OSSTEM IMPLANT

Surgical Manual

CAS KIT

Introduction

Welcome,

and thank you for choosing Osstem Implant products. This catalogue is designed to support dental professionals with product information, clinical workflows, and practical guidance for daily use. It is important to inform patients about the option of dental implant treatment and the potential benefits it may provide. For further information, please contact your local Osstem representative.

Important Notice

This document is provided for **informational and educational purposes only** and does not replace the applicable product label, the current product-specific Instructions for Use (IFU), formal clinical training, or independent professional judgment. All product information, specifications, and protocols are subject to change without notice. Not all products may be approved, cleared, released, licensed, or available in all markets. Product illustrations are not shown to scale. Despite careful preparation of this catalogue, typographical, editorial, translation, or printing errors may occur. **All critical information must be verified against the current product-specific IFU and product label before use.**

Electronic IFU (per (EU) 2021/2226)

- Surgical Drill & KIT System is eligible for provision of electronic instructions for use (e-IFU) under Regulation (EU) 2021/2226 for professional users.
- e-IFUs are available at [website URL: ifu.osstem.com] in the official languages required by the Member State(s) where the device is placed on the market.
- The e-IFU content is consistent with the paper version; all updates are promptly reflected in both versions.
- If requested, a paper copy of the IFU will be supplied free of charge, within 7 calendar days.
- The e-IFU website maintains historical versions for traceability of all previously applicable instructions.
- Labeling on the product/package indicates the provision of e-IFU and how to access it online.

Surgical Manual | English Edition

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158 00 Prague, Czech Republic

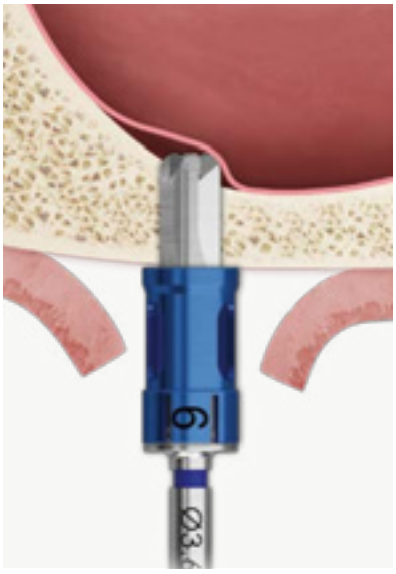
Note: *This brochure is based on the global 2021 Osstem Surgical Manual and has been visually revised and adapted for the European market. Product availability and specifications may vary by country and are subject to change without notice. Images are for illustrative purposes only. For professional use only.*

CAS KIT

Crestal approach sinus KIT used to safely raise the sinus membrane without perforation

- Applicable to various maxillary sinus surgery cases

Flat



Inclined

Septum

Drilling

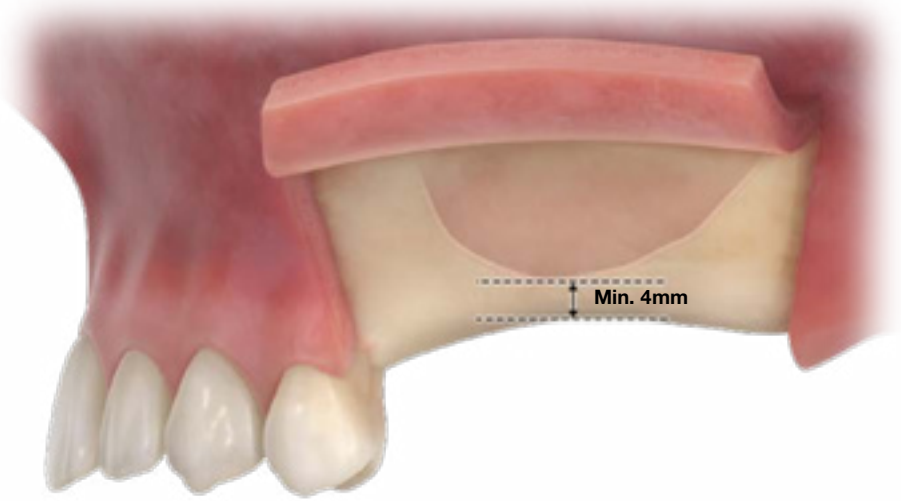
Hydraulic lifting

Bone filling

Implant placement

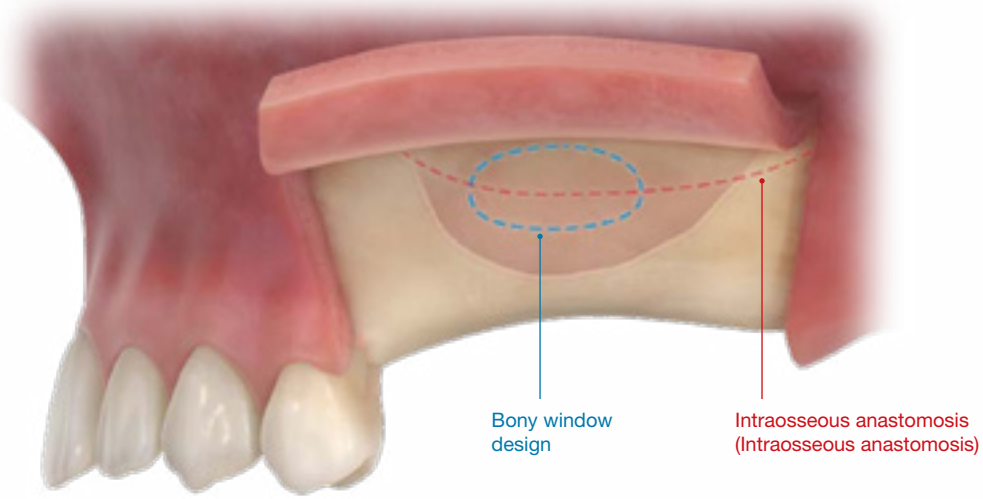
1 Indication

A When the height of residual bone mass is min. 4mm



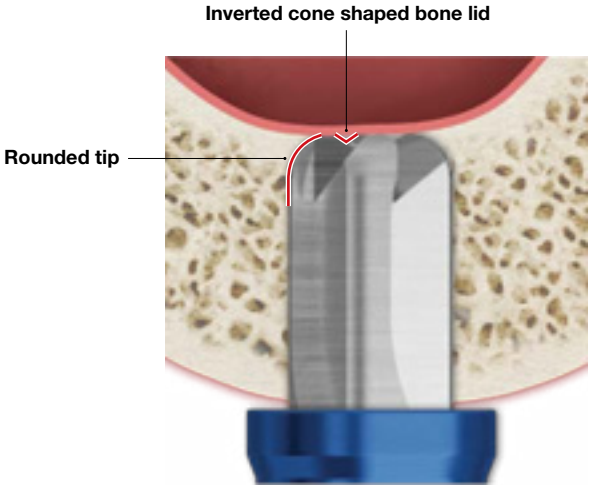
B When there is an intraosseous anastomosis in the lateral wall

· When lateral access is not possible due to the presence of an anatomical structure in the lateral wall of an intraosseous anastomosis.



