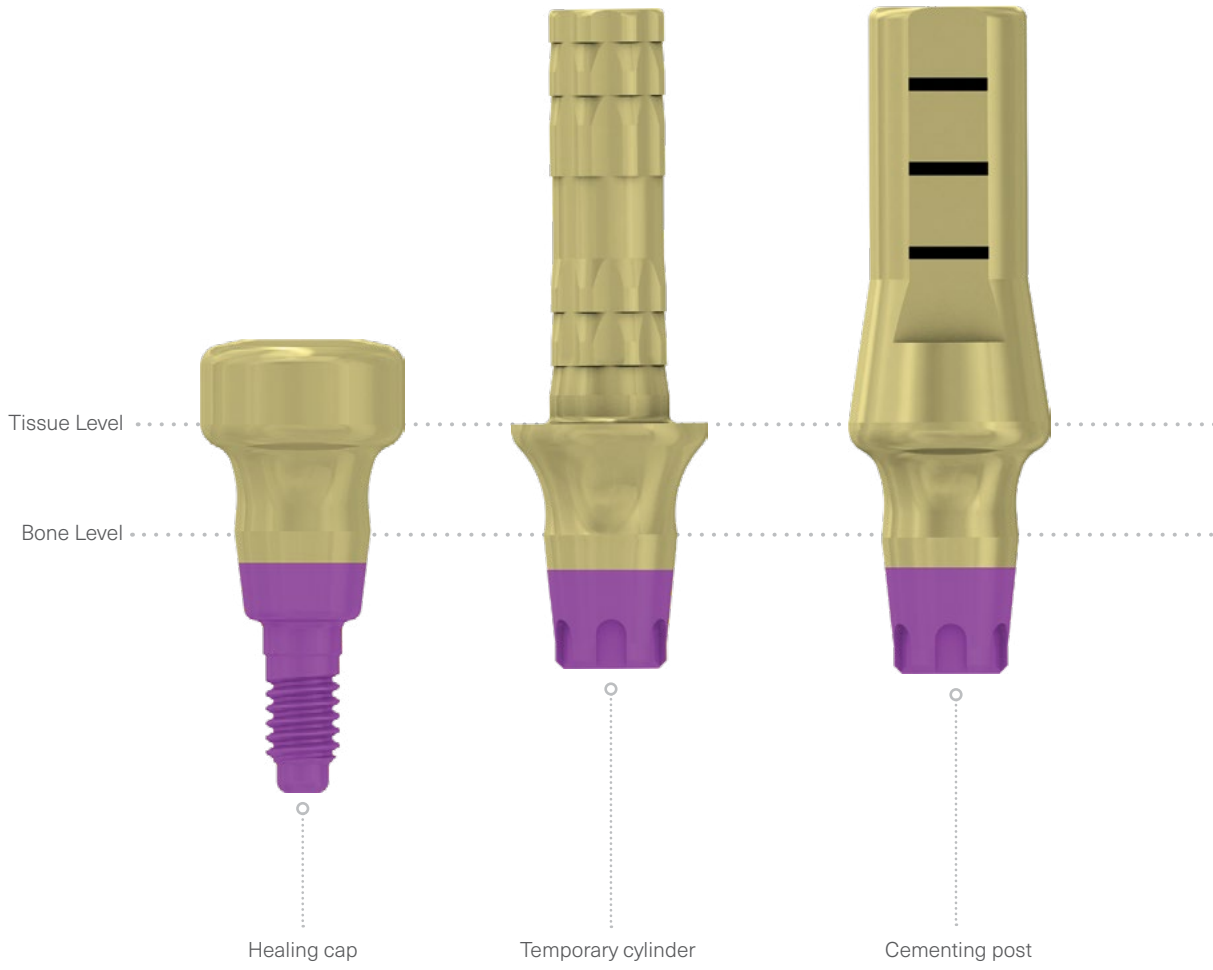
1. Manual insertion
2. Motor insertion
3. Ratchet insertion

Insertion tools should be fully inserted into the implant connection. Complete insertion of the tool optimizes the transfer of force during implant placement and allows for easy removal if needed.