2 Feature

A Prevents maxillary sinus perforation

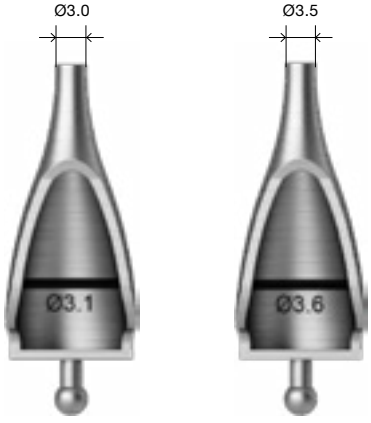


Inverted cone shape & curved CAS drill design

B Safely lift the maxillary sinus wide

Hydraulic membrane lifter capable of hydraulic lift

C Fast bone graft without risk of secondary infection



Funnel-shaped bone carrier design

CAS KIT surgical procedure (Recommendations)

Select drill for each surgery procedure

● Required ○ Optional

Bone density	Implant	Guide drill	Twist drill	CAS drill						Depth gauge	Hydraulic membrane lifter	Carrier	Condenser
		Ø2.2/ Ø2.7	Ø2.2	Ø2.8	Ø3.1	Ø3.3	Ø3.6	Ø3.8	Ø4.1				
Soft	F4.0	○	●	●						●	○	○	○
	F4.5	○	●	●		●				●	○	○	○
	F5.0	○	●	●				●		●	○	○	○
Normal	F4.0	○	●		●					●	○	○	○
	F4.5	○	●		●		●			●	○	○	○
	F5.0	○	●		●				●	●	○	○	○

e.g.) Soft bone (remaining bone 6mm), drill in TSIII Ø4.5×10mm Implant placement case

e.g.) Normal bone (remaining bone 6mm), drill in TSIII Ø4.5×10mm Implant placement case

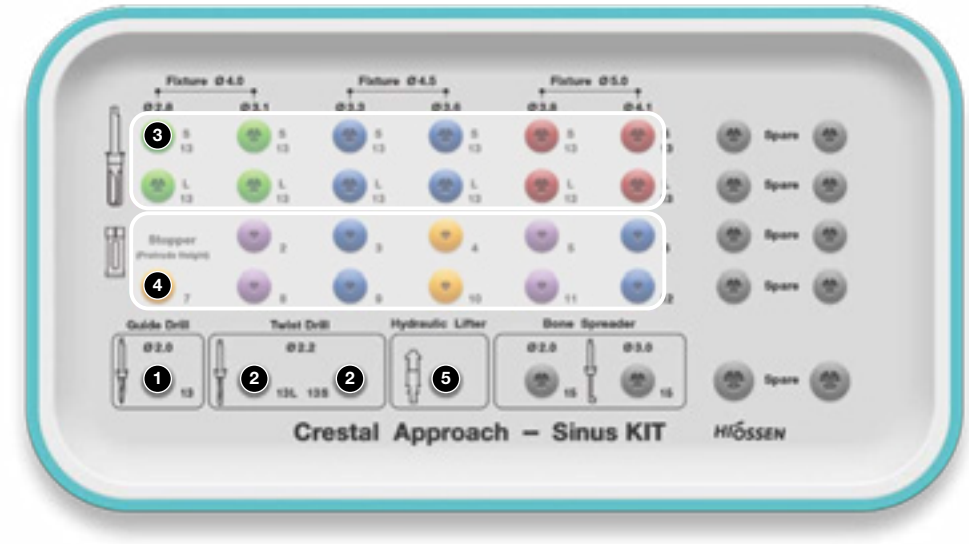
3 KIT (included components)

CAS KIT

Drilling tool (1~4)

Hydraulic lifting tool (5)

Bone graft tool (6~7)

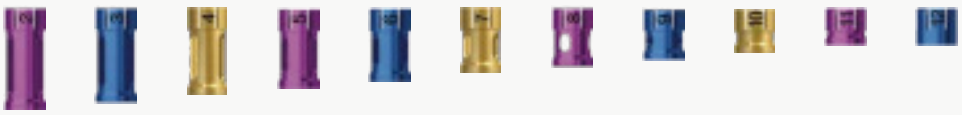


1 Guide drill

2 Twist drill

3 CAS drill

4 Stopper (2~12mm)



5 Hydraulic membrane lifter

6 Bone carrier (Ø3.1, Ø3.6 / bottom panel component)

7 Bone condenser (bottom panel component)

4 KIT (user instructions)

Includes a tool to form a drilling hole.

1 Guide drill

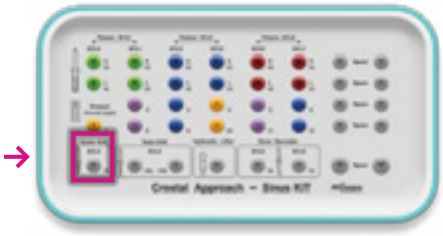
2 Twist drill

3 CAS drill

4 Stopper

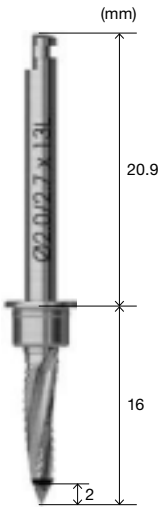
❶ Guide drill

Drill to mark the Implant placement position. Use to delete the side wall of the tooth extraction site by forming a side blade.