The tool cannot secure an implant without being fully inserted into its connection point.



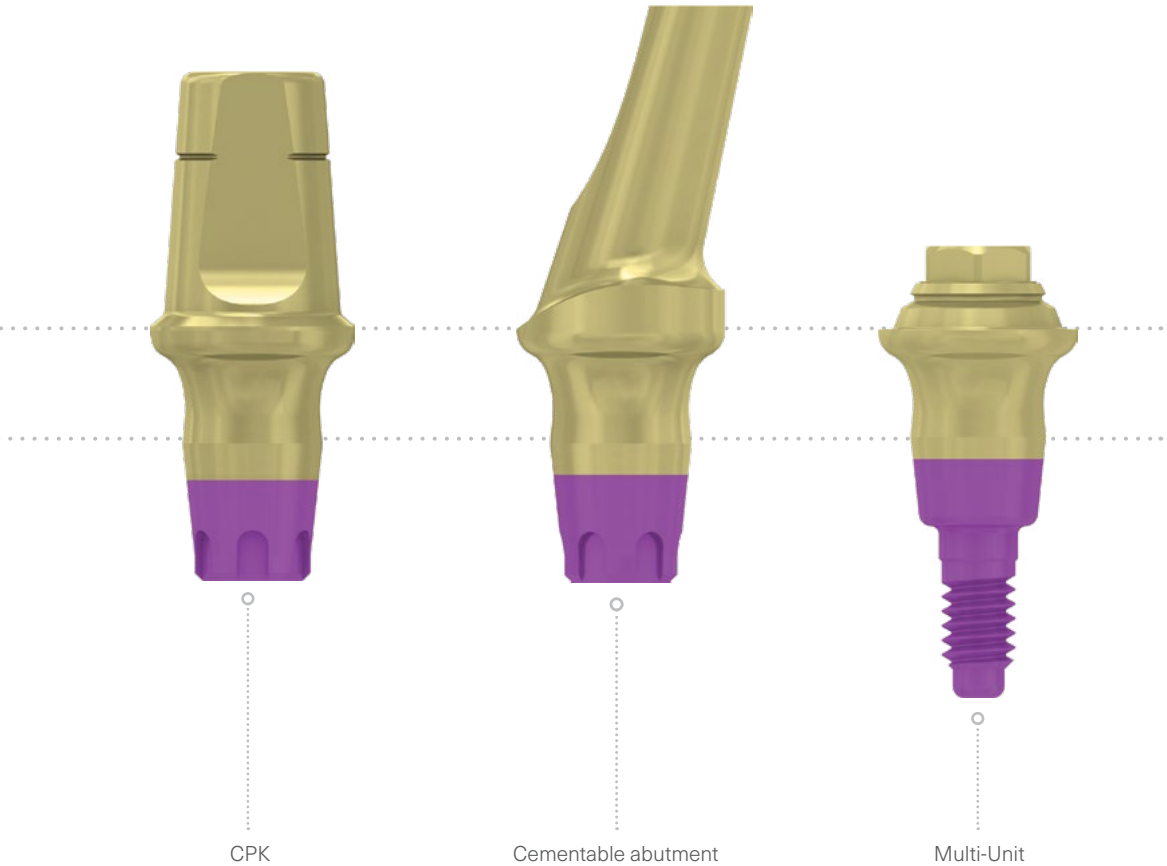
PROSTHETIC OPTIONS



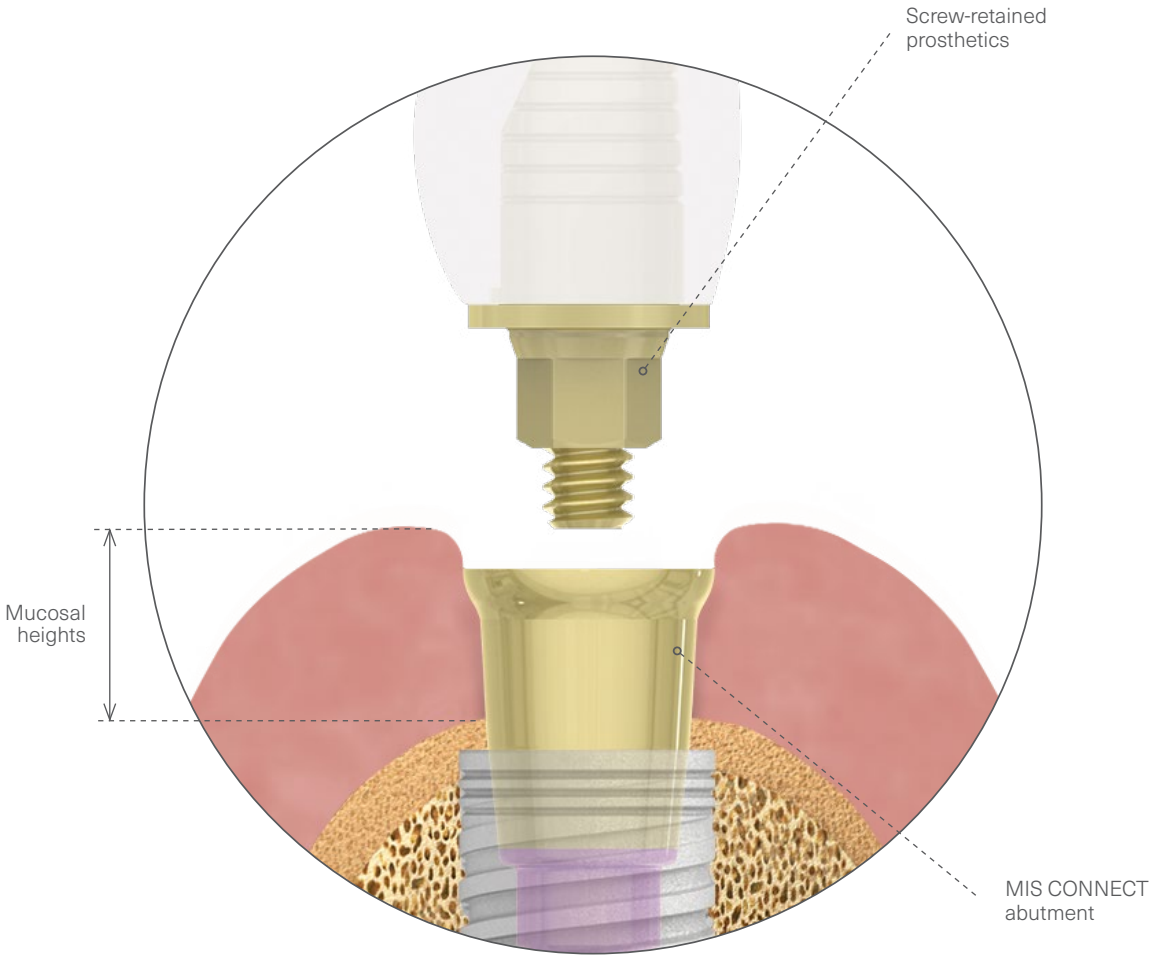
Consistent, Concave Abutment Profile

MIS prosthetic line features a concave emergence profile. This abutment profile was designed to give more room for soft tissue ingrowth.

The gold-shaded abutments minimize the reflection through the gingiva; it allows enhanced esthetic results in a thin gingival environment.



TISSUE-LEVEL SCREW-RETAINED SOLUTION

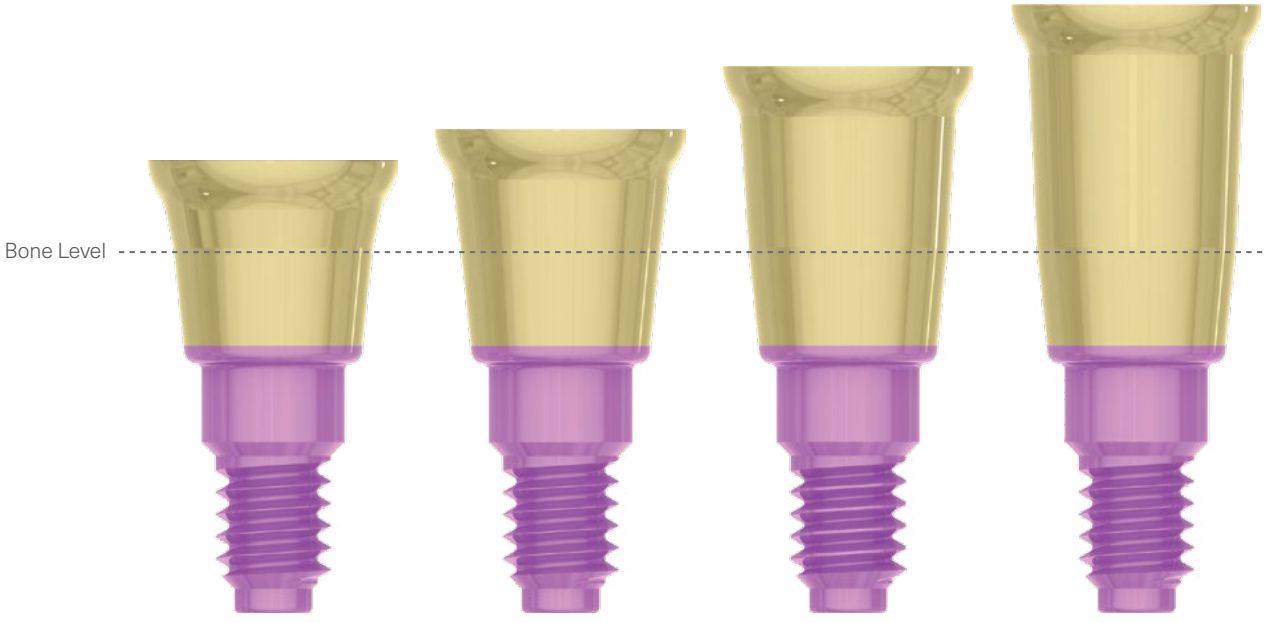


The MIS CONNECT is a stay-in abutment system which enables avoiding interference with the peri-implant gingival seal.

It offers doctors the ability to maximize the tissue-level restoration concept, enabling the entire prosthetic procedure and restoration to occur far from the bone, and at any level of the connective tissue.

The CONNECT is designed to reduce micro-movements and micro-leakage of bacteria at the bone level.

Learn more about the CONNECT System on MIS website



Immediate Molar Implant Placement Using an Interradicular Bone-Drilling Technique with MIS C1 XD Implant

Dr. Bruno M. Wehncke A., Guatemala

BACKGROUND

A 32-year-old female patient with an unrestorable lower right first molar. No relevant medical history.

DIAGNOSIS

Clinical and radiographic examination revealed root caries and a failed endodontic treatment.

TREATMENT PLANNING

A cone-beam computed tomography (CBCT) scan was taken to assess the surgical site's anatomy, including the roots' morphology and the surrounding bone's quantity and quality.

Virtual implant placement was performed on the CBCT images using surgical planning software to determine the implant's ideal position, length, and width.

The technique of drilling through the roots was chosen to have an anatomical guide for the implant position and prevent slipping of the drill.

SURGICAL PROCEDURE

The lower first molar was decoronated, and an inter-partial radicular splitting of the roots was created, providing a guide for subsequent bed implant preparation.