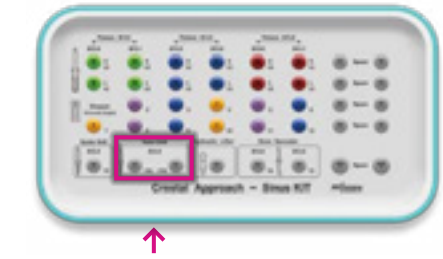
User instructions

· Adjust the drilling RPM to 1,000~1,500 rpm.
· Assemble the 2mm stopper. (Marking line at 2mm of the tip)
· Assemble the stopper before drilling.



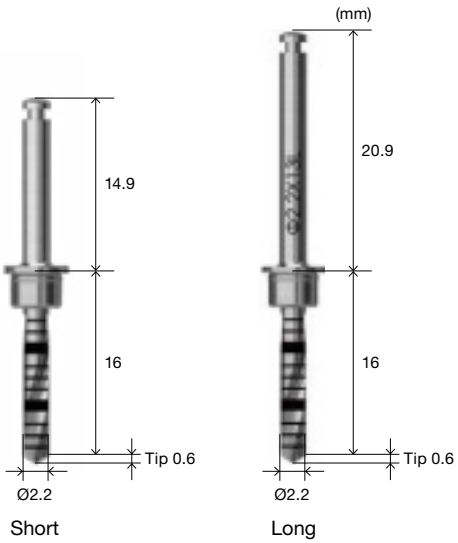
❷ Twist drill

Initial Drill used before the CAS Drill.



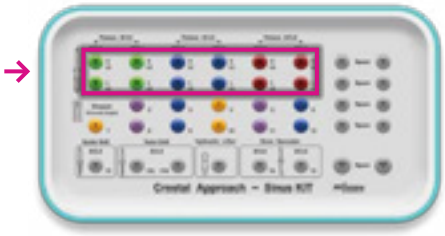
User instructions

· Adjust the drilling RPM to 1,000~1,500 rpm.
· For safe drilling, fasten a stopper.
· Assemble the stopper before drilling.
· Drill 1mm below the residual bone.
· Short and long specifications are available.



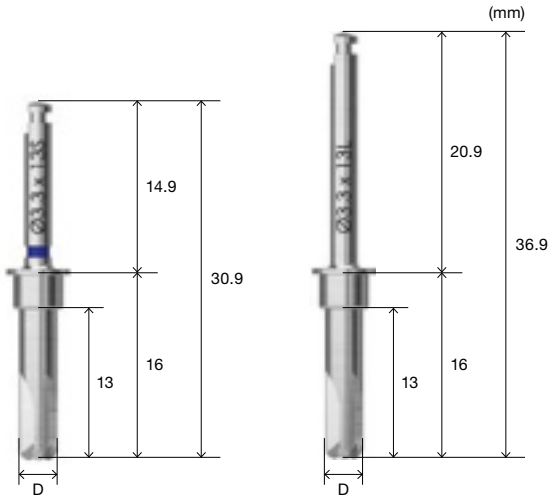
❸ CAS drill

Drill used to access the maxillary sinus membrane



User instructions

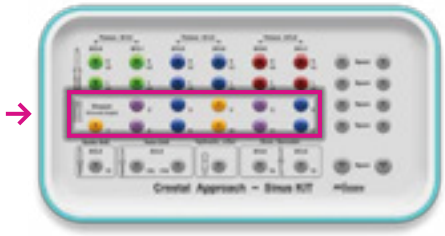
· Adjust the drilling RPM to 400~800 rpm.
· For safe drilling, fasten a stopper.
· Assemble the stopper before drilling.
· Regardless of straight or tapered Implant type, select the final drill diameter based on bone tissue.
· Perform autogenous bone extraction at low speeds.



Short Long

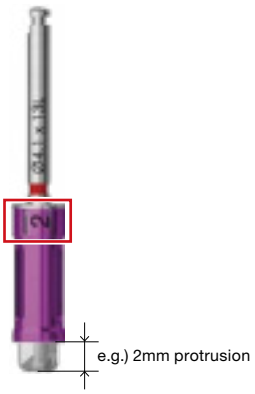
❹ Stopper

Tool to control CAS drilling depth for safe membrane lifting.



User instructions

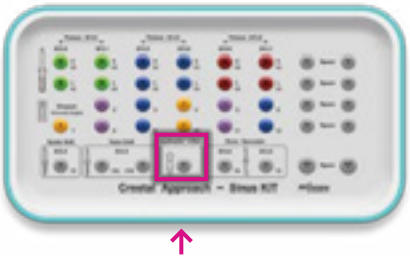
· The number on the stopper refers to the length of the tip protruding when fastened to the drill.
· Assemble the stopper you want to use to the drill.
· Drills and stoppers can be used 50 times.



Includes a tool to use for hydraulic lifting.

5 Hydraulic membrane lifter

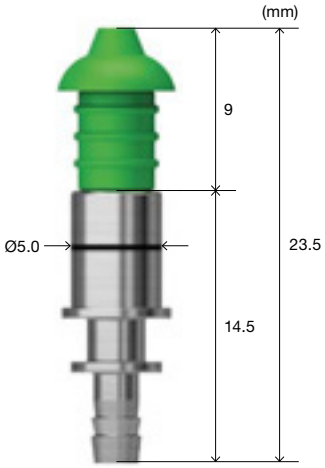
❺ Hydraulic membrane lifter



Maxillary sinus membrane elevation tool that uses hydraulic lifting.
Tool optimized for sealing function by applying wing type design.

User instructions

· Prepare a syringe of 3cc capacity.
· Assemble Syringe, Tube and Hydraulic Membrane Lifter.
· Inject saline solution slowly into the syringe.
· Use saline by gradually increasing the injection amount of 0.5cc ⇨ 1.0cc ⇨ 1.5cc.
· Can be used with OneCAS.



Drilling tool → Hydraulic lifting tool → Bone graft tool

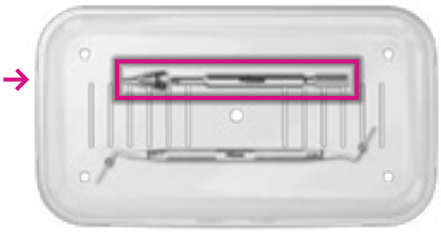
Includes a tool used for filling bone inside the sinus.