Osteotomies were performed through the retained roots using the MIS C1 XD drilling protocol, ensuring ideal three-dimensional orientation and optimal implant placement.

The remaining root segments were carefully extracted.

MIS C1 XD Ø5x11.5mm implant was placed in the prepared osteotomy with a torque of 50 Ncm, achieving high primary stability.

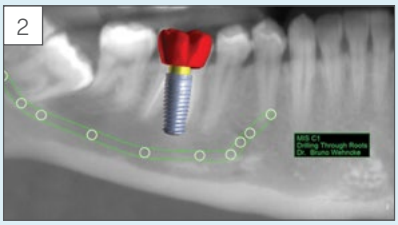
MIS CONNECT abutment was inserted with a torque of 30 Ncm, and a biomaterial was packed in the socket and surrounding tissues.

Finally, a provisional CAD/CAM crown was delivered with a temporary abutment.

In this case, new, single-use drills were used for inter radicular bone preparation, which provided several benefits, including improved cutting efficiency, reduced heat generation, and better control during the drilling process. These features contributed to the success of achieving primary stability and allowed smooth and precise implant placement.

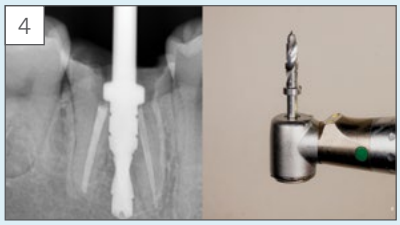
Final result: Occlusal view of the provisional crown out of occlusion

Initial situation with a hopeless mandibular first molar



Preoperative CBCT

Decoronation and section of the tooth



Periapical radiograph showing the drilling through the roots

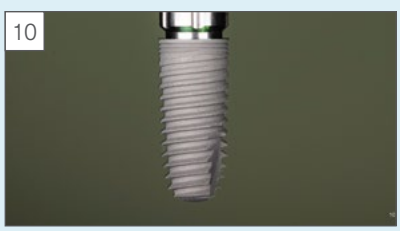
Interradicular bone drilling with ideal three-dimensional orientation of the implant preparation

Buccal view showing the parallelism of the osteotomy with adjacent teeth

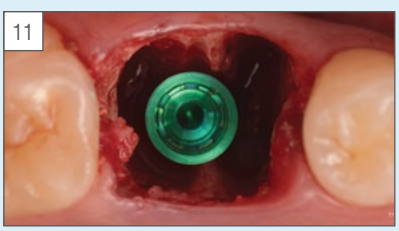
Interradicular bone drilling

Periapical radiograph of the procedure with MIS XD

Occlusal view after flapless extraction of the remaining roots

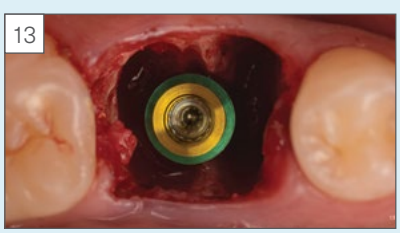


MIS C1 Ø5x11.50mm implant

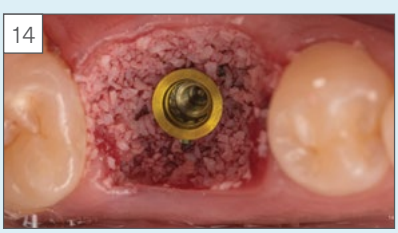


Occlusal view after final seating of a Ø5mm C1 implant

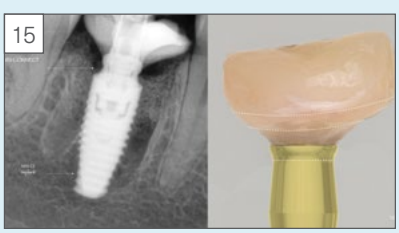
Buccal view of tightening the CONNECT abutment



Occlusal view after placing the CONNECT abutment



Socket filled with biomaterial



Post-operative periapical radiograph of the MIS C1 Implant, CONNECT abutment, CAD-CAM provisional crown and temporary crown

SURFACE QUALITY

All MIS implants undergo the same surface treatments; sand-blasting and acid-etching. The research study was done on the SEVEN implant, however the results are valid for all MIS implant surfaces.