6 Bone carrier

7 Bone condenser

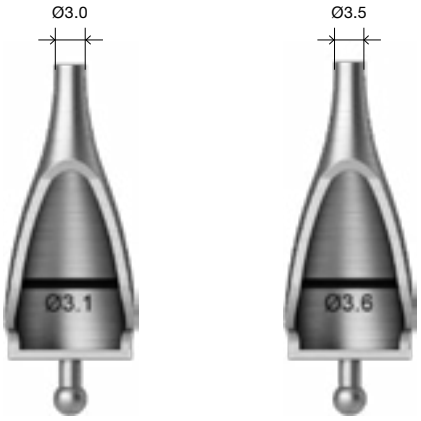
❻ Bone carrier

Device used for filling bone inside the sinus.



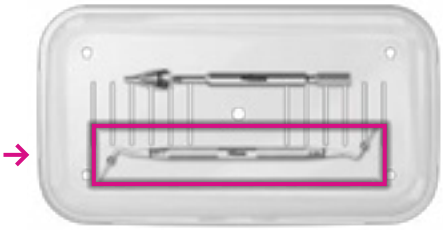
User instructions

· After drilling (CAS Drill Ø3.1/3.3), use Bone Carrier Head Ø3.0.
· After drilling (CAS Drill Ø3.6/ 3.8/3.8), use Bone Carrier Head Ø3.5.
· Select a head, then assemble the head by tightening the back of the main unit.
· Fill the back of the marking line of the head with bone material.
· Remove the bone material slowly with a bone condenser and completely fill the inside of the sinus (use repeatedly).



❼ Bone condenser

Tool that pushes bone material into the sinus.



User instructions

· Bone condenser ØØ1.1 solves blockage during bone filling.
· Bone condenser Ø2.0 improves bone filling performance.
· Select a diameter, remove the bone material slowly, then completely fill the inside of the sinus (use repeatedly).

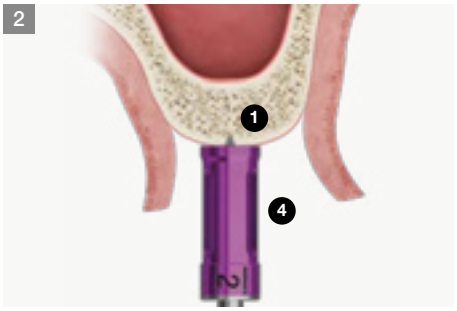
5 KIT sequence

Normal bone Residual bone height 6mm / TSIII Ø4.5×10mm placement

1

Check residual bone height

2



Initial drilling (Guide drill)

· Assemble a 2mm stopper to the guide drill, then drill the cortical bone (set the Implant placement position).

· Recommended RPM: 1,200~1,500rpm

3

Drilling (Ø2.2 twist drill)

· Assemble a 5mm stopper to the Ø2.2 twist drill, then drill 1mm under the residual bone.

4

Check depth (Depth gauge) - top panel

· Assemble the 5mm stopper to the depth gauge, then check whether the drilling hole is created properly and the maxillary sinus is open.

· Drill with a twist drill, then check the hole depth and bottom condition.

* Marking line: Use lower border. When marking line is 0, 1, 4, 5, 6, 10mm, it is easier to check length.

5

Drilling (Ø3.1 CAS drill)

· Assemble a 5mm stopper to the Ø3.1 CAS drill, then drill.

· Recommended RPM: 400~800rpm (autogenous bone collection: 50-100rpm

Ⓝ: Tool number

6

Check depth (Depth gauge) - top panel

· Assemble the 5mm stopper to the depth gauge, then check whether the drilling hole is created properly and the maxillary sinus is open.

· Drill with a Ø3.1 CAS drill, then check the hole depth and bottom condition.

7

Drilling (Ø3.6 CAS drill)

· Assemble a 5mm stopper to the Ø3.6 CAS drill, then drill.

· Recommended RPM: 400~800rpm (autogenous bone collection: 50-100rpm)

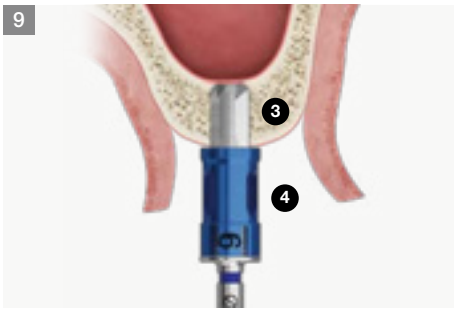
8

Check depth (Depth gauge) - top panel

· Assemble the 5mm stopper to the depth gauge, then check whether the drilling hole is created properly and the maxillary sinus is open.

· Drill with a Ø3.6 CAS drill, then check the hole depth and bottom condition.

9



Drilling (Ø3.6 CAS drill)

· Assemble a 6mm stopper to the Ø3.6 CAS drill, then drill.

· Recommended RPM: 400~800rpm (autogenous bone collection: 50-100rpm)

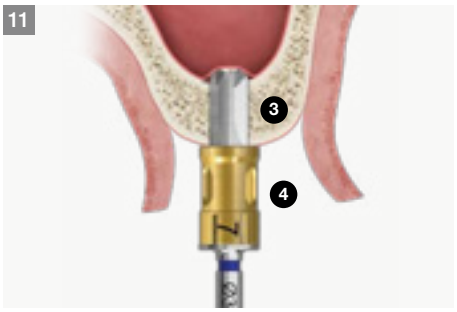
10

Check depth (Depth gauge) - top panel

· Assemble the 6mm stopper to the depth gauge, then check whether the drilling hole is created properly and the maxillary sinus is open.

· Drill with a Ø3.6 CAS drill, then check the hole depth and bottom condition.

11



Drilling (Ø3.6 CAS drill)

· After checking the maxillary sinus opening with a depth gauge, drill 1mm deeper if necessary.

· Assemble a 7mm stopper to the Ø3.6 CAS drill, then drill.

· Recommended RPM: 400~800rpm (autogenous bone collection: 50-100rpm)

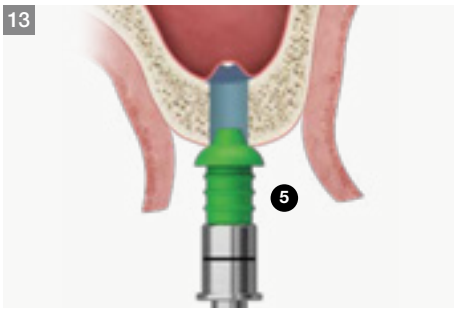
12

Check depth (Depth gauge) - top panel

· Assemble the 7mm stopper to the depth gauge, then check whether the drilling hole is created properly and the maxillary sinus is open.

· Drill with a Ø3.6 CAS drill, then check the hole depth and bottom condition.

13

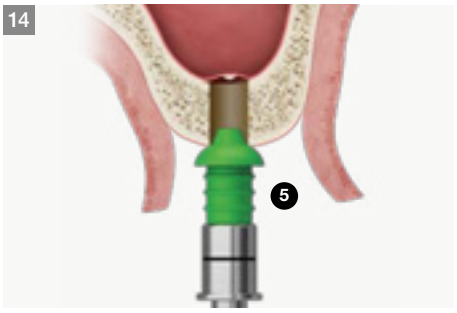


Inject 0.5cc of saline (forward)

· Fill the 3cc Syringe with 1.5cc of saline, then tighten the hydraulic membrane lifter.

· Align the hydraulic membrane lifter to be sealed in the drilling hole. Then. slowly inject approx. 0.5cc of saline

14

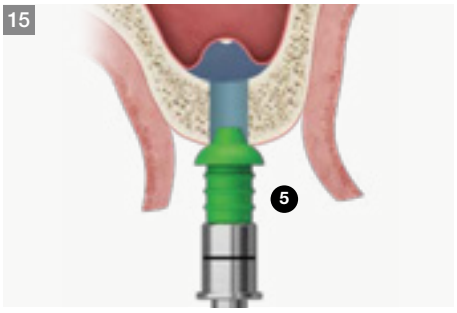


Suction 0.5cc of saline (reverse)

· Suction approx. 0.5cc slowly.

* Check for perforation of the maxillary sinus membrane: If blood is visible on the tube during syringe retraction, it indicates that the tube is being raised safely.

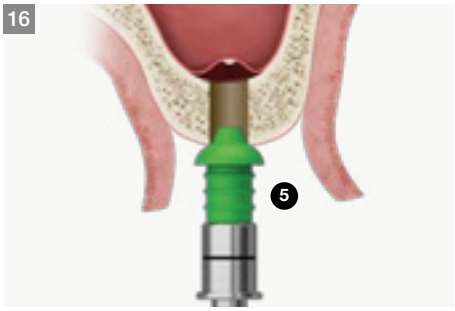
15



Inject 1.0cc of saline (forward)

· Suction approx. 1.0cc slowly.

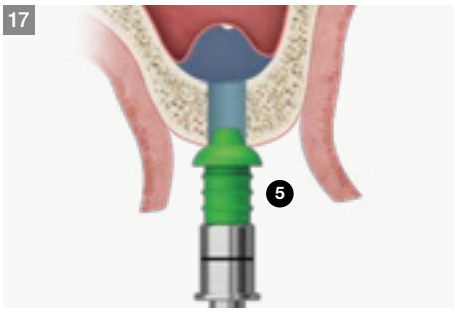
16



Suction 1.0cc of saline (reverse)

· Suction approx. 1.0cc slowly

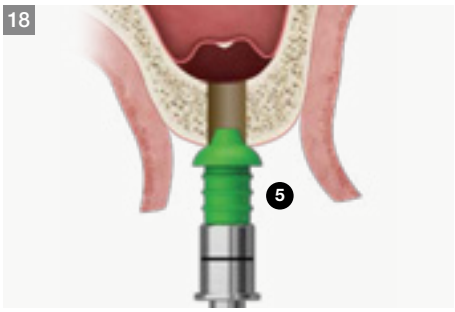
17



Inject 1.5cc of saline (forward)

· Suction approx. 1.5cc slowly.

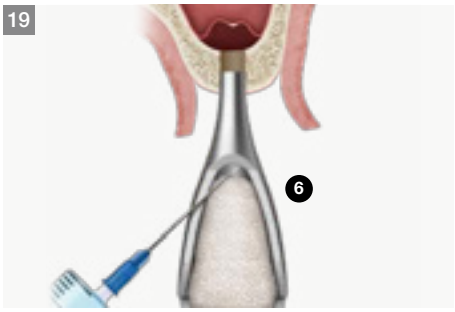
18



Suction 1.5cc of saline (reverse)

· Suction approx. 1.5cc slowly.

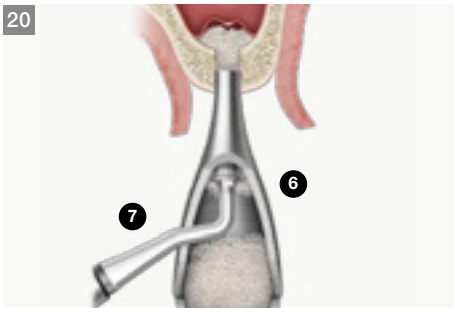
19



Prepare bone graft (Bone carrier)

· After filling the bone carrier with bone,
inject saline into the hole of the bone carrier.

20

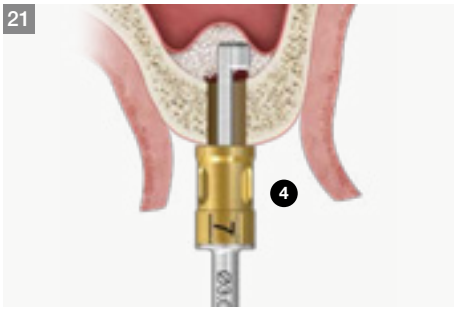


Fill bone graft (Bone condenser)

· Fill the bone inside the maxillary sinus with a bone condenser.

· Repeat the process 4 to 5 times

21



Spread the bone (Bone spreader) - Optional

· Spread the injected bone widely with a bone spreader.

· Recommended RPM: Max. 30rpm

22

Place Implant (Ø4.5×10mm)

· Install the Implant after setting the maximum torque of the engine to 40Ncm.

· Recommended RPM: 25rpm

*** Caution** · Exercise caution not to apply excessive torque when installing the Implant with a torque wrench.

· If the bone makes a sound when the Implant is placed, it must be rotated in reverse before resuming.

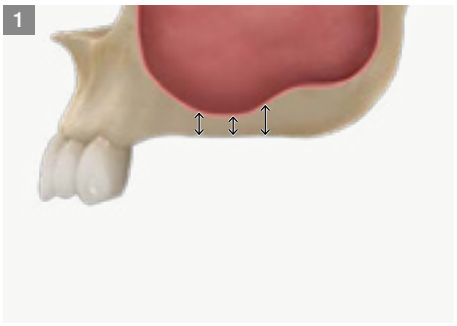
· If the placement torque is above 55Ncm, bone necrosis or the mount may not be separated.