Identification Card and Codification of the Chemical and Morphological Characteristics of 62 Dental Implant Surfaces. Part 3: Sand-Blasted/Acid-Etched (SLA Type) and Related Surfaces (Group 2A, main subtractive process).

Background and Objectives

Dental implants are commonly used in dental therapeutics, but dental practitioners only have limited information about the characteristics of the implant materials they take the responsibility to place in their patients. The objective of this work is to describe the chemical and morphological characteristics of 62 implant surfaces available on the market and establish their respective Identification (ID) Card, following the Implant Surface Identification Standard (ISIS). In this third part, surfaces produced through the main subtractive process (sand-blasting/acid-etching, SLA-type and related) were investigated.

Materials and Methods

Eighteen different implant surfaces were characterized: Straumann SLA (ITI Straumann, Basel, Switzerland), Ankylos (Dentsply Friadent, Mannheim, Germany), Xive S (Dentsply Friadent, Mannheim, Germany), Frialit (Dentsply Friadent, Mannheim, Germany), Promote (Camlog, Basel, Switzerland), Dentium Superline (Dentium Co., Seoul, Korea), Osstem SA (Osstem implant Co., Busan, Korea), Genesio (GC Corporation, Tokyo, Japan), Aadva (GC Corporation, Tokyo, Japan), MIS Seven (MIS Implants Technologies, Bar Lev, Israel), ActivFluor (Blue Sky Bio, Grayslake, IL, USA), Tekka SA2 (Tekka, Brignais, France), Twinkon Ref (Tekka, Brignais, France), Bredent OCS blueSKY (Bredent Medical, Senden, Germany), Magitech MS2010 (Magitech M2I, Levallois-Perret, France), EVL Plus (SERF, Decines, France), Alpha Bio (Alpha Bio Tec Ltd, Petach Tikva, Israel), Neoporos (Neodent, Curitiba, Brazil). Three samples of each implant were analyzed.

Superficial chemical composition was analyzed using XPS/ESCA (X-Ray Photoelectron Spectroscopy/Electron Spectroscopy for Chemical Analysis) and the 100nm in-depth profile was established using Auger Electron Spectroscopy (AES). The microtopography was quantified using optical profilometry (OP). The general morphology and the

nanotopography were evaluated using a Field Emission-Scanning Electron Microscope (FE-SEM). Finally, the characterization code of each surface was established using the ISIS, and the main characteristics of each surface were summarized in a reader-friendly ID card.

Results

From a chemical standpoint, in the 18 different surfaces of this group, 11 were based on a commercially pure titanium (grade 2 or 4) and 7 on a titanium-aluminium alloy (grade 5 or grade 23 ELI titanium). 4 surfaces presented some chemical impregnation of the titanium core, and 5 surfaces were covered with residual alumina blasting particles. 15 surfaces presented different degrees of inorganic pollutions, and 2 presented a severe organic pollution overcoat. Only 3 surfaces presented no pollution (and also no chemical modification at all): GC Aadva, Genesio, MIS SEVEN®. From a morphological standpoint, all surfaces were microrough, with different microtopographical aspects and values. All surfaces were nanosmooth, and therefore presented no significant and repetitive nanostructures. 14 surfaces were homogeneous and 4 heterogeneous. None of them was fractal.