· If the handpiece is stopped by over-torque, do not rotate the handpiece in the direction of Implant placement.

Normal bone #24, #25, #26 / TSIII Ø4.5×10mm placement

Ⓝ: Tool number

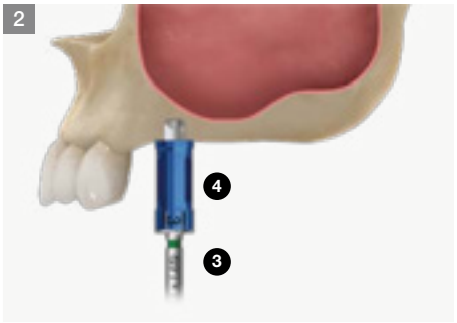
1



Check residual bone height

· #24 residual bone height: 4 mm
· #25 residual bone height: 3 mm
· #26 residual bone height: 5 mm

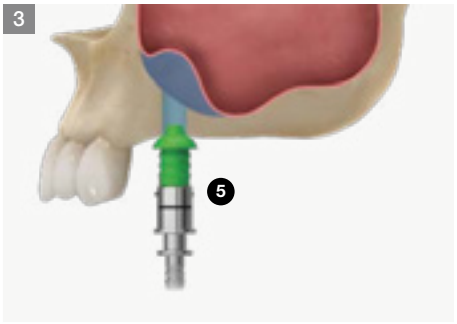
2



#24 drilling

· Assemble a 3mm stopper to the Ø2.2 twist drill, then drill.
  ⇨ Assemble a 3mm stopper to the Ø3.1 CAS drill, then drill.
  ⇨ Assemble a 4mm stopper to the Ø3.6 CAS drill, then drill.
  ⇨ After checking the maxillary sinus opening with a depth gauge, drill 1mm deeper if necessary. (assemble 5mm stopper on a Ø3.6 CAS drill)
· Recommended RPM: 400~800rpm

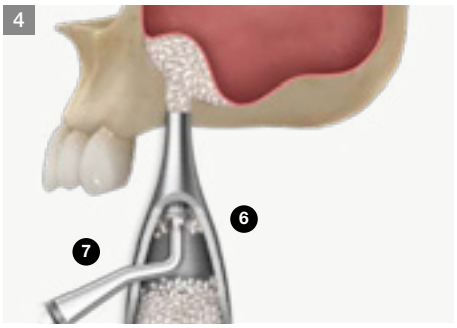
3



#24 hydraulic lifting

· Fill the 3cc Syringe with saline, then assemble the hydraulic lifter.
· Lift the maxillary sinus membrane by gradually injecting approx. 3cc of saline by sealing the hydraulic membrane lifter into the drilling hole.
(Pull & push method: 0.5cc ⇨ 1.0cc ⇨ 1.5cc)

4



#24 bone filling

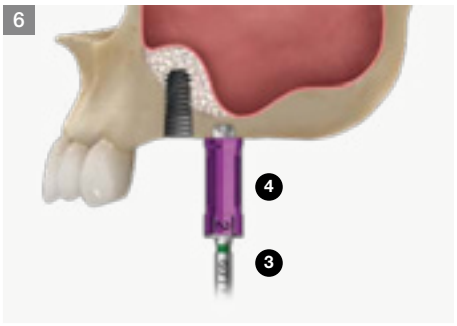
· Fill bone with a bone carrier and bone condenser.

5

#24 Implant placement (Ø4.5×10mm)

· Install the Implant after setting the maximum torque of the engine to 40Ncm.
· Recommended RPM: 25rpm

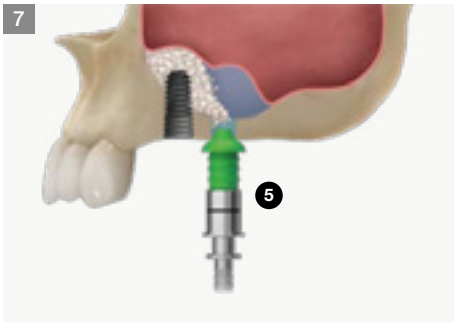
6



#25 drilling

· Assemble a 2mm stopper to the Ø2.2 twist drill, then drill.
  ⇨ Assemble a 2mm stopper to the Ø3.1 CAS drill, then drill.
  ⇨ Assemble a 3mm stopper to the Ø3.6 CAS drill, then drill.
  ⇨ After checking the maxillary sinus opening with a depth gauge, drill 1mm deeper if necessary. (assemble 4mm stopper on a Ø3.6 CAS drill)
· Recommended RPM: 400~800rpm

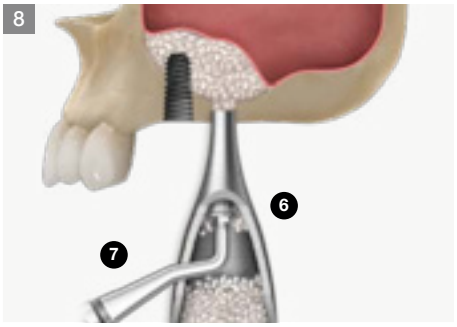
7



#25 hydraulic lifting

· Fill the 3cc Syringe with saline, then assemble the hydraulic lifter.
· Lift the maxillary sinus membrane by gradually injecting approx. 3cc of saline by sealing the hydraulic membrane lifter into the drilling hole.
(Pull & push method: 0.5cc ⇨ 1.0cc ⇨ 1.5cc)

8



#25 bone filling

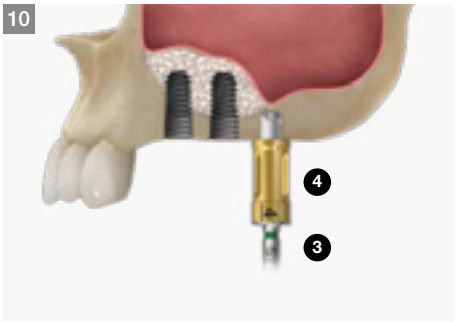
· Fill bone with bone carrier and bone condenser.

9

#25 Implant placement (Ø4.5×10mm)

· Install the Implant after setting the maximum torque of the engine to 40Ncm.
· Recommended RPM: 25rpm

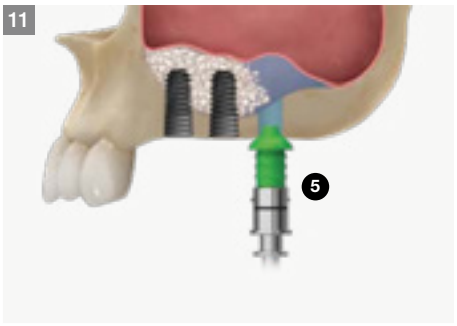
10



#25 drilling

· Assemble a 4mm stopper to the Ø2.2 twist drill, then drill.
  ⇨ Assemble a 4mm stopper to the Ø3.1 CAS drill, then drill.
  ⇨ Assemble a 5mm stopper to the Ø3.6 CAS drill, then drill.
  ⇨ After checking the maxillary sinus opening with a depth gauge, drill 1mm deeper if necessary. (assemble 6mm stopper on a Ø3.6 CAS drill)
· Recommended RPM: 400~800rpm

11

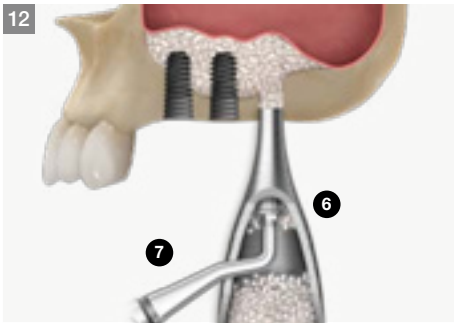


#26 hydraulic lifting

· Fill the 3cc Syringe with saline, then assemble the hydraulic lifter.

· Lift the maxillary sinus membrane by gradually injecting approx. 3cc of saline by sealing the hydraulic membrane lifter into the drilling hole.
(Pull & push method: 0.5cc ⇨ 1.0cc ⇨ 1.5cc)

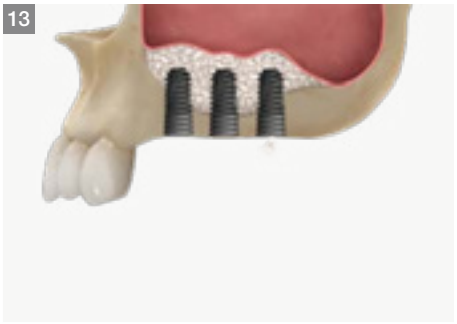
12



#26 bone filling

· Fill bone with a bone carrier and bone condenser.

13



#26 Implant placement (Ø4.5×10mm)

· Install the Implant after setting the maximum torque of the engine to 40Ncm.

· Recommended RPM: 25rpm

How to take care of the KITS

1

Soak (saline/distilled water)

· Soak the surgical instruments in saline or distilled water

2

Drying (remove moisture)

· Completely dry all drills, drivers, tools, etc by using a towel or fan.

3

First wash

· After surgery, immediately separate and wash all the used instruments.

4

Organize instruments in the KIT

· Place the completely dried instruments in the KIT
· Make sure they are properly placed in the correct location
· Refer to the color coding for reference

5

Second wash

· Thoroughly wash with distilled water or running water to avoid remnants of blood or foreign debris.

6

Sterilization and storage at room temperature

· Wrap clean kit in a sterilization wrap or pouch and place into sterilizer.
· Sterilize temperature - 121°C to 132°C, time duration 15 - 30 minutes, dried and stored at room temperature.
· KIT re-sterilization is recommended immediately before surgery.
· Before and after sterilization, thoroughly dry (the drills will corrode if not fully dried after sterilization)

Important Information and Legal Notices 2026.03 ver.1.1

1. IMPORTANT NOTICE

This catalogue is intended solely as an informational and educational guide for trained dental professionals. It does not replace the applicable Instructions for Use (IFU), product labelling, formal clinical training, treatment planning, or independent professional judgment.

All clinical protocols, drilling sequences, cleaning instructions, sterilization requirements, torque recommendations, indications, contraindications, warnings, and procedural steps must be verified against the current product-specific IFU and the applicable product label for the relevant REF/product code prior to use.

In the event of any discrepancy between this catalogue and the applicable IFU, product labelling, or other official Osstem documentation, the IFU, labelling, and official product documentation shall prevail.

2. PRODUCT INFORMATION, CHANGES, AND AVAILABILITY

All products, specifications, protocols, recommendations, illustrations, and other information contained in this catalogue are subject to change without prior notice.

Not all products may be approved, cleared, released, licensed, or otherwise available in all markets. Product availability, indications, and regulatory status may vary by country. For information on the current product portfolio, approved indications, and local availability, please contact your local Osstem representative or Customer Service and consult the current official Osstem documentation.

3. PROFESSIONAL USE ONLY

Osstem Implant products are intended for use by appropriately trained dental professionals only. Dental implant treatment involves complex professional procedures and requires appropriate education, clinical training, patient selection, treatment planning, and radiographic as well as clinical evaluation.

The suitability of any procedure must be assessed individually for each patient, taking into account anatomy, bone quality and quantity, occlusion, systemic conditions, oral hygiene, compliance, and any other relevant clinical factors.

4. PRODUCT DESCRIPTION AND COMPATIBILITY

Osstem Implant offers implant fixtures, prosthetic components, surgical instruments, and related materials for dental implant treatment. Product codes, specifications, lot numbers, dates of manufacture, and expiration dates, where applicable, must be checked on the product label before use.

Unless expressly stated otherwise in the applicable product documentation, Osstem Implant abutments, prosthetic components, instruments, and related accessories are intended to be used only with compatible Osstem Implant fixtures and components. Use in combination with components or instruments from other manufacturers may result in improper fit, incomplete locking, loosening, fracture, reduced performance, or other clinical complications.

5. STERILITY, CLEANING, REPROCESSING, AND STORAGE

Sterile products supplied in sterile packaging must be used only if the packaging is intact and the expiration date has not passed. If sterile packaging has been opened, damaged, or has expired, the product must not be used.

Single-use products must not be reused, reprocessed, or resterilized.

Reusable instruments must be cleaned, disinfected, inspected, maintained, and sterilized strictly in accordance with the applicable Osstem IFU before reuse.

Products must be stored in accordance with the applicable labelled storage conditions and protected from moisture, contamination, direct sunlight, and other adverse environmental conditions.