Discussion and Conclusion

The ISIS systematic approach allowed to gather the main characteristics of these commercially available products in a clear and accurate ID card. The SLA-type surfaces have specific morphological characteristics (microrough, nanosmooth, with rare and in general accidental chemical modification) and are the most frequent surfaces used in the industry. However they present different designs, and pollutions are often detected (with blasting/etching residues particularly). Users should be aware of these specificities if they decide to use these products.

Identification card of the MIS SEVEN surface, following the Implant Surface Identification Standard (ISIS) codification

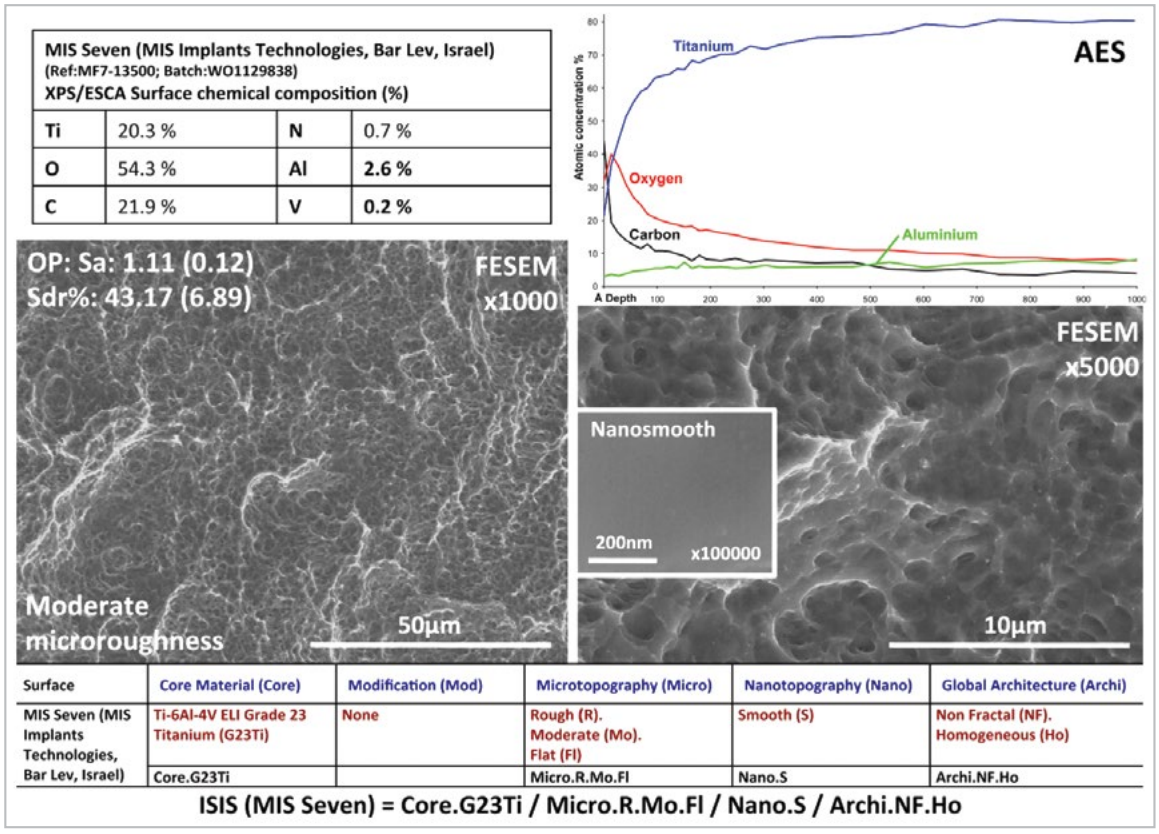


Fig. 1

Identification Card of the MIS SEVEN® surface: MIS Seven (MIS Implants Technologies, Bar Lev, Israel; Figure 1) was a sandblasted/acid-etched surface on a grade 23 ELI (Extra Low Interstitials) titanium core. No pollution or chemical modification was detected. the surface was moderately microrough, nanosmooth, and homogeneous all over the implant.

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NOTES

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