6. CLINICAL PROTOCOLS AND PROCEDURAL GUIDANCE

Any surgical, prosthetic, drilling, insertion, loading, cleaning, maintenance, or other procedural guidance shown in this catalogue is provided for general informational purposes only and must be adapted to the individual patient, the specific product, and the current approved IFU.

Clinicians remain solely responsible for selecting the appropriate treatment protocol and for determining whether the intended procedure, component selection, loading protocol, and clinical application are appropriate for the individual case and within the approved indications for the relevant product.

7. WARNINGS, CONTRAINDICATIONS, AND POSSIBLE COMPLICATIONS

Improper patient selection, inadequate treatment planning, non-compliance with the applicable IFU, improper use, off-label use, product modification, poor oral hygiene, infection, insufficient bone quality or quantity, excessive occlusal loading, or other unfavorable clinical conditions may result in complications or treatment failure.

Possible complications and adverse events may include, without limitation, implant instability or failure, loosening, fracture, bone loss, infection, soft- or hard-tissue complications, prosthetic complications, delayed healing, or the need for revision or removal.

Contraindications and precautions must always be assessed in accordance with the applicable Osstem product documentation and accepted professional standards of care.

8. INTENDED PURPOSE

The products are tools and instruments for surgical placement of Osstem implant fixtures. The drill is used to make implant sites. The cortical drill and tap removes cortical bones or forms threads on bone for the purpose of preventing excessive torque generated when implanting a fixture on hard bone. The drivers are for the placement of the fixture, and the prosthesis is used for setting. In addition, other instruments and tools will be used as aids in the Implant procedure.

The applicable product-specific IFU must always be consulted to confirm the intended purpose, indications, limitations, and approved clinical applications of the relevant product.

9. ACCURACY OF INFORMATION

Although reasonable care has been taken in preparing this catalogue, typographical, editorial, translation, printing, and formatting errors may occur. Information may also become outdated as a result of product updates, regulatory changes, technical revisions, or clinical developments.

No representation is made that this catalogue is complete, current, or error-free in every respect. Users must verify all critical information against the current IFU, product labels, and other official Osstem documentation before clinical use.

10. ILLUSTRATIONS AND EXAMPLES

Product illustrations, diagrams, radiographic examples, case images, and step-by-step demonstrations are for illustrative purposes only. Unless expressly stated otherwise, they are not shown to scale and do not guarantee any clinical outcome.

Example cases do not constitute a promise or representation of treatment success in any individual case.

11. TRADEMARKS AND COMPANY NAMES

All trademarks, trade names, product names, brand names, and company names are the property of their respective owners.

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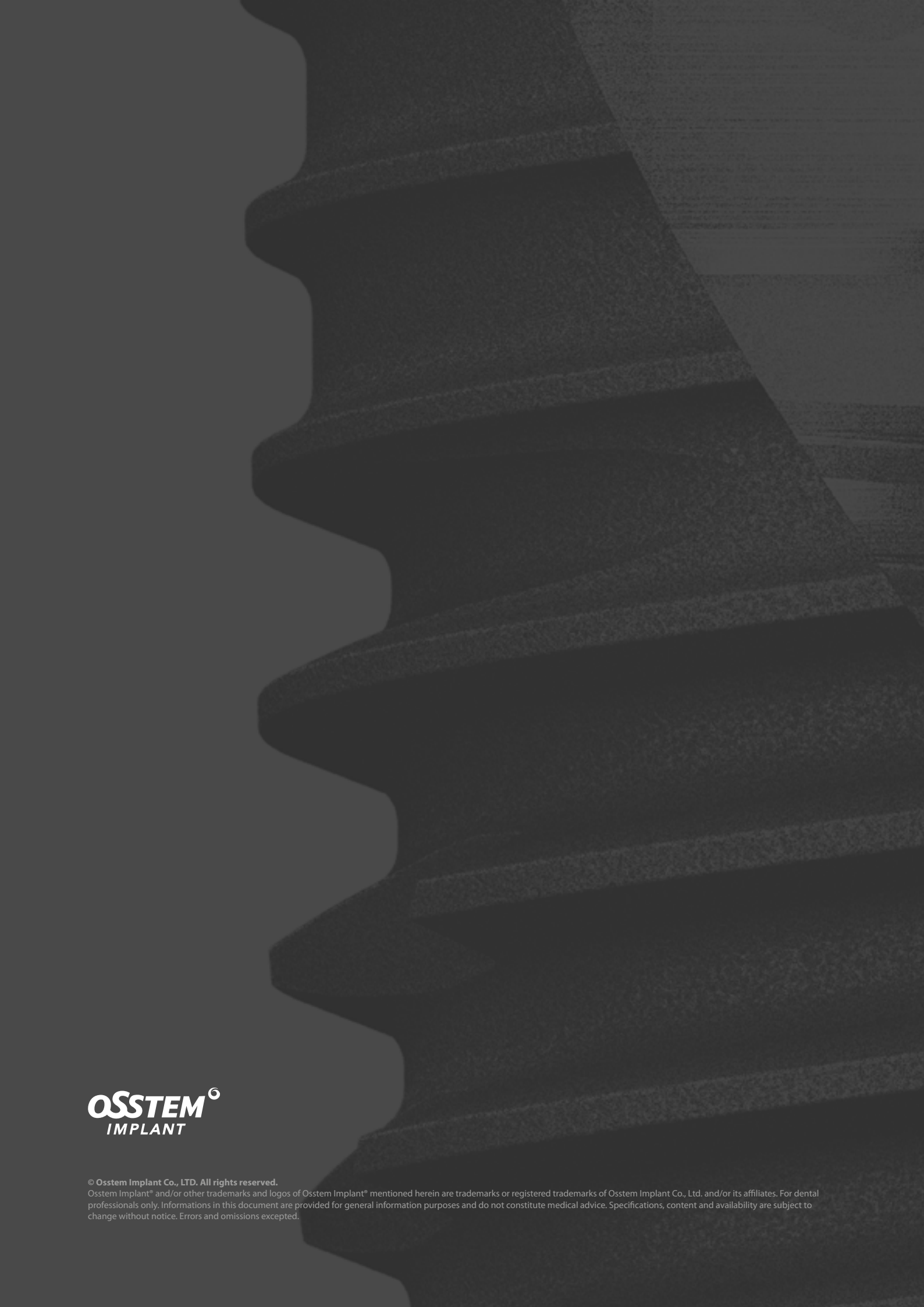

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